

CLASSROOM DIFFERENTIATION: IMPLEMENTING  
HOWARD GARDNER'S THEORY OF  
MULTIPLE INTELLIGENCES IN  
THE LD CLASSROOM

by

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## **DEDICATION**

I dedicate this thesis work to my fiancée, my three children, my mother, my daddy, and my dear friend.

My Darling Robert, thank you for your unending and unwavering support throughout my entire academic career. You are amazing, and I love you.

My Wonderful Children, Korrie, Kristyn, and Conner, thank you for your support, humor, and understanding. I hope I've made you proud. I love you.

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Dad, one of the most wonderful blessings in my life occurred when I was only five days old – the day you adopted me. You were a great daddy, and I never once questioned your love for me. I know you are very proud.

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## **CHAPTER I**

### **INTRODUCTION**

Originally, the idea for this research project began when my graduate level Rhetoric & Composition studies at Texas State University intersected with my newly acquired Language Arts teaching career at a small non-profit, private school in Austin, Texas; this is a school which serves only students with learning disabilities. Ultimately, my interest in rhetoric and composition coupled with my desire to teach led to the melding of my research and my new career. While working on my graduate studies at Texas State, I was hired at the aforementioned private school as a part-time language tutor for students with dyslexia. Having no formal experience in tutoring in this population or this age group, I began to engage in conferences and teaching practicums in order to gain a better understanding of how to assist these learners with reading deficits. I began learning more and more about how to help students with learning disabilities achieve and succeed academically. My general love for learning and my specific desire to assist these students were apparent, and I began to develop a rapport with my students that was visible.

To my superiors, my motivation and engagement was palpable; the connection I had with the students was undeniable, and their responses to me were exciting. The next semester, I was hired to take over an existing Language Arts classroom as a long-term substitute, which then led to a full-time Language Arts teaching position. The small school where I work and where my research takes place, attempts to implement an educational theory developed by Dr. Howard Gardner, called Multiple Intelligences, and the students learn about the theory and complete questionnaires in order to understand

what their ‘multiple intelligences’ are. As an aside and to clarify: I use the phrase “attempts to implement...” because my studies of this theory have caused me to realize there have been varying interpretations of Gardner’s theory but, thankfully, more often than not, these interpretations are being used positively and with varying but affirmative results. To continue, as my teaching career progressed, my peers and administrators gained more respect for the work I was doing with my students, and I was eventually asked to research and write new curriculum for the Language Arts program; soon after, I was also appointed the Language Arts Department Head.

As I began to research and learn more about the theory of Multiple Intelligences and specific curriculum for students with learning differences, I became expressly interested in how this theory was being (and had been) interpreted and implemented throughout the world of education since its inception in the late 1980s. The theory of Multiple Intelligences was originally an intellectual theory grounded in the world of neuropsychology. Although it received little traction in that world, it was greatly embraced by the teaching community as a useful teaching theory. Since my school had also embraced Multiple Intelligences, I was specifically interested in how my colleagues were interpreting and also implementing the theory and how, if at all, it was affecting our students.

As stated previously, 100% of the students at the private school where I teach struggle with one or more (mild to severe) learning disabilities or “learning differences,” as we call them. A large percentage of these students have been diagnosed with Attention Deficit Disorder (ADD) and have severe struggles with attention and executive functions – staying on task, completing tasks, and creating schedules and timelines for tasks.



Another fairly large portion of the students (approximately 34%) have been diagnosed as being on the Autism Spectrum (mild, moderate, or severe Autism or Asperger's Syndrome); other diagnoses include: dyslexia, dysgraphia, auditory or visual processing disorders (PD) as well as obsessive compulsive (OCD) and anxiety disorders. Educating students that struggle with ADD or students with a spectrum diagnosis is quite a challenge, but an added challenge comes when a student diagnosed with ADD also suffers with dyslexia, dysgraphia, anxiety, or an auditory processing disorder. Teachers must have extreme patience, and they must also be talented and innovative in the area of differentiating within the classroom. In my opinion, if teachers can successfully differentiate, students will have a wider opportunity to learn how to achieve and maintain academic success.

To further complicate matters, this population of learners not only has diagnoses of learning disabilities, but they also typically struggle with confidence issues and usually have not found success in the traditional classroom. Hence my job: teaching at a non-profit, private school specializing in educating bright students who have academic struggles due to their learning differences. In education in general, I agree with Dr. Gardner in his assessment that "students need to take a very active role in their learning – to ask questions; to do things hands-on," and his MI theory allows for that (Gardner).

The research herein expands on the existing body of research regarding Multiple Intelligences, which typically discusses implementing the theory within a traditional classroom. My work regarding the study of Multiple Intelligences expands the research to include important information regarding implementing the theory within the "LD" classroom (the classroom exclusively occupied by students with learning disabilities).

## **Statement of the Problem**

In classrooms across America, many teachers struggle with the challenge of engaging students throughout an entire school year, let alone engaging students that have gradations of mind-sets, intellect, interests, and abilities. The disparity in students within one classroom alone is sometimes staggering. Math abilities are likely different from one student to the next as well as reading and spelling abilities; several students may be reading at or above what is considered to be grade level, while others' abilities are average or even well below what is considered grade level. This comparison merely scratches the surface of the difficulties abound in teaching a varying group of students in other disciplinary areas such as science, literature, or social studies. In light of this, educators must put forth extreme efforts in the creation of innovative, engaging, and interesting ways to present a myriad of topics in the classroom. I submit that students with varying degrees of interests and abilities call for varying degrees of learning opportunities. In other words, teachers who want to offer their students more opportunities to capture and retain content are teachers who will seek to differentiate their classroom instruction.

Differentiation is key, especially for students with learning disabilities (LD). The traditional teaching model values one way of teaching and assumes all students learn in the same manner, and therefore strictly caters to one way of learning. The traditional model whereby teachers lecture, students take notes, and students are subsequently expected to regurgitate information in a standardized and non-dynamic way especially does not work for the LD student, and, beyond teaching, assessment of LD students is another tangled issue. Under the traditional model of teaching, all students are assessed

based on the same static standards. Furthermore, these standards are grounded solely in mathematics and linguistics therefore deeming the assessments imbalanced at best and unreliable at worst. Unfortunately, too many schools seem to be paralyzed and unable to move away from traditional ways of instructing, even though evidence suggests, “state, district, and local policy seem to have little influence on learning” (Wang). Nonetheless, teachers are bound by these traditional policies even though traditional ways of teaching are not conducive to all students. Moreover, in being mindful of students with learning disabilities, differentiating is absolutely essential.

I propose implementing Dr. Howard Gardner’s Multiple Intelligences theory within the LD classroom as a differentiation technique. Gardner’s theory asserts that each person has “multiple intelligences” or ways of learning that are geared more toward their specific thought processes (Gardner lists 8 categories of intelligences), and while he admits it is not necessary to teach in eight different ways for each topic, he does agree that it is important for students to have access to information based on their ways of receiving, processing, decoding, and producing information. By implementing multiple intelligences theory in the LD classroom, educators would be offering students an array of more engaging activities but, and, more importantly, these opportunities would increase the chances of obtaining and retaining knowledge. This is essential because LD students have a myriad of ways of thinking and approaching material. For example, the student with Attention Deficit Disorder has a difficult time focusing and staying on task for long periods of time and usually falls in the “bodily-kinesthetic” category under Gardner’s theory. The student with an auditory processing disorder typically needs to see his or her assignment directions in writing and may typically fall into Gardner’s “logical-

mathematical” category; the student with a visual processing disorder, may have trouble in processing different shapes or colors – shapes and colors which may appear in a variety of visual images or documents used within the typical classroom, e.g., slide presentations or whiteboard markers. Further, students on the Autism Spectrum may not work well with their classmates as they typically struggle with issues of anxiety and perseverance. These “Spectrum” students may fall into Gardner’s “intrapersonal” category, i.e., they prefer to work alone. The classroom moments whereby students are offered greater opportunities to gain knowledge – opportunities that are geared more toward the individual student (their strengths, intellects, and abilities) – are, in part, what will define their current academic success as well as their future achievements whether they be academic, social, or professional. In the complex world of educating LD students, devising varying methods of delivering information to students based on their strengths, interests, and abilities are critical. Allowing LD students the opportunity to receive information as a group or individually as well as through varied methods is imperative, and, I assert, that differentiated instruction through the implementation of Multiple Intelligences allows for these processes to take place.

### **Research Questions**

With the obvious advantages to differentiation, especially in the classroom where 100% of the students have learning challenges or deficits in one area or another, I pursued a line of questioning that I thought would be cogent, relevant, and helpful to scholars hoping to find pertinent information regarding the current and future implementation of Multiple Intelligences in the LD classroom. First and foremost, what is Multiple Intelligences and how does it differ from traditional views of intelligence? The

Swiss psychologist, Jean Piaget's contribution and the discussion of general or "g" intelligence is integral as a foundational thought in this discussion, because it is the basis for traditional models of viewing and assessing intelligence. While, "g" intelligence is highly valued in traditional teaching environments, it seems to merely cover a couple of aspects of a person's full intellectual potential. For example, in "Reframing the Mind," D.T. Willingham asserts that any evaluation of 'intelligence' that does not include "g" is flawed and not consistent with traditional ideas, assessments, and valuations of intelligence (21). Gardner has not denied the existence of "g" and relays that general intelligence has a useful component just as his MI theory is useful. The problem with general intelligence, as Gardner relays within an article entitled "The science of multiple intelligences theory: a response to Lynn Waterhouse," is that it ["g"] is much too narrow and does not adequately capture the multiple ranges of cognitive potential within the human mind. Also, in fully understanding, exploring, and interrogating the idea of implementing Multiple Intelligences, I felt it important to gather and assess data on how schools across the US (as well as how teachers at my school) are interpreting and implementing Multiple Intelligences. Subsequently, the discussion of learning about and implementing MI, leads to the discussion of how to 'find' a student's multiple intelligences: How are students being assessed as to their Multiple Intelligences? Finally, my investigations are interlocked in my day-to-day world where I teach, and leads to another important question that I felt necessary to investigate: Do parents and teachers of LD students perceive that students are more academically successful when placed in a classroom where Multiple Intelligences is being used as a teaching tool (as compared to previous educational experiences)?

## CHAPTER II

### LITERATURE REVIEW & THEORETICAL PERSPECTIVE

#### **Differentiation**

Differentiated instruction is not a new concept in education. As stated previously, no two students learn in the same manner, and each student – based on his or her interests and abilities – has a preferred way of learning and engaging. Carol Ann Tomlinson - a pioneer in the field of education and specifically in the field of differentiated education - recommends teachers differentiate instruction by offering varied methods of presenting class material in order to accommodate and engage more learners. As explained by Tomlinson in *Differentiation of instruction in the elementary grades*, differentiated instruction “at its most basic level...consists of the efforts of teachers to respond to variance among learners in the classroom” (Tomlinson 2). Further, differentiation, as mapped out by Tomlinson, consists of four categories:

1. Content: described as what the student needs to learn (topic)
2. Process: activities for content learning
3. Products: projects that encourage study, rehearse, and application
4. Learning environment: the way the classroom is set up and how it ‘feels’

Tomlinson details her idea of differentiation and offers teachers ideas on how exactly to differentiate not only instruction but also classroom environment.

Educators can differentiate content by:

- Using varying leveled reading materials at varying readability levels
- Offering audio recordings as well as text of reading material
- Offering word lists for varying levels

- Organizing reading groups or reading buddies
- Re-teaching lessons for struggling students

Educators can differentiate process by:

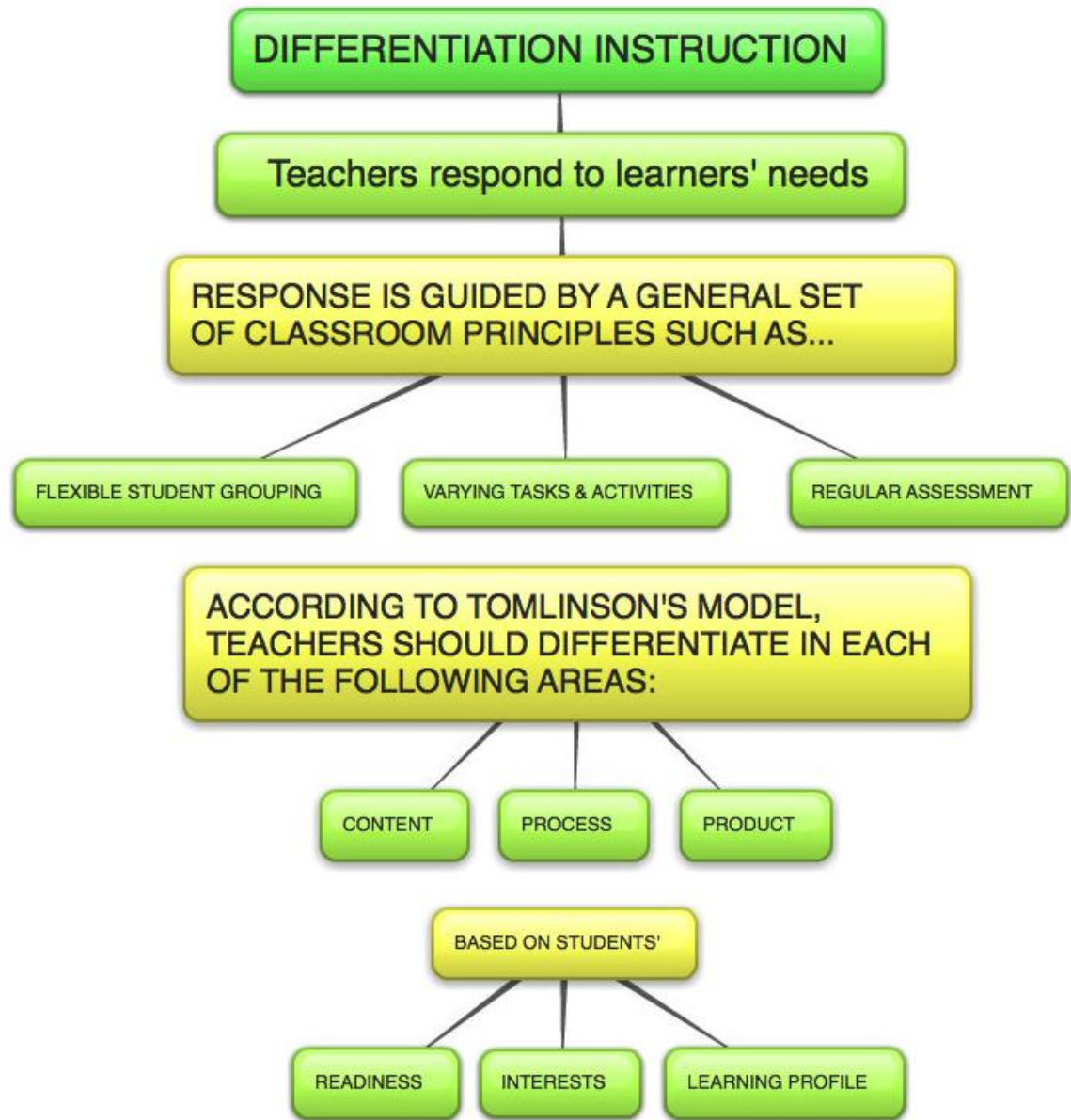
- Offering tiered activities, meaning all students will initially work at the same level but will proceed with varying levels of support or challenge
- Including classroom centers allowing students to explore subcategories of content based material
- Providing agendas or lists detailing tasks that need to be completed
- Providing materials for manipulation and hands-on activities
- Offering more time to complete a task and additional support
- Offering additional encouragement to the advanced learner

Educators can differentiate products by:

- Using varying rubrics that represent students' varied skill levels
- Allowing students to express knowledge through varying methods
- Allowing students to work in groups or alone
- Encouraging students to create their own assignments (ensuring all elements required are present)

Educators can differentiate environment by:

- Creating an environment which allows students to move around
- Offering a space for students to work quietly or as a group
- Providing materials that represent a variety of cultures
- Providing materials that appeal to a variety of learners
- Creating a routine whereby students can obtain help when they need it



Focus herein is heavily placed on Tomlinson's formula for differentiation, as hers is one that many scholars and educators have embraced and affirmed. But, for this project, the definition of differentiation, that I have created, will stand as: *modifying and tailoring curriculum, teaching styles, and strategies in order to reach all learners and meet their needs based on their interests, skill levels, backgrounds, and cognitive abilities in an attempt to assist them in meeting their full academic potential.* In Jennifer Carolan



and Abigail Guinn's 2007 research on differentiation, they expand on Tomlinson's work and relay the following information:

Each of the teachers we studied considered the social and emotional aspects of the classroom environment essential to differentiation. Rather than seeing differences in ability, culture, language, or interests as hurdles, these teachers turned differences into assets (46).

According to Carolan and Guinn, successful differentiation includes being mindful of students' language and culture as well as abilities and interests.

In *Curriculum Mapping for Differentiated Instruction K-8*, Michelle Langa and Janice Yost - former teachers turned education consultants - explain the use of several different techniques, based on historical educational issues coupled with seemingly successful educational theories, in order to differentiate in the classroom. Langa and Yost offer instructions on how to blend curriculum mapping, standards and rubrics, student-centered environments, learning styles, and cross-curricular units all intermingled with differentiated instruction to increase student achievement (x). Some scholars may argue that simply offering student-centered classrooms or planning cross-curricular units in and-of-itself is differentiating. It seems that Lang and Yost agree but indicate differentiation is only *one* aspect of a successful teaching recipe.

Further, these two authors explain three important points of differentiating:

- Interest Level: reconciling the interests of each student and offering appealing and interesting topics for study.

- Readiness Level: using all available assessments and observations; discern the ability or readiness level of each student.
- Learning Style: understand students' preferences and cultural persuasions.

As stated above, many educators have taken Tomlinson's differentiation ideas and expanded them to include cooperative education and student centered learning. As discussed in "What Helps Students Learn," Margaret Wang and her colleagues – through extensive research - indicate "direct influences have a greater impact on learning than indirect influences" (74). By this, Wang means school policies and procedures, which are most times far removed from the actual classroom, have the least impact on a student's learning, while students are most influenced by the amount of time a teacher spends on a particular topic. Another influential factor, according to Wang is the quality of social interactions between the teacher and the student. Further, the data gathered and analyzed by Wang and her colleagues indicates many other influential factors on students' learning. The research yielded 28 different "relative influences on learning." As previously stated, according to Wang's research, school or district-wide policies, procedures, and demographics are among the least influential in student learning while student aptitude and classroom instruction have much greater influences, and classroom management (student grouping, smooth transitioning, teacher "with-it-ness," and learner accountability) is the most influential category according to Wang's research (76).

As you can glean, educators have many challenges when it comes to differentiation; I believe a good solution to this evergreen challenge of educators is to locate and implement an educational theory that accommodates the diverse learning needs of students – a theory that promotes different ways of learning for different minds.

Many educational theories exist: Experiential Learning made known by theorist Rogers, the theory of “Chunking” explained by Miller, Locke’s “Tabula Rasa” theory, Bandura’s Observational Learning Theory, and Comenius’s Universal Knowledge theory. Today, educational students still study these theories, but which of, if any, are being successfully put into practice in classrooms?

One educational theory that has gained momentum, and been extremely influential, in the world of education over the last few decades is Dr. Howard Gardner’s Theory of Multiple Intelligences. In 1983, Gardner, a famed professor at Harvard’s School of Education, proposed a theory and a new definition of “intelligence” in his book *Frames of Mind*. Gardner has spent most of his academic career researching his ideas relating to cognitive development and knowledge construction. Gardner relays his theory that the mind is not as a singular machine but rather a series of separate faculties with relative relations. Gardner’s research and academic career is multi-disciplinary spanning neurology, sociology, psychology, and biology and has offered rich data from which to draw upon.

In finding ways to differentiate in the classroom, Multiple Intelligences may be the outlet through which these skills can be highlighted. Toni Noble, after extensive research regarding Bloom’s Revised Taxonomy and Gardner’s Multiple Intelligences Theory, relays that coupling the two theories and implementing them in the classroom helped teachers “in different ways to cater to the individual learning capabilities of the students in their classes and thereby facilitated student success” (28). According to Noble, students identified as learning disabled as well as students identified as gifted can both benefit from classroom differentiation and the implementation of multiple

intelligences. Noble also recognizes that teachers are traditionally bound to state mandated curriculum content. Therefore, one of the few places where the teacher can implement differentiation and other classroom strategies – such as multiple intelligences - is “how they teach,” i.e., how they organize their classrooms and how they actually present content to students.

According to Noble’s data, 73% of teachers surveyed “perceived that the MI Theory provided them with a tool for catering to different students’ intellectual strengths or ways of learning. Several of these teachers saw particular benefits for children with academic weaknesses” (196-197). As stated previously, and strongly relayed by Ann Logsdon and other differentiation advocates, traditional teaching methods are usually favored by administrators, but Noble’s research implies that traditional formulas may not be the most valuable and productive ways to introduce content to students. Noble’s research specifically indicates that the use of multiple intelligences theory in the classroom with students who struggle with traditional methods is not only beneficial but offers greater opportunities for these students to demonstrate academic strengths.

### **Dr. Howard Gardner**

Dr. Howard Gardner, a renowned Harvard Professor and multi-disciplinary scholar, began studying developmental and cognitive psychology in the mid 1960s. For more than two decades, Dr. Gardner studied neuropsychology patients – specifically stroke victims; his goal was to understand the post-stroke pathological breakdowns of the brain. In 1979, Gardner, along with other Harvard Graduate School researchers, received a grant specifically offered to research the cognitive potential of humans and how best to realize this potential; the project, at the time, was known as the Project on Human

Potential. Gardner and his colleagues began combining their studies in anthropology, neuroscience, and psychology in an attempt to categorize human intellectual capacities; hence the theory of Multiple Intelligences was born.

Gardner's theory of multiple intelligences is introduced to the world in his 1983 book *Frames of Mind*, and the theory is based on his extensive interdisciplinary research and the idea that humans do not possess merely a single intelligence (referred to as "g" or general intelligence by psychologists) but humans rather possess many intelligences. This view is in contrast to a traditional view or test of intelligence, which categorizes a person's cognitive abilities based primarily on reading and writing assessments – seen most times as innate abilities. Dr. Gardner, rather, believes a person to have fluid cognitive abilities and strengths in multiple intelligences or multiple areas of the brain. Gardner categorizes these multiple intelligences as: Linguistic, Logical-Mathematical, Musical, Spatial, Bodily-Kinesthetic, Interpersonal, and Intrapersonal – more detailed information on each category will appear later in the thesis.

Decades later, in the 2011 edition of *Frames of Mind*, Gardner offers a new introduction called, "Multiple Intelligences: The First Thirty Years." He also offers nods to other scholars and colleagues who continue to lead projects regarding Multiple Intelligences, and he responds to critics of MI and gives advice to educators with the desire to implement MI within their schools. Even with the additions to the decades old book, Gardner continues to contend all humans have these multiple intelligences, and people draw upon these different abilities in order to solve problems. Gardner asserts that traditional schools rely heavily (and most times solely) on linguistic and mathematical assessments for students' academic promotions, and Gardner believes "that human

cognitive competence is better described in terms of a set of abilities, talents, or mental skills” which he calls intelligences (8). Gardner’s theory has the potential of more thoroughly and broadly defining and assessing the traditional notion of intelligence.

### **Multiple Intelligences**

For decades, teachers have used the theory of Multiple Intelligences to transform traditional classrooms into buzzing and successful educational settings. The data on this topic is rich. Further, the amount of rich data regarding the implementation of multiple intelligences within a population of gifted and talented students is also considerable. On the contrary, researchers and educators are merely beginning to scratch the surface regarding the implementation of this theory within the LD classroom, i.e., a classroom occupied by students with learning disabilities. Regarding MI and traditional schools and classrooms, we can find data such as this: “Multiple Intelligences has transformed teaching” (Vaille). And, “this unique academic learning approach capitalizes on students’ strengths and creates a deep level of understanding that allows children to use what they’ve learned in new and different situations” (Hoerr). In the noble and necessary search to also differentiate in the LD classroom, Multiple Intelligences is an excellent conduit through which the LD student’s skills can be highlighted. Below is the criteria Gardner employs in order to identify each of his multiple intelligences category:

Criteria for Identification of an Intelligence
It should be seen in relative isolation in prodigies, autistic savants, stroke victims or other exceptional populations. In other words, certain individuals should demonstrate particularly high or low levels of a particular capacity in contrast to other capacities.
It should have a distinct neural representation—that is, its neural structure and functioning should be distinguishable from that of other major human faculties.
It should have a distinct developmental trajectory. That is, different intelligences should develop at different rates and along paths, which are distinctive.
It should have some basis in evolutionary biology. In other words, an intelligence ought to have a previous instantiation in primate or other species and putative survival value.
It should be susceptible to capture in symbol systems, of the sort used in formal or informal education.
It should be supported by evidence from psychometric tests of intelligence.
It should be distinguishable from other intelligences through experimental psychological tasks.
It should demonstrate a core, information-processing system. That is, there should be identifiable mental processes that handle information related to each intelligence.

Using the above criteria, Dr. Gardner created the following categories that appear in his Multiple Intelligences theory:

**Linguistic Intelligence:** This strength encompasses the use of phonological, semantic, and syntactic properties whether it be reading or writing. Persons with a linguistic intelligence have keen senses of the meaning order, and sound of words. Journalists, poets, and speechwriters are among this group. Students who exhibit this intelligence pick up foreign languages quickly and usually enjoy telling or writing stories.

**Musical Intelligence:** This category involves strength in the areas of melodies or pitch, rhythms, tones, and harmonies. The person who has a strong musical intelligence may possess the talents of a composer or vocalist as well as have an affinity for rhythmic organization. Students in this category usually sing well, have a strong ear for tones, and enjoy creating rhythms.

**Logical-Mathematical Intelligence:** Regarding this intelligence, strengths will appear in the areas of ordering and reordering objects, assessing the quantities of items, and conducting order calculations such as adding, subtracting, and multiplying. Strengths of person's with this intelligence also lie within rote recitation of number series and categorizing items such as scientists and mathematicians. These students typically find patterns within numbers and shapes, can complete calculations in their heads, and can usually make strong logical arguments.

**Spatial Intelligence:** Displayed within this intelligence is the capacity to perceive space accurately via touch or sight as well as to correctly manipulate items. This intelligence assists in orientation either within a building or room or within an area of a city or neighborhood. This intelligence lends itself to working at ease with graphs, maps, charts



and two and three-dimensional modules as in professions such as mechanics and engineers. Students who fall within this category are talented artists and typically like to create charts, maps, or drawings to display their knowledge.

**Bodily-Kinesthetic Intelligence:** This intelligence is analogous to pantomime. Persons who display this intelligence have the propensity to work with one's hands and to move about a lot to solve problems such as is the case with surgeons, athletes, and sculptors. Students strong in this area like to be on the field or on the stage and have good coordination.

**Interpersonal Intelligence:** Persons showing strength in this intelligence demonstrate awareness to others and the feelings of others. These people tend to work well in collaborative situations and display sensitivity and thoughtfulness when they interact with groups. Politicians, psychologists, and teachers typically display this intelligence.

**Intrapersonal Intelligence:** When this intelligence is displayed it indicates a good awareness of their feelings and of how external factors affect their lives. A person strong in this area typically makes good decisions about their lives, their friends, and helps others with these decisions. Religious leaders and counselors display strengths in this area. Students who are strong in this area are typically aware of their psyches and how situations affect them emotionally.

### **Latest Addition**

In 1999, Dr. Gardner released *Intelligence Reframed*. In this book, Gardner reviews the theory of multiple intelligences and how it is being applied in schools today. He also discusses myths surrounding the theory and offers evidence for additional categories of intelligences. Further, according to Dr. Gardner, there have been many

proposals for additional intelligences, but he (until this time) “resisted any temptation to alter the theory” (Gardner 18). Yet, as told in *Intelligence Reframed*, Gardner offers a story wherein an historian asserts (to Gardner), “you’ll never explain Charles Darwin with the set of intelligences that you proposed,” and that spurred Gardner to strongly consider other intelligences. It is within *Intelligence Reframed* that Gardner officially releases his decision to add another category to his list of multiple intelligences – naturalistic intelligence.

**Naturalistic Intelligence:** Persons who demonstrate strength in this category easily recognize and categorize items around them. For example, animals or items found in nature such as plants, trees, insects, and other items (not necessarily found in nature) which have the capability of being categorized such as stamps or cars.

### **MI Interpretations & Implementations**

From the onset, to Gardner’s surprise, his theory was not embraced by psychologists but rather by the education community. Gardner contends he did not have a strong opinion about how MI should be applied, if at all, within the educational setting. As Gardner puts it, “No scientific theory can be translated directly into educational applications because education is suffused with values” (Gardner FAQ). Yet, when schools in Australia began implementing multiple intelligences, Gardner took notice. According to Gardner, the entire state was intent on adopting a new school-wide curriculum based on multiple intelligences. In *Intelligences Reframed*, Gardner explains that the schools’ misinterpretation which involved “blatant racial and ethnic stereotyping... went directly against my scientific knowledge and offended my personal

ethic” (Gardner 80). The more Dr. Gardner learned of the intentions and of the glaring and seemingly radical misinterpretations, he became involved.

Other critics of Australia’s newly implemented (and misinterpreted) MI theory curriculum joined Dr. Gardner on television to denounce the Australian program; the new state curriculum, based on the misinterpretations, was very shortly thereafter dropped. Since that time, many educators and administrators throughout the world have either implemented multiple intelligences within their schools or written and published thousands of texts regarding the use of multiple intelligences in academia. Dr. Gardner lists more than two hundred titles regarding MI in his appendices within *Intelligence Reframed*. A small sampling of those titles are: *Multiple intelligences centers and projects*, *The heart of success: Personal intelligences*, *Brain works, a multiple intelligences teaching model for primary grades*, *Multiple Intelligences in the world*, *Problem-based learning and other models for the multiple intelligences classroom*, *Tales of Thinking: Multiple intelligences in the classroom*, *Integrating curricula with multiple intelligences*, and *Becoming a multiple intelligences school*.

As per Gardner’s story about the Australian schools, many – certainly with good intentions – have misinterpreted his theory and therefore unwittingly misapplied the theory; more on the misinterpretations of Gardner’s theory later, but on the contrary, one author, educator, school administrator, and multiple intelligences supporter that Gardner references frequently is Head of New City School in St. Louis, Dr. Thomas Hoerr. New City began using the theory of multiple intelligences as a teaching tool in 1988. Correspondence from New City indicates, “This unique academic learning approach capitalizes on students’ strengths and creates a deep level of understanding that allows

children to use what they've learned in new and different situations" (Hoerr). According to Dr. Hoerr, New City has been successfully using MI as a teaching and learning tool for many years, and the school data indicates graduating New City students have scored in the top 10% as compared to all graduates in public and private schools across the nation. As Gardner mentions New City School in *Frames of Mind*, he relays his long-standing relationship with the school and describes it as an "impressive middle school that has pioneered many MI applications and also featured the first MI library" (Gardner xvii).

Another educational institution with which Dr. Gardner has a long-standing and supportive professional relationship is the Key School (now known as the Key Learning Community); this school is the brainchild of eight public school teachers motivated by a systematic frustration – standardized testing – and funded through a federal grant. Since the genesis of the Key Learning Community in 1987, there have been many iterations of the school: Beginning as a K-6 school, grades seven and eight were added in a separate building then later combined. By 1999, grades nine through twelve were added, and the first graduating class was in June 2003. Throughout these changes, The Key Learning Community remained committed to Gardner's theory of multiple intelligences as being the foundation of the school.

In 2008, the district threatened the school's existence. Even though the Key Learning Community is a seemingly independent school, it is a public school and still must operate under public school guidelines. According to the former principal, Christine Kunkel, the school has been in danger of closing because students are not performing as well on the language and mathematics standardized test, as the state requires. Nonetheless, Key Learning Community presses on under the leadership of Sheila

Seedhouse, and it is still in existence today. This school offers its students varying opportunities for success:

The mission of the Key Learning Community is to research and develop innovative practices in teaching to celebrate diversity in our population and our communities and to personalize education by building upon each student's strengths in the following intellectual areas: Linguistic, Musical, Logical-Mathematical, Spatial, Bodily-Kinesthetic, Naturalistic, Interpersonal and Intrapersonal (KLC).

Success and longevity of both New City School in St. Louis and The Key Learning Community in Indianapolis is, in part, due to their commitment to the use of Gardner's theory and also to the idea that "the design is never complete," meaning they thrive also because of the openness of administrators, staff, parents, and students to new ideas, continuing research, and change. Dr. Gardner offers nods of affirmation to these two institutions for their work in applying the theory of multiple intelligences within their academic settings as teaching tools and ways for students to express and demonstrate their multiple intelligences.

As stated previously, many misinterpretations and misapplications of the theory of multiple intelligences have emerged. For example, some authors, administrators, and educators attempting to implement MI equates students' multiple intelligences to learning styles. Gardner notes in, *Leading Minds: anatomy of leadership*, a person's cognitive style is not connected specifically to a person's style of learning (12). Further, in

*Intelligences Reframed*, Gardner notes another concerning MI theory misinterpretation, which is “the frequent confounding of a human intelligence with a societal domain;” in other words, equating musical intelligence with the idea that a person would, could, or should have the ability to master a certain genre of music or a certain musical instrument (Gardner vx). These concerns – described as ethical issues by Gardner - led Gardner and colleagues to commence research regarding professional responsibility, which became known as the GoodWork Project.<sup>1</sup> Not only did Gardner and his colleagues begin these professional and ethical studies, but also during the same time-period, Harvard Project Zero<sup>2</sup> began more closely working with schools that had the desire to implement multiple intelligences strategies within the curricula. These efforts began in an attempt to ensure the most organic and responsible application of MI possible. Gardner and colleagues also launched The Summer Institute<sup>3</sup> wherein scholars and practitioners from around the world can participate in gaining more knowledge and practical experience regarding the implementation and use of multiple intelligences within their academic arenas.

Following decades of research, documentation, and collaboration with his colleagues and other educators around the world, Dr. Howard Gardner, as evidenced above, no longer avoids involvement regarding any educational system’s embracement of and desire to employ his theory. Instead, he remains involved with many scholars around the world as well as the scholars within his own university system, such as Harvard

<sup>1</sup> Organization founded by Gardner that identifies the exemplary works of institutions and individuals.

<sup>2</sup> Harvard educational research project founded by Gardner.

<sup>3</sup> A summer educational program for students founded by Gardner.

Project Zero and Project SUMIT<sup>4</sup>. To any school system with the desire to implement the theory of multiple intelligences, Gardner would likely relay the following:

An educator convinced of the relevance of MI theory should individualize and pluralize. By individualizing, I mean that the educator should know as much as possible about the intelligences profile of each student for whom he has responsibility; and, to the extent possible, the educator should teach and assess in ways that bring out that child's capacities. By pluralizing, I mean that the educator should decide on which topics, concepts, or ideas are of great importance, and then should present them in a variety of ways...When one has a thorough understanding of a topic, one can typically think of it in several ways, thereby making use of one's multiple intelligences...multiple intelligences should not - in and of itself - be an educational goal.

If one's educational goals encompass disciplinary understanding, then it is possible to mobilize our several intelligences to help achieve that lofty goal – for example, by employing multiple modes of presentation to diverse forms of assessment (Gardner xvi).

Through much hard work and collaboration with Dr. Gardner, attaining this “lofty

<sup>4</sup> An extensive study Gardner directed based on 41 schools that implemented MI.

goal” appears to be what previously referenced New City School and Key Learning Community have both accomplished. “Multiple Intelligences theory is the tool through which students learn and engage with the curriculum and by which the material comes alive for each student” (New City School). Head of School, Dr. Hoerr, explains the use of MI as, not an assessment of students’ academic strengths or weaknesses, but as a teaching and learning tool. Gardner has openly critiqued other educational systems that rely solely on assessments based mainly in the verbal, linguistic, and mathematics areas and agrees that any theory that wholly assesses an individual based on his or her abilities, skills, and talents is a more accurate approach. Moreover, according to Gardner, his theory – as applied in education – is best used as a teaching tool rather than an assessment tool. Gardner encourages teachers to relay academic content in different ways so students may have multiple opportunities to access and encode the information. Again, New City School and The Key Learning Community are doing just that through the adoption and implementation of multiple intelligences theory as a teaching tool; this is their way of successfully differentiating – reaching a wide range of learners and fostering greater chances of student success.

To further the discussion regarding engaging a wide range of students in the classroom, imagine a typical school room consisting of about 25 students wherein anywhere from 5 to 9 of those students may have some sort of struggle with learning - whether diagnosed or undiagnosed. How are educators to thoroughly assist and teach students that struggle with learning differences and intellectual disabilities? It is imperative that educators find innovative ways to impart knowledge and allow students more opportunities to learn in different ways so they may successfully complete course



work. Multiple Intelligences may, in fact, be the answer to catering to all learners, especially those who have been diagnosed with a learning disability and therefore struggle with learning in traditional ways.

## **Learning Disabilities**

Many students are diagnosed each year with one or more learning disabilities. As administrators and teachers struggle to accommodate these students, there are specific federal guidelines placed on public schools regarding the definition of a learning disability. The Federal definition and criteria is as follows:

Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia (US Department of Education).

According to the National Center for Education Statistics, the percentage of students in public schools with a learning disability, such as Dyslexia, Dysgraphia, Processing Disorders, or ADD/ADHD is 4.9. The percentage of these students served has decreased from 5.7, but perhaps because the percentage of Autism diagnoses – classified

as an intellectual disability - has increased from 0.4% - 0.8%. Overall, according to the *Health Reference Series: Learning Disabilities Sourcebook*, about half of students qualifying for special education are classified as having a learning disability (101).

Auditory Processing Disorder is also classified as central auditory processing disorder (CAPD) and affects approximately 5% of students (Judd 83). The obstacle students with CAPD face is the fact that their brains and ears are not working together properly, and, for this reason, these students cannot process differences in the sounds of words. It necessarily follows that these students typically have a difficult time in the classroom setting when there is a lot of background noise and talking. In contrast to students with CAPD, students with Dyslexia have a disability primarily with handwriting, spelling, and pronouncing words. Dyslexic students are typically known to have difficulties with learning to read – or decoding words – because there is a deficit in the ability to identify printed words and to recognize sounds. Another closely related learning disability is Dyscalculia. Students that struggle with Dyscalculia have weaknesses that are connected to Dyslexia and CAPD, as there are deficits in both processing what the eyes see as well as what the ears hear, and a diagnosis of Dyscalculia creates obstacles in discerning patterns and shapes as well as in processing vocabulary (Judd 89).

Yet another learning disability pervasive in our culture is ADHD (formerly known as ADD). ADHD was renamed in 1994, and there are three subcategories to this disability: inattentive type, hyperactive-impulsive type, and combined type. The categorical names align with the symptoms. For example, a student with ADHD Inattentive Type will display problems with organization, following instructions, and paying attention among other things. A student diagnosed with ADHD Hyperactive-

Impulsive Type will typically blurt out and interrupt, often have trouble staying seated and being quiet, and are – as the name suggests – very impulsive. ADHD Combined Type is again, just that, combined: this student will display traits from both categories (Judd 171).

Finally, sometimes classified as an intellectual disability, Autism Spectrum Disorder (ASD) is considered a learning disability and, according to federal guidelines, falls under the category for accommodation in educational settings. Persons diagnosed as being on the Autism Spectrum suffer from a neurological disorder, which affects communication (comprehension and use) as well as the ability to appropriately relate to others. These students also display agitation when dealing with change or sensory overloads such as loud noises or bright lights. Persons on the Autism Spectrum have difficulty grasping abstract ideas; sometimes conduct repetitive hand movements, aka “stemming” – especially when stressed – and usually show signs of an obsession<sup>5</sup> with a particular theme or object. Autism Spectrum Disorder includes some of the following specific disorders: Autism, Pervasive Developmental Disorder Not Otherwise Specified (PDDNOS), and Asperger Syndrome. ASD affects approximately 1 in every 110 children (Judd 265).

These numbers may not seem staggering as presented herein, but there is plenty about which to have concern. Within some educational systems – sometimes due to lack of resources – students struggling with learning differences have little assistance and/or modifications. Also, some educators are still of the mind-set that offering material in

<sup>5</sup> Usually identified as a “perseveration.”

lecture format or giving students a list of vocabulary words to study and memorize is sufficient and classifies as adequately educating, yet each human is different and distinct whether it be cognitively or experientially, and varying levels of abilities will arise based on these differences.

According to data presented by the US Department of Education, the number of students identified as learning disabled was nearing three million in the years 1999 to 2000. Research suggests that when these learning disabled students are placed within a general education classroom they are not fairing well. For example, US Department of Education statistics indicate a disparity in a nearly 50-point difference on reading scores when comparing students with and without learning disabilities. The score differences also seem to correlate with drop-out and graduation rates<sup>6</sup>: nearly 30% of students identified with an LD are dropping out of high school, and these statistics have a direct correlation to future employment figures. In other words, there is an obvious relationship between educational opportunities for students with learning disabilities and future employment opportunities. Educational assistance to students with learning disabilities is imperative, as research suggests that academic performance and confidence directly affects other achievements and subsequent employment success.

### **Criticism**

Many critics have highlighted what they see as problems with Gardner's multiple intelligences theory. For example, Dr. Nathan Brody, Professor Emeritus of Psychology at Wesleyan College, asserts that Dr. Gardner's "list of intelligences is arbitrary, and

<sup>6</sup> US Department of Education 2001

that his attempt to restructure the theory of intelligence to omit a general factor is no more successful than the attempts of psychometric theorists to dispense with g" (36). Further, in "Multiplying the Problems of Intelligence by Eight: a Critique of Gardner's theory," Perry Klein asserts that Gardner's theory is too broad for curriculum planning and, "as a theory, presents a static view of student competence," claiming that researching knowledge construction would be a more useful classroom practice (377). Another in disagreement with the legitimacy of Gardner's theory is Harry Morgan, who presented an opinion paper at an annual meeting of the Eastern Educators' Research Association titled, "An analysis of Gardner's theory of multiple intelligence," in which he argued that Gardner simply identifies categories already in existence and re-labels them as intelligences (1). Also, some assert that Gardner's theory merely suggests that this theory is an excuse for educators to lower expectations of students. The previous seems to be a common critique of Gardner's theory. Glenn Schulyer, while offering no obvious rejections of the theory, simply asserts that Gardner's theory is suspiciously related to other cognitive or neurological theories, such as Meyers-Brigg's Type Indicator Test. Ken Richardson also relays his opinion of Gardner's theory in *Understanding Intelligence*. Richardson tells his readers the theory is "more a pragmatic framework for accentuating the individual strengths that children currently have, and as a rationale for providing programs of activity with the different intellectual domains" (145). Sandra Scarr seems to agree with Richardson's assessment of Gardner's theory; in "An author's frame of mind [Review of *Frames of Mind: The theory of multiple intelligences*]" she critiques the theory for erroneously connecting abilities and talents with intelligences. And, finally, perhaps one of the most well known (and most frequently responded to by

other scholars) critics of Gardner's theory is Lynn Waterhouse who has asserted many times that Gardner's theory "has no validating data" (247).

Despite these many criticisms, Gardner's theory has taken hold of many educators' hearts, minds, and classrooms. The theory of Multiple Intelligences has been valued over the traditional educational model within many levels of education especially within the pre-kindergarten and elementary levels. Shown below, the traditional model of teaching is, as stated previously, based on static notions; the traditional notion of intelligence and assessments seem to exist only within the confines of verbal/linguistics and mathematics. Also, within the traditional model, educators offer only one way for students to obtain new information – this is typically via lecture, silent or individual studying, and/or rote activities. On the contrary, Multiple Intelligences offers students and teachers multiplicity. The very idea that many intelligences exist is an excellent notion on which to base a teaching strategy. If Gardner's theory is true, then it would necessarily follow that all students would benefit from having varying opportunities to gain knowledge. For example, the student who learns by doing, i.e., hands-on activities will benefit from activities geared toward modular and tactile projects. Perhaps this would be creating a poster collage or a 3-dimensional project to demonstrate his knowledge of chemical bonds. This student, under the theory of Multiple Intelligences would be placed in the category of "bodily-kinesthetic." By implementing Multiple Intelligences, teachers have the freedom to offer their students more ways of gaining knowledge and students have more opportunities to demonstrate knowledge, and these opportunities are more comprehensive than the traditional model based on verbal, linguistic, and mathematical intelligences. See below:

## Traditional Teaching Ideas VS The Theory of Multiple Intelligences

TRADITIONAL	MULTIPLE INTELLIGENCES
Intelligence or “IQ” does not change	We have many intelligences and can improve them over time.
The foundation of intelligence exists only within the bounds of verbal, linguistic, and mathematical areas.	There are several intelligences and ways of interacting with and navigating the world around us.
Standardized tests can offer an accurate measure of intelligence.	Problem solving skills, interaction, introspection, and process are highly valued in multiple intelligences.
Educators impart knowledge on a particular topic or subject.	Educators develop activities geared toward students’ uniqueness and allow students different ways to demonstrate their understanding of a topic.

### Theoretical Perspective

Two philosophical foundations play an integral role in my research – how it has been gathered, analyzed, and presented: I take a functionalist perspective, and I mainly view this research through a pedagogical equity lens. Within the functionalist’s view, the belief is that there are two functions of education: primary (or manifest) and secondary (or latent). Typically, the primary functions in education, from a functionalist view can be described as the overall school and specific classroom objectives that relate to socialization, in other words, working positively in the classroom is a socialization function – whether working alone or in collaboration, and another primary learning outcome from school socialization is the understanding of authority positions and how to properly deal with that dynamic. The latent functions in education can be described as learning how to create and foster relationships, learning how to work well in diverse groups (different from mere collaboration), and learning how to positively and open-mindedly understand and discuss culture and politics. It is difficult to discuss the two

(primary and secondary) functions exclusively, because, in my opinion, they intersect and intertwine throughout most educational settings and learning scenarios.

These primary socialization functions go much deeper than simply working together and understanding diversity and authority. This is, in part, why it is a difficult task to discuss the manifest and latent functions separately. For example, one might describe learning to work together in a classroom (a primary function) as also learning to forge relationships with peers and with authority figures (a manifest function). Learning to build relationships is a part of socialization in education – again, both manifest and latent functions woven together. Also, learning to respect and communicate effectively with classmates, teachers, administrators, allies, and adversaries alike is part of the socialization process in an educational setting. I believe, wholeheartedly, in the functionalist view within education, but I feel the primary functions and the secondary functions cannot be mutually exclusive – but that is an entirely different research project. Having said that, I will relay my functionalist perspective but, for purposes of the further discussion, I will not separate manifest functions from latent functions, as I believe each is a function of the other.

From a functionalist perspective, I view the educational system as one of the most – if not the most – integral socialization systems for young people in our society. I firmly believe that a large part of the positive benefits of a formal education for students is this system of socialization and learning ‘how to behave’ and to collaborate with people in and out of the classroom as well as learning to deal with hierarchical relationships. Other important aspects are: learning to navigate the complex waters of human relationships – relationships with classmates as well as relationships with teachers and other leaders in



the school community; learning the core values of both the school entity and the classroom, and learning to respect the culture and backgrounds of a diverse array of people and their respective beliefs.

As far as relationships go, aside from families, the classroom is the main place whereby students learn how to navigate these complex and confusing social waters. Learning to trust classmates, teachers, and other authority figures encountered in school is a very important part of academic success for a lot of students. In fact, trust can be the sole indicator of success or failure for some students. As Ben Johnson, a high school principal in Texas puts it, “unless they [students] trust us [teachers], they are unapproachable.” Teachers must learn to connect with students and students’ backgrounds and interests in order to maximize classroom time. This describes the functionalist view very well; in schools, students learn to (and are usually taught to) socialize, trust, and build relationships, and one of the main foundations of a healthy and successful relationship is trust. Some who may not believe in the importance and presence of socialization in schools may be looking through the lens of a conflict theorist. Through this lens, one sees the world of education as a setting that merely perpetuates and reinforces social inequalities rather than a setting that assists students in adapting and understanding different social levels and cultural backgrounds. Moreover, the functionalist view on the importance of socialization involves learning to collaborate. Functionalists believe collaborating is an important part of the learning and growth process to which students are exposed in schools.

For students with learning deficits, socialization is paramount. A large percentage of students who struggle with learning disabilities, especially those on the Autism

Spectrum, struggle with social issues. In fact, most of the Spectrum students at the school where this research takes place are in school primarily for social reasons (according to their parents). These students need more assistance in learning to socialize, read facial cues from teachers and classmates, and properly cope with what some would consider typical school-aged behaviors and reactions – be those positive or negative. While taking a functionalist perspective, teachers can take advantage of the important role of socialization within school and also take advantage of social teaching moments with all students especially those students who need extra coaching in the social arena with conflict resolution and effective communication.

As stated previously, learning to understand hierarchical dynamics is another very important factor and function in socialization in schools. Students must learn to understand these roles do exist not only in schools but also outside of school walls and being socialized and educated as to how to best deal with these dynamics is important. From a functionalist perspective, I believe these hierarchical dynamics must exist but can exist in harmony and in positivity. In other words, teachers and students alike can learn (and be taught) to respect one another, communicate with courtesy, and be polite at all times, even in times of stress, disagreement, or upset. When students are exposed to these socialization techniques and have the opportunity to learn these important skills, these positive behaviors will most likely carry-over into the adult world whether it is in the social world or the career world.

Further, in schools, students are typically (and hopefully) exposed to an array of classmates who have an equal array of diverse backgrounds – culturally, ethnically, and politically. With the functionalist mind-set, teachers are able to appreciate the benefits of

learning about different cultures and backgrounds and can offer students other varied and meaningful perspectives on life, traditions, family dynamics, and politics. From a functionalist's viewpoint, understanding and accepting cultural diversity is as important as building strong relationships and learning to collaborate. For example, if there is a willingness to collaborate but only with certain groups of people based upon certain strict and discriminatory ideals, then the function of collaboration has been unfortunately irreparably damaged.

Dovetailing with the notion of understanding and respecting diversity, from a functionalist perspective, values are also important. This certainly does not mean a teacher should or would inject his or her personal values onto his or her students, but, just as understanding and respecting diversity is important, understanding the meaning of values – whether your values match your classmate's or not – is also an extremely advantageous socialization model for students. Again, just as classmates will come from different backgrounds ethnically, classmates will also, without a doubt, come from different backgrounds, perhaps religiously (this is based on the supposition that a set of core values are derived from a set of religious beliefs). Socialization in the classroom is important because these socialization techniques assist students in learning about and understanding other backgrounds and cultures; it assists also in learning to build relationships with peers and authority figures; it assists in reconciling diverse values and political views. When a functionalist view is taken within the classroom, students are at an extreme advantage – socially and academically speaking – because students are most certainly being exposed to more than simply reading, writing, and arithmetic; they are being exposed to shared norms and values not only in an educational sense but also in a

societal sense. An educational setting facilitated by a functionalist can foster the ideas of accepting diversity, collaborating effectively, appreciating core values, and understanding the importance of community and social responsibility.

In relation to the functionalist view that I take within my research and my functionalist beliefs, the lens through which I view this research experience is the pedagogical equity lens, which is similar to an advocacy perspective but specific to educational settings and those settings' systems and processes. As an educator, I am loath to the idea of teachers not providing students with equal opportunity to gain knowledge. Creating this equal opportunity environment involves designing a comfortable classroom setting where diverse culture is welcomed and opposing social and political views are embraced, debated, and understood, and activities are geared toward the interests and abilities of students.

This challenge to create an equitable classroom is more simply stated than done. An equity pedagogy exists, according to J. A. Banks, when teachers successfully modify their teaching in particular ways that help facilitate academic achievement of students from different racial, socio-economic, and cultural groups (Banks 152). Unfortunately, some teachers fall into the trap of differentiating so much so that, at times, the curriculum is 'watered down' and those students who seem to be at intellectual disadvantages are given easier tasks, such as worksheets, rote memory tasks, and are allowed to work at slower paces. Research has shown that students with intellectual deficits have smaller pools of knowledge from which to pull for content inquiry and examination, are more 'black and white' or concrete thinkers, do not easily grasp the idea of analogies and metaphors, and typically do not monitor their own learning patterns and goals. This,

could be why teachers sometimes fall into the ‘watering down’ trap; they feel they are doing these students a service. On the other hand, skilled learners or learners who have no learning or intellectual deficits are able to easily engage in abstract thinking, can think of content in and out of context, can easily understand details and analogies, make inferences, and are able to monitor their learning process and goals, and therefore teachers may offer more challenging tasks to these learners and, in turn, unwittingly neglect the less skilled learners.

In most schools, teachers and administrators alike are overburdened not to mention underpaid and neither have the time nor the energy to create change. But, creating an equitable pedagogy is extremely important in order to facilitate forward academic and intellectual motion. In *Leading in a Culture of Change*, Professor Emeritus Michael Fullan from the Ontario Institute for Studies in Education discusses the fear surrounding the implementation of certain school changes. He says the fear is grounded in “the social-psychological fear of change and the lack of technical know-how or skills to make the change work” (41). Nonetheless, creating an equitable learning environment for all levels of students is paramount. Teachers must find innovative ways to teach so-called gifted students as well as those students who struggle with and have been diagnosed with learning disabilities and intellectual deficits.

Differentiation is key to the process of creating an equitable classroom and to assisting all students in their academic quests. For example, collaboration is an important and useful tool within the classroom when there are varying degrees of abilities. For example, students with different levels of prior knowledge on any particular topic may be paired or grouped together to facilitate both sharing and learning – all of the students

benefit as they move from dependent learning to independent learning. Teachers may also consider differentiating by way of connecting content, for example literature, to real world personal, social, and political scenarios in an attempt to assist all students in understanding and effectively navigating social and political landscapes.

By using a pedagogical equity lens and a functionalist view, I investigate and interrogate the possible parities of, specifically, the LD classroom. My goals for this investigation are to further support and encourage educators in their quest to provide an equal and diverse educational and socialization environment for all students. The pedagogical equity lens combined with the functionalist perspective offers a very strong foundation for my research, data collection, goals, and final thesis.

## **CHAPTER III**

### **METHODOLOGY, DATA COLLECTION & DATA**

#### **Methodology**

This project implements the use of mixed methods to gather original data by using anonymous parent surveys and anonymous teacher surveys as well as classroom observations and post-observation interviews with teachers. The completed parent and teacher surveys were submitted electronically and anonymously, and the results were aggregated in a spreadsheet to ensure accurate and efficient compilation. In relation to research and ethical procedures, this project needs no funding consideration, and there are no ethical considerations, because all surveys are anonymous, no students will be interviewed, no student work will be used; therefore there will be no personal or identifying information to redact. A university IRB exemption has been obtained and is on record with Texas State University in San Marcos, Texas.

The collected and analyzed data within educational settings is rich with relevant, interesting, and telling information. The surveys completed by teachers and parents were similar (see Appendix A and Appendix B). Teacher surveys were used to gather several data points but specifically regarding the respective teachers' experience with and implementation of the MI theory within their classrooms. Parents were asked further questions in relation to (their perception of) their ability to identify whether (and when) multiple intelligences was being used as a teaching tool by their child's classroom teacher. Questions in both surveys were worded similarly in an effort to glean any connections and/or disparities in parent and teacher perceptions of implementing MI in the LD classroom. The results from these surveys were used to conduct a portion of my

analysis and final conclusions regarding MI and LD students. I also investigated and offer each student's top three multiple intelligences according to the online surveys students take (discussed later) and how these intelligences may or may not correlate with student diagnoses. Further, classroom observations were conducted in order to discern each teacher's classroom enactments of MI based on my prior knowledge and research about MI. I used the classroom observations to discern any correlation, or lack thereof, regarding lessons taught and the students' interactions within the classroom, group projects and individual work, or any other assignments that seem to relate to Gardner's multiple intelligences.

### **Data Collection**

Once I truly dug in, I began to research, first, how teachers were identifying students' multiple intelligences, which caused me to question whether students were understanding and/or appreciating this teaching/learning tool. In order to ensure a fair amount of consistency, teachers were instructed to use one of two online tools to 'survey' students regarding their multiple intelligences. The two surveys are: Literacy Works.org (see Appendix F) and Birmingham Grid for Learning (BGFL) (see Appendix G). Both, in my opinion, are good assessment tools for identifying students' multiple intelligences. Specifically for the Literacy Works dot org survey, students go to the site and self-report by answering 56 questions ranging from how they view their vocabulary to whether they perceive they have a good directional sense to how they perceive others' feelings about them. There are also questions relating to their likes and dislikes of pets, nature, sports, and music. BGFL's assessment is a more appropriate assessment for younger students, as the questions are structured in a more concrete and an easier to understand fashion; it also



offers a colorful chart (see Appendix H) at the end of the assessment so the students and teachers can have a visual understanding of their strongest ‘intelligences.’ As stated previously, I think both of these assessments are fairly thorough and useful for creating fun projects, curriculum, and activities structured toward students’ interests, abilities, and multiple intelligences.

Despite the fact that there are dozens and dozens of surveys that can be located – especially online – claiming to help determine each students’ multiple intelligences, during my research, I verified that Dr. Gardner does not officially endorse any written assessment for determining a person’s multiple intelligences in regards to his theory. He does, however, acknowledge that there are many available, and he seems to encourage educators to use the available surveys and take the subsequent findings – in conjunction with other findings and facts about their students – in order to teach to the whole student. Even so, Dr. Gardner seems to believe that a student’s multiple intelligences can only be accurately assessed and best discerned by watching him interact with his peers, manipulate objects, run and play on a playground, engage in art or other forms imagination play, and/or explore a museum. In fact, his interest in determining a person’s multiple intelligences is what led to Project Zero. It is within a Project Zero seminar (run by Gardner’s researchers and trainees) that educators can learn to “look at teaching analytically, develop new approaches to planning and make informed decisions about instruction...and learn to recognize and develop students’ multiple intellectual strengths; encourage students to think critically and creatively” (Project Zero).

As an aside, there is one written survey to which Dr. Gardner offers high compliments, and the compliments go to Dr. Branton Shearer who is the creator of the

Multiple Intelligences Development Assessment Scales (MIDAS) profile, which seems to be the most thorough written assessment of Gardner's theory of multiple intelligences available to date. The MIDAS is not wholly based on self-reports (like the other assessments) but uses a mixture of self-reporting, intellectual, cognitive, and/or psychological data as well as instructor input. Unfortunately, the MIDAS is only available through special permissions or purchase for use within a school or classroom. Happily, through my research, I have been in communication with Dr. Shearer many times. Dr. Shearer has shown appreciation for my research and has graciously offered reprinting permissions herein. He also agrees that my research will be filling a gap and will offer researchers and educators pertinent information in this field, and, for this reason, he has expressed great interest in conducting future research in this area together. He has generously offered to donate MIDAS profiles for each of our students for future research, data collection, and analysis; this will be an extensive and time consuming project to be completed at some point in the future; I am excited about the possibility of working with Dr. Shearer, and I am honored to have been granted the opportunity to conduct this further research.

For my current research (regarding MI surveys), students completed either the Literacy Works survey or the Surf Aquarium survey online in order to determine their top three multiple intelligences. Once the findings were calculated, printed, and reviewed, I could further observe, assess, and create assignments and projects using the foundational knowledge of their particular interests based on the MI surveys. Of course, the use of their specific intellectual profiles and LD diagnoses are taken into account as well when constructing lesson plans and assignments.

The following 20-minute classroom observations were conducted:

- High school composition class
- High school literature class
- Middle school language arts class

Within the high school composition class I observed, there are 7 students; their diagnoses and top 3 Multiple Intelligences are as follows:

- Student #1: male – dyslexia (kinesthetic, intrapersonal, mathematical)
- Student #2: male – dyslexia (kinesthetic, musical, intrapersonal)
- Student #3: male – dyslexia (musical, interpersonal, kinesthetic)
- Student #4: female – auditory processing disorder (intrapersonal, verbal/linguistic, musical)
- Student #5: female – auditory processing disorder (intrapersonal, naturalistic, musical)
- Student #6: female – Autism Spectrum (intrapersonal, verbal/linguistic, musical)
- Student #7: male – Autism Spectrum (intrapersonal, verbal/linguistic, mathematical)

During my observation within this class, the students seem relatively calm and relaxed. There seems also to be a good rapport with their instructor. On this day (a Tuesday), all seven students are present and reviewing grammar as well as conducting editing and paraphrasing exercises with their teacher. The teacher reads sentences – one by one – to the group, and they are instructed to write the sentences with proper grammar, spelling, and punctuation. Two of the students (5 & 6) seem to struggle with writing each sentence, and the instructor tells these students not to worry – there will be individual

help later. Student 6 seems frustrated and puts her head down. The other five students are mindful of the other students' frustrations, but they continue on with the exercise. After the brief assignment, the instructor writes several grammatically incorrect sentences on the whiteboard, and asks each student to go to the whiteboard and correct one of the sentences using proofreading marks (the instructor conducts a brief review of a few proofreading marks). Each student seems comfortable with this task; in fact, the formerly frustrated students re-engage and take their turns at the whiteboard. Other noted observations: student 7 displayed verbal frustration over having to paraphrase the passage; student 2 asks if "spelling counts."

After the dictation and editing tasks, the instructor passes out a paper with a typed paragraph on it to each of the seven students. The instructor directs the students to read the passage on the paper and to re-write the paragraph, i.e., paraphrase it. The instructor asks for a volunteer to remind "us" of the definition of paraphrasing. Two students (1 and 2) volunteer to answer; student 2 is called upon and offers the following definition of paraphrasing: "writing it in your own words" to which the instructor replies, "yes." The instructor then moves onto the paragraph and reads it aloud. She then encourages the students to read the passage silently "at least two times" in order to grasp everything and then rewrite the passage "in your own words." The instructor also offers the students the option of handwriting their new paragraph or typing it on a computer. Five of the seven students choose to type the assignment<sup>7</sup> and either relocate to a desktop computer or ask

<sup>7</sup> At this school, the use of a private GOOGLE community is prevalent. Students have their own school Gmail account that allows for the use of GOOGLE documents, presentations, and spreadsheets.

for a laptop; two of the students (1 & 2) choose to handwrite the new paragraph and remain at their desks. All students, except student 5 and student 6 – who previously displayed frustration by the dictation assignment – seem okay with this assignment (student 5 asks for help from the instructor). After telling student 5 she will help her in a few minutes, the instructor works with student 6 individually. The instructor asks the student what is upsetting her, and the student says, “I just can’t do this; I just have a hard time doing this; can I just work on my story?” The teacher then asks this student if she prefers to work in a room across the hall, and the student does choose this option and leaves the room with her personal laptop. Student 5 asks for another explanation of the directions, and the instructor explains to her again that she needs to read the passage and then rewrite it in her own words. Further, the instructor tells her to read 2 or 3 sentences of the passage and then paraphrase those. Then read another 2 or 3 sentences and paraphrase those to which the student replies, “okay.”

During my post-observation interview with each instructor, I specifically want to learn more about teaching styles and their perception of their enactments of multiple intelligences in each classroom. Since I also teach at this school, each instructor and I are able to discuss students in great detail from specific personalities to classroom behaviors to group dynamics to diagnoses. I ask each teacher about his or her tenure at this school and if they feel multiple intelligences is a good foundation for structuring differentiation in the classroom. This particular teacher informs me that she has been working at this school for 14 years; she feels that each student needs something a little different – intellectually, academically, and socially and understanding that each student has different strengths and weaknesses helps her assess their needs in the classroom. She tells

me that Multiple Intelligences lends itself to helping with the “students have different strengths and weaknesses” mindset because MI offers categories to think about when planning classroom activities. For example, she tells me, some students work better in groups (interpersonal intelligences); some students prefer to work alone (intrapersonal intelligences) and so on. The teacher goes on to tell me that she takes their ‘multiple intelligences’ into consideration when planning activities. She says, “If I am not teaching to their strengths, then they are probably not working to their potential.” For example, if one student prefers to work alone, this instructor will not place them in a group and expect them to work to their fullest potential or as productively as possible.

My next observation is within a high school literature class. This class consists of 8 males. Diagnoses and top 3 Multiple Intelligences are as follows:

- Student #1: ADHD (bodily-kinesthetic, logical-mathematical, musical)
- Student #2: Dyslexia, Dysgraphia (interpersonal, logical/mathematical, musical)
- Student #3: Dyslexia (musical, logical-mathematical, interpersonal)
- Student #4: Autism Spectrum (interpersonal, verbal-linguistic, musical)
- Student #5: ADHD, Dyslexia, Dysgraphia (bodily-kinesthetic, naturalist, logical-mathematical)
- Student #6: ADHD (musical, bodily-kinesthetic, intrapersonal)
- Student #7: ADHD (bodily-kinesthetic, logical-mathematical, interpersonal)
- Student #8: APD (interpersonal, musical, naturalist)

During this observation, the instructor begins with a discussion on literary time periods. There is a short verbal review with all of the students participating as they choose; i.e., it seems that none of the students raise their hands to participate; they answer

out loud immediately after a question is asked. The instructor does ask for the students to raise their hands, but this request seems unheeded by most. These students have recently been studying literary time periods and have been working on written biographies of a certain author. The final biographies – per the instructor – may be typed as documents or finished as a slide presentations; the choice is up to the individual student. After a short verbal review and slide-show review of the literary time periods – including images of each author and examples of their famous works – and after each student reminds the teacher which author they have chosen for their biography, several students ask for permission to use a laptop (there are five desktops and three laptops for use in this classroom). Once three students have laptops, each of the other students relocates to a desktop to begin working on their biographies. During my observation of these students, I notice them visiting a number of other sites (other than their school Gmail) such as YouTube, Reddit, and Microsoft to name a few. The students are also permitted to use other electronic devices (phones or iPods) in order to listen to music while they work. Each student seems to be working but also seems a bit distracted by the possibility of leaving their assignment and visiting another website. The teacher politely redirects students as needed and encourages them to keep working. After about 15 minutes, student 8 asks for a break; immediately after that, every student except student 3, also asks for a break. According to the teacher, each student is allowed a 5-minute break during class. Generally, these students seem very energetic and distractible; they are also very talkative. Other notes: students leaning back in their chairs often; eating; asking for breaks; being off-task; teasing each other; asking to leave the room for water or bathroom breaks.

Student 5 seems particularly energetic, disruptive, and distractible. The instructor attempts to redirect this student many times, but he continues to ‘play’ with the font on his document – changing the color and size – and he also seems to be very distracted by his phone; he moves back and forth from looking at his laptop to looking at his phone, and when the teacher asks what he is doing, he tells her he is “finding a good song to listen to.” The teacher is calm and patient and seems to have a good rapport with this energetic group.

During my post-observation interview with this instructor, she informs me that she has worked at this school for 2 years. She has no prior experience with multiple intelligences and feels that multiple intelligences theory is a good differentiation technique for this population of learners because, as she says, “the categories are clear and make a lot of sense.” In this class, she tells me, there are a lot of students who fall into the “bodily-kinesthetic” category; they are very active and energetic; they like hands-on and group activities; she says MI theory helps her remain open minded and flexible as to students’ MI strengths as well as other strengths, abilities, and needs. This instructor tells me the way she implements MI shows in the fact that she offers information (verbally and visually), allows students to move around often and to listen to music, take breaks, and for assessment, she offers different ways to demonstrate knowledge. A few assignments, activities, and options that this teachers offers her students, that she relates to MI are: modular projects such as building models, creating posters, producing drawings, creating slide-show presentations all instead of traditional assignments as well as offering verbal assessments in order to demonstrate mastery.



The final observation I will share is from an observation in a middle-school writing class. This class consists of 2 females and 3 males. Diagnoses and top 3 Multiple Intelligences are as follows:

Student #1: female – Dyslexia, Auditory Processing Disorder (interpersonal, musical, naturalist)

Student #2: female – Dyslexia, Auditory Processing Disorder (intrapersonal, interpersonal, musical)

Student #3: male – ADHD, Asperger's Syndrome (logical-mathematical, interpersonal, naturalistic)

Student #4: male – Asperger's Syndrome (verbal-linguistic, intrapersonal, logical-mathematical)

Student #5: male – ADHD, Dyslexia, Dysgraphia (verbal-linguistic, intrapersonal, logical-mathematical)

During my observation in this class, I note the students all seem to get along well with each other and the teacher. The day I visited (a Thursday) these students are working on collaborative writing as well as reading comprehension and editing. First, the teacher asks students what they did in their previous class (science). All students have a chance to answer, are polite, and ask each other various questions. After this brief and unrelated chat, the teacher explains the activities for the class period: working on “group or individual stories,” reading comprehension, and editing practice. She passes out two papers: one with paragraph editing practice on it and one with a short reading passage and related questions. The teacher sits down at a classroom desk and begins the first lesson – reading comprehension. The students are instructed to take turns reading the

passage aloud. Student 4 begins, and I notice he is reading the passage perfectly and using an Irish accent to do so. No one seems to be affected by the dramatic reading he offers. Student 1 takes the next turn; she is very soft spoken and not a fluent reader. She struggles, and the teacher gives her polite prompts and assistance with decoding the words. The students are patient during this time. Student 2 is next and finishes the short passage. She reads well but is also soft spoken. Once the entire passage is read, the teacher walks the students through the comprehension questions one at a time. This is completed as a group; student 1 appears frustrated; several times, she asks the teacher to repeat the answers; she also says, “wait” and “slow down” many times. The teacher is very patient with this student and tells her not to worry saying, “you’ll be able to write all of the answers down, don’t worry.”

After this activity, the students work on editing a paragraph. They are instructed to do this on their own and quietly. Student 1 again seems frustrated and relays to the teacher that she needs help with reading. Student 5 seems off-task and needs prompting from the teacher to get to work and stay on task; he responds to her prompts by saying, “I’m thinking; I’m thinking.” After students are finished with editing, they are to work on the “group or individual stories.” Students have been working on writing creative stories in pairs (except student 4 who prefers to work alone). Students 1 and 2 work together, and students 3 and 5 work together. The students log into their school Gmail accounts and access their stories via GOOGLE docs, and they begin working. The students seem to have written quite a lot, seem to collaborate very well, and seem to enjoy this writing

activity. Student 2 asks to listen to music while working on her story with student 1; the teacher approves. These students finish the class while working quietly on their stories.<sup>8</sup>

During my post-observation interview with this teacher, she tells me that this is her first year back at this school after a few years away. She has taught here in the past, and all of her children have attended this school. This teacher discusses how she uses multiple intelligences in her classroom. Assignments geared toward the students' interests based on their MIs allow students to grow and feel confident in their education. This teacher also offers varying assignments for her students. For example, student 5 is an excellent artist, and he is encouraged to draw in order to brainstorm or to enhance his traditional assignments. He has trouble generating words, which, she tells me, is why he typically responds by saying, "I'm thinking" when it seems he is not working. Also, student 4 is very verbal, according to my observation as well as according to his multiple intelligences survey, and he loves to write; therefore, in this class, he is allowed to write often in order to not only brainstorm and relax but also to demonstrate content mastery. Some other activities that are allowed and encouraged in this classroom are: creating posters to display parts of speech, cutting and pasting sentences on poster board to properly sequence story events, and, as stated earlier, illustrating story events to demonstrate comprehension.

<sup>8</sup> Students work within GOOGLE documents; they have a shared document and are simultaneously logged onto the document. They discuss the plot of the story and each takes a turn creating a new sentence as they build their story.

## **Data**

As stated previously, the school where this research was conducted is relatively small; there are approximately 55 students and 13 teachers. 8 teachers completed the surveys and 3 teachers generously allowed me into their classrooms to conduct observations and post-observation interviews. Of the 13 survey respondents, only 1 had experience with Multiple Intelligences prior to working at this school and that was while in college working on a teaching degree. Also, of the same 13, all indicated they appreciate the theory of MI, use it as a teaching tool within their classrooms, and would recommend the use of MI within other classrooms – specifically public school classroom – in order to assist LD students with their academic and social goals.

Regarding the parent surveys, 23 parents submitted completed surveys, and of those respondents, none had prior experience with MI but, after being offered more information on MI, these parents seem to understand the theory and can recognize the positive benefits the theory is offering their student. 18 of the parent respondents indicated their student was being benefitted by varied projects within the classroom – specifically “hands-on” activities. Nearly all of the parents indicated they felt they could identify the use of Multiple Intelligences in their child’s classroom, and that their child was being benefitted by the use of MI. All of the parent respondents indicated they would recommend the use of MI in public schools.

20 minute observations as well as post-observation interviews with teachers were conducted within three different classrooms: one high-school composition classroom consisting of four males and three females; one high-school literature classroom consisting of eight males; one middle-school language arts classroom consisting of two

females and three males. Within the composition class, three of the males have been diagnosed with dyslexia; two of the females have been diagnosed with an auditory processing disorder, and the remaining students (one male and one female) are both on the Autism Spectrum. Within the literature class, three of the males have diagnoses of ADHD, while another male as ADHD as well as dyslexia and dysgraphia. The other three students' diagnoses, respectively, are: dyslexia, auditory processing disorder, and Autism. The third and final classroom (middle school language arts writing class) observed consisted of two females and three males. Two of the females have both dyslexia and an auditory processing disorder; two of the males of Asperger's Syndrome (one of these males also struggles with ADHD), and the final male student's diagnoses are: ADHD, dyslexia, and dysgraphia.

Of the students diagnosed with dyslexia, they all identify (according to the MI survey used) with the bodily-kinesthetic intelligence and/or the interpersonal intelligence as being one of their top three strength; of the students diagnosed with an APD, all of them identify with either the interpersonal or intrapersonal intelligences being one of their top three strengths. Further, according to the survey used for these students, all of the students on the Autism Spectrum identify with the verbal-linguistic category as being one of their top three strengths.

## CHAPTER IV

### ANALYSIS & CONCLUSION

#### **Analysis**

From much research, several classroom observations, post-observation interviews with instructors, and data from parent and teacher surveys coupled with information gathered regarding students' multiple intelligences and other student evaluations, I have gleaned substantial and rich information regarding the use of differentiation by way of Gardner's theory of multiple intelligences within the LD classroom. These teachers are positively influenced by Gardner's theory, and it drives their differentiation techniques for students with learning differences.

First, regarding students diagnosed with ADHD (combined type or otherwise), my research suggests there is quite a strong correlation between these students and the bodily-kinesthetic intelligence on Gardner's list. Students identified as "bodily-kinesthetic" typically self-identify as enjoying hands-on projects and need to move about often. Incidentally, their parents also identify them as needing such activities. Also, as noted within the parent surveys, parents of students with ADHD made many references to the "hands-on" projects that teachers offered and how these projects help their child not only feel successful in the classroom but actually become successful in the classroom as compared to their previous school experiences.

Diagnosticians and educators often describe students diagnosed with ADHD as being 'very fidgety and 'active' and most obviously as having obvious short attention spans. Therefore, these hands-on activities would necessarily be best suited for them. Students with ADHD, in my opinion, are being well served in this environment through

the use of multiple intelligences in the classroom. Through MI, their strengths, abilities, and interests are being taken into account in the classroom, which, in turn, typically assists in confidence and academic success. As far as “strengths” and “abilities” within students with ADHD, it must be acknowledged and recognized that these students have great difficulty in focusing for long periods of time. It is possible to consider the lack of focus as a deficit. In fact, the “deficit view” is exactly the view that is typically found within traditional educational settings. But, when implementing multiple intelligences, these issues – or weaknesses – are not disregarded but rather accommodated, and the strengths are recognized, celebrated, and taught to.

Further, students diagnosed with ADHD typically fall into the “social” or interpersonal MI category, meaning they enjoy the company of others; they enjoy talking with others and developing new ideas, meeting new people, and they enjoy team sports and competitive activities. This success seems to manifest because when working in a way that more closely matches their multiple intelligences (and their strengths), they seem to be more productive and engaged. For example, when they are working within a group; when they are working with their hands; when they are learning by doing.

In the case of the students within the high school literature class comprised of all males most of whom have been diagnosed with ADHD, these students are hyperactive and seem to need quite a lot of stimuli. The theory of multiple intelligences lends itself to these types of learners, because these learners would most likely not be given the opportunities to engage in these non-traditional modes of learning within a traditional setting. In fact, that is exactly why most of these students are enrolled in this particular school. Using multiple intelligences to guide differentiation helps teachers to mete-out

assignments and other specific needs of students with learning differences. For example, listening to music while working, using different modes to display and relay information and allowing students to use different modes to demonstrate comprehension as well as using non-traditional assessment tools is typically not allowed in traditional classrooms. Perhaps, equally important, through the use of multiple intelligences, students' needs are being honored and recognized. For the student diagnosed with Attention Deficit Hyperactivity Disorder, moving about frequently; taking short breaks after completing a chunk of work; switching from one task to another; and working together and with hands-on projects is integral to academic success, and multiple intelligences is an excellent foundation to use for these students.

Regarding students with Auditory Processing Disorders (APD) and students on the Autism Spectrum, my research shows that both of these categories of students very often self-identify as "intrapersonal" within Gardner's MI categories (online surveys). Interestingly, the Spectrum student typically lacks the social awareness to have a great amount of empathy for others and, conversely, the APD student typically possesses both social awareness and a fair amount of empathy for others. Further, students diagnosed as being on the Autism spectrum and students with Auditory Processing Disorders both struggle with sensory issues and "have trouble effectively processing information that comes into the brain through the senses." These sensory issues often cause "confusion, fear, and anxiety" (2). What is intriguing about this, as stated previously, is that both students fall into Gardner's "intrapersonal" category, i.e., they prefer to work by themselves. For the Spectrum student, this is typically because they find it increasingly frustrating to be around many other students for great lengths of time as it creates a high



anxiety situation (sometimes this anxiety is also in relation to the other students' frustrations). As in the case of student 6 in the high school writing class; she is on the Autism spectrum and falls neatly within the MI category of "intrapersonal" intelligence, i.e., she typically prefers to work alone. Sometimes, even within traditional special education classrooms, these students are not accommodated as well as the students within my research are. This research shows that by differentiating in the LD classroom using Gardner's MI theory, teachers are able to concretely discern the needs and strengths of each LD student as well as any triggers for upset and/or anxiety. For the Spectrum student, being alone is sometimes an easier and more comfortable sensory and social choice, and when teachers can recognize and facilitate that with ease, the student is able to become more academically and socially successful than he or she would likely be in a traditional academic setting.

As with the student struggling with an APD, this "intrapersonal" MI identification is not surprising either, because, as in the case of the Spectrum student, being around a group of his or her peers creates high anxiety. For the APD student, this anxiety is typically not due to a lack of social awareness or lack of intellectual ability but usually due to the frustration and confusion caused by certain noises, high levels of activity, the fact that several people are talking at once, and the difficulties in processing this 'noise' within this type of setting. APD students have trouble "discriminating between similar words and filtering out background noise" (2). The APD student's frustrations could be due to something as seemingly benign as an air-conditioner humming in the background; something that a lot of people would never notice. My research suggests that when using MI as a teaching tool, students on the Autism spectrum and students with Auditory

Processing Disorders are better served than in traditional settings because teaching styles and curricula are being modified based on students' MI categories as well as their interests and abilities. MI categories assist teacher in thinking about each student's interest and abilities but also about their anxiety triggers and frustrations, which, in turn, assists the teachers in developing teaching strategies and classroom settings to ensure comfort and success.

For example, student 1 (an LD student diagnosed with both Dyslexia and Auditory Processing Disorder) in the middle school language arts class displayed quite a lot of frustration and anxiety when the teacher was verbally relaying instructions; this was very likely due to her inability to process the verbal information and sounds in a 'normal' manner. Also, a struggle with Dyslexia typically produces quite a lot of general academic anxiety. Therefore, I acknowledge that at least some of student 1's anxiety could be related to her Dyslexia diagnosis. Nonetheless, because student 1's teacher implements multiple intelligences in her classroom, she is able to understand the specific needs – based on the MI categories as well as the diagnoses – of all students. Subsequently, the teacher accommodates by offering one-on-one verbal instruction (whereby the teacher can repeat as necessary, and the student can ask as many questions as needed), written instructions as needed, e.g., making lists for the students, opportunities for students to work in another quiet space, as well as close assistance with reading and decoding words in order to ensure content comprehension. All of these accommodations are important, as Dixon and Hearne tell us in "Lessons from Individuals with Learning Disabilities," in order to "meet the unique needs of students whose strengths and talents lie outside of the narrow view of knowledge as being purely

linguistic” (11). All of the techniques and classroom accommodations noted herein are successfully driven by multiple intelligences and are rarely found within classrooms using traditional modes of educating such as lecturing and subsequently assigning traditional linguistic assessments to demonstrate learning or mastery.

### **Survey Analysis**

The data from the anonymous parent surveys suggests that before having their particular experiences with [redacted] School, zero percent of parents had heard of or had experience with the theory of Multiple Intelligences. Nearly 100% of parent respondents indicate they can currently identify certain assignments as being related to multiple intelligences and that using the theory is either ‘helpful’ or ‘very helpful’ for their student: the scale from which respondents chose is a scale of (1) one to (5) five, (1 indicating “it does not seem to make a difference” and five indicating “very helpful”). Further, the surveys, nearly uniformly, represent a positive perception regarding the theory and the notion that it, at least, assists in increasing confidence levels in their child: respondents indicate they have experienced ‘an increase in confidence’ levels in their child which they feel they can attribute, at least in part, to the use of multiple intelligences by their child’s teacher. Most respondents indicate they are pleased with the implementation of the theory as a teaching and learning tool for their child, and they would recommend the theory be implemented within public schools in order to assist students with learning disabilities.

Further, the anonymous teacher and parent survey answers appear to have strong connections. Just as with the parents, most of the teacher responses indicate they do not have experience with multiple intelligences previous to being employed at [redacted]

School. Also, the teachers indicate strong correlations between the use of multiple intelligences in their classroom as a teaching and learning tool and the increased confidence levels of their students. My studies show that students are experiencing differentiation in a way much different than they have experienced in the past; parents are recognizing these differences in classroom strategies and techniques, and both teachers and parents are perceiving a connection between the implementation of the MI teaching theory with their students who struggle with learning differences and increased confidence levels.

## **Conclusion**

My conclusions, based on data retrieved and my analysis are as follows:

Since, neither parent nor teacher respondents have had experience in the public school system with the theory of Multiple Intelligences, but they all indicate a positive experience for their students, perhaps this theory should be investigated more thoroughly for use in more public school systems especially for students identified as having a learning disability. The scope of this research, albeit minimal, lends itself to positively identifying MI as an extremely useful teaching tool within a population of students who struggle with learning disabilities – as with the students in this research. It is my hope that more public schools will be open to the idea of becoming “familiar with how the theory of Multiple Intelligences can be used in their classrooms...” (Darling-Hammond).

Nearly all parent respondents indicate they feel they can identify certain assignments as being related to the theory of multiple intelligences. For example, the allowance of students to demonstrate content mastery in ways other than verbal/linguistic exams such as creating poster collages, modular projects, or visual presentations is

clearly connected to the implementation of the theory of multiple intelligences. Also, based upon the same data, there is a very strong correlation between what parent respondents repeatedly describe as “hands-on” activities and their perception of multiple intelligences, i.e., these parents perceive their students as needing these highly mobile and “hands-on” activities – typically because their student has been diagnosed with ADHD. Parents describe these activities as being a positive classroom strategy for their child with ADHD. This implication strongly suggests that students diagnosed with ADHD, as well as other LDs, are being assisted in the classroom through the implementation of Gardner’s MI theory. Further, according to parent and teacher respondent answers, there is a very strong correlation between the MI theory being used in the classroom, the confidence level of the students, and their academic success.

As an educator of students with learning disabilities, I would agree and would also assert a strong correlation between the implementation of MI theory within the LD classroom and the increased confidence level of LD students. Generally, it is because of poor performance within the traditional school setting, i.e., public school setting, that many of these students come to a school like the one where I teach and conducted my research. I would argue that their “poor performance” is in large part due to the lack of flexibility that teachers in traditional settings have to implement theories like multiple intelligences. As my research has shown, these students – and as in previous research, other students around the country – have benefitted from the implementation of Gardner’s MI Theory. Further and related, because of previous poor performance, these students’ confidence levels almost always decrease; they become dejected, unmotivated, and give up on themselves. Multiple Intelligences is a differentiation technique that can

be implemented to not only increase students' confidence levels but to also cater to particular academic and social needs and abilities. According to my research, teachers within this school are implementing the theory of multiple intelligences positively which, in turn, creates an outstandingly positive academic atmosphere for their students. The bottom line: teachers and parents perceive greater academic success when students with learning disabilities are in classrooms wherein Dr. Gardner's theory of Multiple Intelligences is being implemented.

Again, while there are scholars and educators researching and reporting on classroom differentiation and Multiple Intelligences in traditional classrooms, the research is extremely sparse in the area of implementing Multiple Intelligences in the classroom with learning-disabled students. In fact, most information on this topic, at this time, comes from educational bloggers and education administrators who are implementing MI in traditional classrooms; there are very few scholars in academia conducting this kind of qualitative pedagogical research. In fact, one of the few resources on this topic is Thomas Armstrong's *Multiple Intelligences in the Classroom*. Armstrong saw Gardner's MI theory as a way to "move away from the deficit paradigm in special education" (1). Which is exactly what Gardner's theory specifies – moving away from deficit-based thinking and toward asset (or strength) based thinking. Therefore, as more and more students are diagnosed with learning disabilities (aka "students with deficits") and are in need of special educational services and classroom modifications that are not "deficit based," "teachers [will] need to take a good close look at the diversity of learners in their classrooms" (Palmer). My literature reviews, research, data, analyses, and conclusions offer scholars and educators another resource on the topic of offering LD

students an equitable share within the classroom. I am hopeful that this project will also encourage more scholars and educators to pursue their own research regarding the coupling of MI theory with teaching LD students and subsequently more schools will be implementing the theory with their students in order to continue closing this research gap.

## APPENDIX SECTION

### APPENDIX A

#### PARENT SURVEY

Please take a few minutes to read the text below about Multiple Intelligences; then please complete the short survey. Your answers will be confidential, and the data in this survey will be compiled and analyzed for a project regarding the implementation of Multiple Intelligences for students with learning differences.

Multiple Intelligences is a theory presented by renowned Harvard Professor, Dr. Howard Gardner, in 1983. This is a theory whereby Gardner asserts that everyone has certain strengths and weaknesses - or, as he calls them: multiple intelligences. For example, a student who is strong in linguistics may easily write a poem or a creative story but may struggle with high-level spatial tasks. Therefore, this student may be said to be "strong" in linguistic intelligence and "weaker" in spatial intelligence. Gardner's Multiple Intelligences categories are: bodily-kinesthetic, spatial, linguistic, naturalistic, logical-mathematical, musical, inter-personal, intra-personal. The educational community has embraced Gardner's theory for nearly three decades. In fact, as you know, we use multiple intelligences as a teaching and learning tool here with your student.

Please answer the questions below to the best of your ability.

Thank you very much,

Lisa Bovee

- Before your [redacted] School experience, had you heard of (or had any experience with) Multiple Intelligences?
  - Yes or No
- If "yes" to the previous question, please explain how you know of the Multiple Intelligences theory:
- Can you identify any of your student's assignments as being related to multiple intelligences? If so, list and explain, if possible:
  - For example, students are placed (standing) in a circle. One student has a tennis ball. The student tosses the tennis ball to a classmate and says a word. The student, who catches the ball, has to identify the part of speech for that word. This is an example of an activity geared more toward the bodily-kinesthetic intelligence. Writing a song or a poem to describe what



happened in WWII may be an example of an activity that is geared more toward the linguistic intelligence.

- How helpful do you feel using Multiple Intelligences as a teaching tool is for your student?
  - Scale 1 – 5 (1 = it does not seem to make a difference; 5 = very helpful)
- Explain why you feel Multiple Intelligences is helpful to your student.
- Have you had any experience with Multiple Intelligences in the public school system?
  - Yes no
- If you answered yes to previous question, please explain:
- Is the implementation of Multiple Intelligences as a teaching tool something that you would encourage other schools to implement?
  - Yes, no, no opinion
- Some educators believe that by implementing multiple intelligences, students become more confident and are then more successful academically. Do you feel this is true for your student?
  - Yes, no, no opinion
- If you answered yes to the previous question, please explain your answer.
  - In other words, offer an example or two of how multiple intelligences had helped your student:

## APPENDIX B

### TEACHER SURVEY

- Before being employed at [redacted] School, had you heard of (or had any experience with) Multiple Intelligences?
  - Yes No
- If "yes" to the previous question, please explain how you know of the Multiple Intelligences theory:
- Please briefly identify a few Multiple Intelligences assignments from your lesson plans:
- How helpful do you feel using Multiple Intelligences as a teaching tool is for your students?
  - Scale 1 – 5 (1 = it does not seem to make a difference; 5 = very helpful)
- Explain why you feel Multiple Intelligences is helpful in your classroom:
- Have you had experience (as a teacher or a parent) with MI Theory in the public school system?
  - Yes no
- If you answered yes to the previous question, please explain:
- Is the implementation of Multiple Intelligences as a teaching tool something that you would encourage other schools to implement?
  - Yes, no, no opinion
- Some educators believe that by implementing multiple intelligences, students become more confident and are then more successful academically. Do you feel this is true for your students?
  - Yes, no, no opinion
- If you answered yes to the previous question, please explain your answer.  
In other words, offer an example or two of how multiple intelligences helps:

## APPENDIX C

### POST-OBSERVATION INTERVIEW QUESTIONS

- How long have you been teaching?
- How long have you been teaching at [redacted] School?
- What discipline do you teach?
- What grades/age groups do you teach?
- Do you feel you implement MI strategies in your classroom everyday?
- If yes, how so?
- Do you explain MI to your students?
- As you view them, what are your students' perceptions of MI?
- Do you feel students can recognize that MI theory is being implemented?
- Do you discuss MI with your students' parents?
- Do you feel the parents can recognize that MI theory is being implemented?
- What is the feedback from the parents?

## APPENDIX D

### CLASSROOM OBSERVATION STRUCTURE

- 1 High School Composition Class - Teacher A
- 1 Middle School Language Arts class - Teacher B
- 1 High School Literature class – Teacher A
- 20-minute observations per class (no participation by researcher)
- Hand written notes taken and later transcribed by researcher

APPENDIX E

RESEARCH QUESTIONS

- What is Multiple Intelligences (MI), and who is Dr. Howard Gardner?
- What is Multiple Intelligences, and how does it differ from traditional views of intelligence?
- How are students being assessed as to their Multiple Intelligences?
- How has Gardner's theory of Multiple Intelligences been interpreted and implemented over the years?
- Do parents and teachers of LD students perceive those students to be more academically successful when placed in a classroom where Multiple Intelligences is actively used as a teaching tool (as compared to previous experiences)?

## APPENDIX F

### Literacy Works Online MI Survey

This form can help you determine which intelligences are strongest for you. If you're a teacher or tutor, you can also use it to find out which intelligences your learner uses most often.

Instructions: Read each statement carefully. Choose one of the five buttons for each statement indicating how well that statement describes you.

1 = Statement does not describe you at all

2 = Statement describes you very little

3 = Statement describes you somewhat

4 = Statement describes you pretty well

5 = Statement describes you exactly

1. I pride myself on having a large vocabulary.

2. Using numbers and numerical symbols is easy for me.

3. Music is very important to me in daily life.

4. I always know where I am in relation to my home.

5. I consider myself an athlete.

6. I feel like people of all ages like me.

7. I often look for weaknesses in myself that I see in others.

8. The world of plants and animals is important to me.

9. I enjoy learning new words and do so easily.

10. I often develop equations to describe relationships and/or to explain my  
observations.

11. I have wide and varied musical interests including both classical and  
contemporary.

12. I do not get lost easily and can orient myself with either maps or  
landmarks.

13. I feel really good about being physically fit.

14. I like to be with all different types of people.

15. I often think about the influence I have on others.

16. I enjoy my pets.

17. I love to read and do so daily.

18. I often see mathematical ratios in the world around me.

19. I have a very good sense of pitch, tempo, and rhythm.

20. Knowing directions is easy for me.

21. I have good balance and eye-hand coordination and enjoy sports which  
use a ball.

22. I respond to all people enthusiastically, free of bias or prejudice.

23. I believe that I am responsible for my actions and who I am.

24. I like learning about nature.

25. I enjoy hearing challenging lectures.

26. Math has always been one of my favorite classes.

27. My music education began when I was younger and still continues today.



28. I have the ability to represent what I see by drawing or painting.

29. My outstanding coordination and balance let me excel in high-speed

activities.

30. I enjoy new or unique social situations.

31. I try not to waste my time on trivial pursuits.

32. I enjoy caring for my house plants.

33. I like to keep a daily journal of my daily experiences.

34. I like to think about numerical issues and examine statistics.

35. I am good at playing an instrument and singing.

36. My ability to draw is recognized and complimented by others.

37. I like being outdoors, enjoy the change in seasons, and look forward to

different physical activities each season.

38. I enjoy complimenting others when they have done well.

39. I often think about the problems in my community, state, and/or world

and what I can do to help rectify any of them.

40. I enjoy hunting and fishing.

41. I read and enjoy poetry and occasionally write my own.

42. I seem to understand things around me through a mathematical sense.

43. I can remember the tune of a song when asked.

44. I can easily duplicate color, form, shading, and texture in my work.

45. I like the excitement of personal and team competition.

46. I am quick to sense in others dishonesty and desire to control me.

47. I am always totally honest with myself.

48. I enjoy hiking in natural places.

49. I talk a lot and enjoy telling stories.

50. I enjoy doing puzzles.

51. I take pride in my musical accomplishments.

52. Seeing things in three dimensions is easy for me, and I like to make

things in three dimensions.

53. I like to move around a lot.

54. I feel safe when I am with strangers.

55. I enjoy being alone and thinking about my life and myself.

56. I look forward to visiting the zoo.

Below is an example of an MI profile from Literacy Works:

**Your top three intelligences:**

<i>Intelligence</i>	<i>Score (5.0 is highest)</i>	<i>Description</i>
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<b>3.14</b>	<b>Language:</b> You enjoy saying, hearing, and seeing words. You
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like telling stories. You are motivated by books, records, dramas, opportunities for writing.

Effective techniques of enhancing your learning using your language intelligence include reading aloud, especially plays and poetry. Another idea is to write down reflections on what you've read.

You may also enjoy exploring and developing your love of words, i.e., meanings of words, origin of words and idioms, names. Use different kinds of dictionaries. Other ideas:

- Keep a journal

- Use a tape recorder to tape stories and write them down
- Read together, i.e., choral reading
- Read a section, then explain what you've read
- Read a piece with different emotional tones or viewpoints — one angry, one happy, etc.
- Trade tall tales, attend story-telling events and workshops
- Research your name



**2.86 Self:** You have a very good sense of self. You like to spend time by yourself and think things over. You will often take in information from another person, mull it over by yourself, and come back to that person later to discuss it. You like working on projects on your own. You often prefer to learn by trial and error. Effective techniques to enhance your learning include keeping a journal and giving yourself time to reflect on new ideas and information. More ideas:

- Go on "guided imagery" tours.
- Set aside time to reflect on new ideas and information.
- Encourage journal writing.
- Work on the computer.
- Practice breathing for relaxation.
- Use brainstorming methods before reading.
- Listen to and read "how to" tapes and books.
- Read cookbooks



**2.86 Social:** You like to develop ideas and learn from other people.

You like to talk. You have good social skills. Effective techniques of enhancing your learning using your social intelligence include taking part in group discussions or discussing a topic one-to-one with another person. Find ways to build reading and writing exercises into your group activities, such as:

- Reading a dialogue or a play with other people
- Doing team learning/investigating projects
- Setting up interview questions and interviewing your family, and writing down the interview
- Writing notes to another instead of talking.

**The scores for your other five intelligences:**



**NATURE**  
(Naturalist)

2.71



**MUSICAL**

2.43



**BODY  
MOVEMENT**  
(Kinesthetic)

2.43



**SPATIAL**

2.14



**LOGIC/  
MATH**

1.86

Just because these five are not in your top three doesn't mean you're not strong in them. If your average score for any intelligence is above three, you're probably using that intelligence quite

often to help you learn. Take a look at the Practice section to see how to engage all your intelligences.

## APPENDIX G

### Birmingham Grid for Learning MI Online Survey

Students complete the statements below by using one of the following choices:

- This is not like me at all
- I am very rarely like this
- This is a bit like me
- This is sometimes like me
- I am like this most of the time
- I am always like this

I like playing games with my friends.

I remember things by repeating them to a rhythm.

I can pick out different instruments when I listen to a piece of music.

I can sort out arguments between friends.

I learn best by doing things.

I think about the things I have learned. I know my own mind.

I like to make lists.

I can see pictures in my head when I remember things.

I am good at mathematical problems and using numbers.

I keep or like pets.

I can recognize and name different types of birds, trees and plants.

I always do things one-step at a time.

I am curious about why my friends do things.

I know some of my weaknesses and strengths.

I like working and thinking on my own and quietly.

I enjoy being outdoors when I learn.

I learn well from listening to others.

I have a good sense of direction.

My best thinking is done when I am on the move.

I can take things apart and put them back together easily.

I like to think out loud.

I notice things. I often see things that others miss.

I enjoy working on my own.

I enjoy parties.

I can tell when my friends are happy or sad.

I can use lots of different words to express myself.

My mood changes when I listen to music.

I enjoy making music.

I like explaining things to others.

Pollution makes me angry.

I like to work things out and put things in order.

I find it hard to sit still.

I like to work in a team.

It is easy for me to learn about things that interest me.

I like to work with my hands.



I like to use charts and diagrams in my learning.

I can remember music and songs easily.

I enjoy writing things down.

I enjoy problems and puzzles.

I have a good sense of balance and like to move around a lot.

Once the student has chosen a description of his or herself for each statement, he or she will click “finish,” and a colorful pie chart (see Appendix H) is generated displaying their strongest “smarts” using the following descriptors:

Kinesthetic (Body Smart)

Linguistic (Word Smart)

Naturalistic (Nature Smart)

\*Visual/Spatial (Picture Smart)

Musical (Music Smart)

Logical (Number Smart)

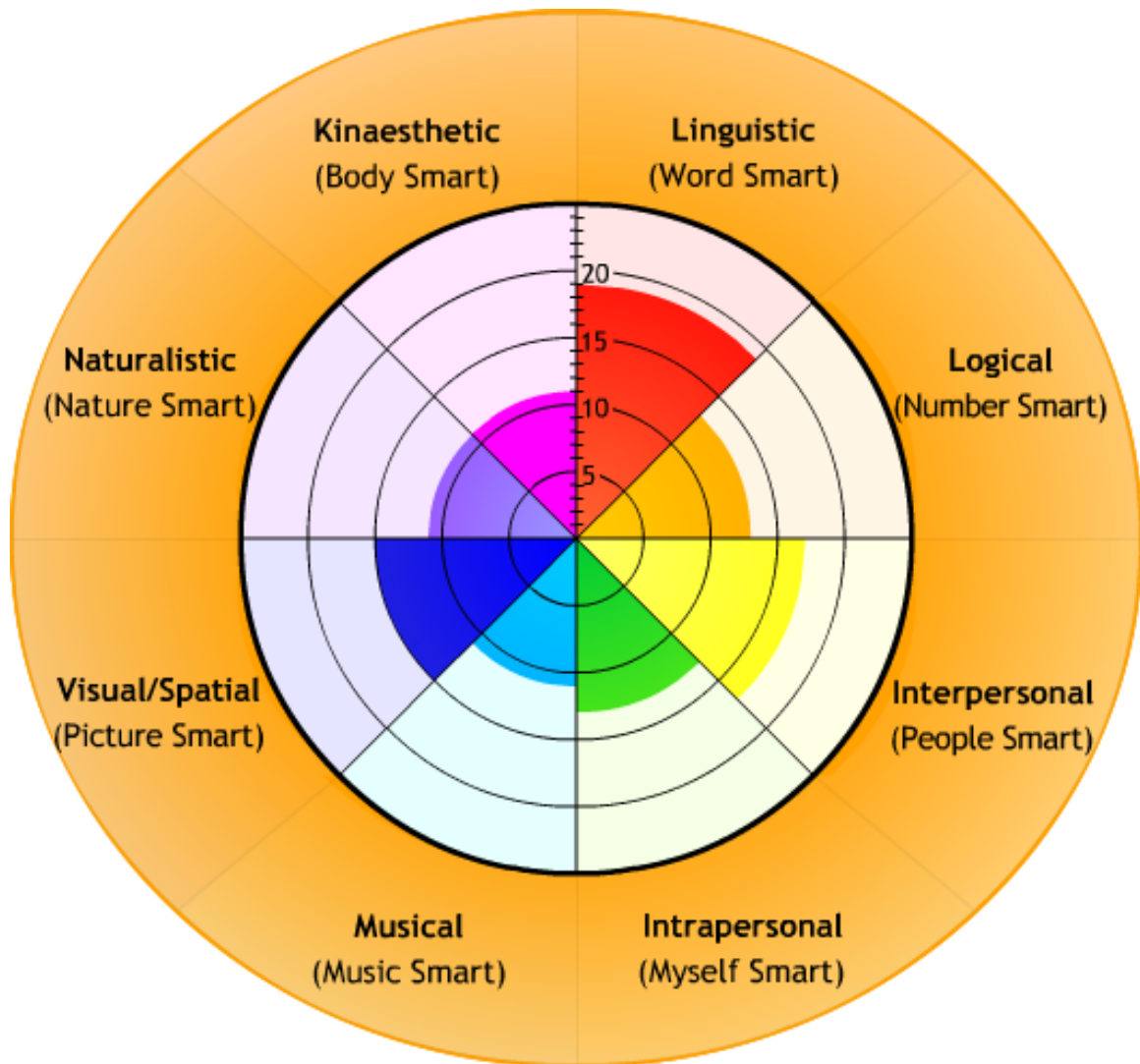
Intrapersonal (Myself Smart)

Interpersonal (People Smart)

\*I am noting “Visual/Spatial,” because Dr. Gardner does not regard his Spatial Intelligence as being connected to a visual intelligence; he asserts that persons with impaired (or no) vision can have high spatial intelligence. I am noting this as a ‘harmless misinterpretation’ of Gardner’s theory.

## APPENDIX H

Birmingham Grid for Learning MI Pie Chart Example



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