SEARCHING FOR STRENGTHS: MULTIPLE INTELLIGENCES AND LEARNING DISABILITIES

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Dedication

For my children

Colton, Jordan, Caden,

And

All of my "kids" that will pass through my classroom.

Celebrate

The success of your strengths,

Recognize

Your weaknesses,

Embrace

Challenges.

Abstract

This action research study was undertaken because there has been an inadequate amount of research on students with learning disabilities and their areas of strength. In this study I examined the interrelatedness of using Howard Gardner's theory of Multiple Intelligences within a classroom of students with learning disabilities in rural Southern Alberta. My research question was as follows: Would the use of the theory of Multiple Intelligences, within one rural Junior High special education class, lead to improved social, emotional, and academic success for the students? I worked with 19 students for a period of nine weeks. Through identifying and using the student's areas of strength and incorporating the theory of Multiple Intelligences, I provided an avenue for the students to improve upon their weaknesses. This study could assist educators in offering alternative strategies to enable students with learning disabilities to be successful. Through observations, pre and post Multiple Intelligences inventories, projects, presentations, journals, student-teacher conferences, video conferences, and interviews I obtained data that was both qualitative and quantitative in nature. The analysis of the data did conclude that there were gains within the academic, social, and emotional areas despite an interruption caused by a teachers' strike. A future research study within this area is recommended in order to solidify any correlation between the theory of Multiple telligences and increased academic, social, and emotional success for students with rning disabilities.

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Chapter 1: Introduction

The reason for education and learning is to find meaning in life itself.
—Neil Postman

Personal Impetus

In the spring of 1996 I was teaching at Granum School in a small rural agricultural community in Southern Alberta. As a school community we were undergoing a change in our philosophical and pedagogic beliefs. As a staff we were looking for a solution to the "split grade syndrome" that had been our template for a number of years. Each year we would group two grades together based on the number of students in each grade. The grade configurations would change yearly depending on these numbers. Some years in the elementary grades we would have a grade 3/4 split and other years a 4/5 split. We would rotate curriculums based on the splits as well as the curriculums not taught in previous years. It was becoming a management nightmare.

My own teaching experience, at the time, was limited to 4 ½ years compared to more than 10 years for the rest of the staff. I was idealistic as I imagined a better place for students and myself within the walls of our school community. Having taught in multi-graded Physical Education (P.E.) and Music classes as well as a 5/6 and a 7/8 split class in both Language Arts (L.A.) and Social Studies (S.S.), I knew the difficulty with planning and keeping the curriculums separate. I tried rotating curriculums but always felt that this was somehow shortchanging the students. When our staff decided to look at a variety of models for rural schools we seriously considered a multiage program as a viable alternative.

In May of 1996 our staff visited University Elementary School, a multiage school in Calgary, and we were in awe of what could be done within a multiage environment. Within these classrooms I also saw my first glimpse of how the theory of Multiple Intelligences (Gardner, 1983/1993) could be incorporated into a classroom. Not only were some of the teachers working with multiage groupings but they were also using Howard Gardner's theory of Multiple Intelligences to varying degrees. From that moment on I began to look into both the philosophy and pedagogy of multiage groupings and the theory of Multiple Intelligences (hereafter MI).

My interest in students with learning disabilities (hereafter, LD) started during my professional development for implementing a multiage program. During this time our staff worked extensively within the areas of differentiated instruction and constructivism. These were two concepts and strategies that were used by University Elementary School, our mentor, in Calgary. The use of these strategies was considered superior to the rote, worksheet strategies associated with teaching students with LD. Since our focus was on individualized program planning my own knowledge in the area of LD was being challenged. Multiage programming offered opportunities for students to remain in my classroom for three to four years, and if some were students with LD I individualized their program to meet their specific learning needs. Planning for the needs of students with LD became a large part of my professional development.

After I grasped a basic understanding of MI theory I began to question some of the practices I had witnessed and been a part of, specifically for the student with LD. My interest was drawn to the student with LD because Granum was beginning to attract a larger number of these students as a result of the individualized programming that

multiage organization offered. I began to question how other schools could provide programming for students with LD without using a multiage framework and it brought me back to the theory of MI. The link between the theory of MI and the student with LD is something that I wanted to explore further because I will always have a mix of students in my classroom and I feel it is my responsibility to provide programming for all of them. This became the start of my search for best practice within my own classroom and when I began my Master's program this research developed into my project.

Although the majority of my professional development from 1996 – 1999 focused on multiage programming, constructivism, and differentiated instruction I often found articles about the use of the theory of MI. I was beginning to see connections between multiage grouping and MI theory, and because of my music background I was determined to find a way to bring the arts back into the classroom. During the fall of 1999 I was lucky enough to have an intern teacher from the University of Lethbridge in my classroom. During Candy's time in my classroom I was given professional development time to pursue research on the theory of MI in greater detail. I used the thirteen weeks to completely immerse myself in MI theory and I became "hooked." I was visualizing how this theory could be used within my own classroom and how it seemed to naturally fit with the concept of multiage programming.

In February of 1999 I went on maternity leave for 1½ years. During this time I began to think seriously about returning to school to complete my Master's degree. I applied for a sabbatical but did not receive it, so I applied for a leave of absence and it was granted. My educational journey was beginning again. I went full time for that first year and decided to try again for a sabbatical for the next year. This time it was granted

and I was able to continue and finish my degree. There was one stumbling block through all of this as I didn't have my own classroom to try out my knowledge of incorporating the theory of MI into a program for students with LD. My search for a suitable classroom began.

It started in August of 2001 with a lot of phone calls, trying to pinpoint a project idea that would be workable given my situation. I approached a teacher in Claresholm with a classroom of students with LD and shared with her my idea for a project. It took more than one conversation to answer questions, alleviate doubts, and give a little background into the theory of MI. This joining of two teachers from varying backgrounds was a challenge but would prove to be beneficial to both of us.

> *After brief conversations Barb approved my ideas and then I talked briefly with the principal and he thought it would be good 'publicity' to have something going on with their LD program — a boost within the community maybe. I hoped I could live up to the expectation of providing such a boost for their HUB program. (Journal, September 2001)*

The HUB (Helping Understand the Basics) program had been in existence at this school for 3 ½ years. It was started as a remedial program that focused on life skills for a group of students with severe LD. The program continued on the basis that the students in the program were two or more years behind in their reading levels. Teachers or parents could recommend students for HUB; the ideal situation was that the students were in HUB for a short period of time and then back in mainstream classes. HUB focused on the L.A. and Math curriculums within Grades 7 and 8.

There was a trust and comfort level that needed to be built up between Barb and myself. It took awhile to establish this, but in the end Barb gave me permission to come into her classroom and work with her students for my project. This didn't emerge without a few difficult moments.

> *I am feeling a little distressed. I think Barb wants to bail on me as I haven't been able to get a hold of her for a couple of weeks now. It is stressful trying to arrange this project around somebody else. (Journal, November 2001)*

It took more talking and meetings to assure Barb that what I would be doing would in no way jeopardize the program that she already had running in HUB. I wanted to add to the program — not change or take away from it. By the end of November I knew where I would be conducting my research on the theory of MI and students with LD. Although I was overwhelmed by it all I was also very excited to be heading back into the classroom. Thus began the first part of my journey.

> *Well, I started my project today and it was very weird going into a classroom that I know is not mine but I will have to try and make some connection to it over the next few months. (Journal, January 2002)*

Purpose

My professional development within the theory of MI brought me to the point that I was eager to try the strategies laid out by Gardner (1983/1993) within a classroom setting. I had the opportunity to work within Barb's HUB class to do just that.

My research question focused on the relationship between Howard Gardner's theory of MI and its application to a special education classroom to ascertain whether it could have any impact on student learning. My research questions were as follows:

Would the use of Multiple Intelligences, within one rural Junior High special education class, lead to improved social, emotional, and academic success for the students?

Related to my main question is a sub-question: How could the use of the theory of MI alter the student's perception about their own strengths and weaknesses within these areas? To answer these two questions different methodologies were used (see Chapter 3).

Multiple Intelligences is used in reference to Howard Gardner's theory and the term special education class refers to a class of Grades 7 and 8 students with mild to moderate learning disabilities. The social aspect of the study applies to the peer to peer and student to teacher relationships within the classroom environment. The emotional aspect of the study applies to the individual student's self-esteem and self-perception. I have chosen to use the heading emotional success rather than self-esteem as the literature refers to it this way (Gardner, 1983/1993; Gibson & Govendo, 1999; Hatch, 1997; Hearne & Stone, 1995). Emotional intelligence has been given its own area of importance within research (Goleman, 1995), and I used the personal intelligences to explore this area. The academic aspect of the study applies to the student's ability to work within given core curriculums. The success within each area was measured through the use of a variety of techniques, including MI inventories, student/teacher conferences, interviews, observations, checklists, and teacher-generated assessments.

I conducted this research study within my home community so I already knew the principal, teacher, and some of the students and their parents. Obtaining permission to proceed with this study was done individually with the principal and teacher and on a

group basis with the students. There were no problems in obtaining permission from the students or their parents.

I focused my research on a small population, 19 Junior High students, with LD. These students were already part of an environment that utilized a multi-sensory approach to learning as much as possible. Barb was open to innovative strategies that would bring her students further success.

Research that connects the theory of MI and special education has only been conducted to a limited extent. Usually the research group tended to focus on the gifted and talented group of students, not on students with LD (Blythe & Gardner 1990; Cline & Schwartz 1999; Poplin 1988). In contrast my research focused on the specific needs of the student with LD. I was in the HUB classroom for a period of nine weeks. My intention was to be in the classroom for a longer period, but our school division was involved in the teachers' strike that lasted for four weeks.

The next four chapters will give you some background information and research related to the theory of MI. Then I will move into the methodology that I used within my research as well as speak to some of the limitations I encountered. In Chapter 4 I will summarize my findings as well as reflect upon the process of action research and where it will take me next.

Chapter 2: Literature Review

Each day be open to the world, be ready to think; each day be ready not to accept what is said just because it is said, be predisposed to reread what is read; each day investigate, question, and doubt.

—Paulo Freire

Multiple Intelligences

Howard Gardner (1983/1993) developed his theory of MI to try and explain the vast differences between individuals with regards to learning.

> In its strong form, multiple intelligence theory posits a small set of human intellectual potentials, perhaps as few as seven in number, of which all individuals are capable by virtue of their membership in the human species. Owing to heredity, early training, or, in all probability, a constant interaction between these factors, some individuals will develop certain intelligences far more than others; but every normal individual should develop each intelligence to some extent, given but a modest opportunity to do so. (Gardner, 1983/1993, p. 278)

During Gardner's research on the nature of human cognition, he came up with a definition of intelligence "as the capacity to solve problems or fashion products which are valued in one or more cultural settings" (Blythe & Gardner 1990, p. 33). Gardner (1983/1993) further clarifies this definition of intelligence as:

1. The ability to solve problems that one encounters in real life.
2. The ability to generate new problems to solve.
3. The ability to make something or offer a service that is valued within one's culture (p. 60-61).

Gardner (1983/1993) separated intelligence into eight categories: linguistic (enjoys activities that involve reading, writing, and speaking), logical-mathematical (enjoys working with numbers, experimenting, and patterning), musical (enjoys activities which involve music, rhythm, melody, and sounds), spatial (enjoys learning through visualizing, diagrams, and a wide range of visual media), bodily-kinesthetic (enjoys activities which allow movement, touching, and doing), interpersonal (enjoys learning through communicating and working cooperatively with others), intrapersonal (enjoys personal, self-directed, and individualized learning situations), and the naturalist intelligence (enjoys working and being within the natural environment). His research is continuing within the areas of spiritual and existential intelligences.

My own research focused on his first eight intelligences and I used the vocabulary from Kisilevich and Picones' *Seven Smarts Checklist*, which was adapted from T. Armstrong (1993), so that it was easier for the students to relate to the terms. Our classroom vocabulary came to include the following; linguistic (word smart), logical/mathematical (logic smart), visual/spatial (picture smart), bodily-kinesthetic (body smart), musical (music smart), interpersonal (people smart), intrapersonal (self smart), and naturalist (nature smart).

> *I started the Gr. 7's by going over each intelligence individually, not necessarily tied to a theme. I started the Gr. 8's with a fraction unit that incorporated all of the intelligences. (Journal, January 2002)*

Gardner's research started within the area of intelligences as a directive from The Bernard van Leer Foundation of The Hague, Netherlands. "In 1979, the foundation asked the Harvard Graduate School of Education to assess the state of scientific knowledge

concerning human potential and its realization" (Gardner 1983/1993, p. xxxi). Howard Gardner was a junior member of a team of researchers, a developmental psychologist who had already done some work on the development of symbolic skills in normal and gifted children, prodigies, idiot savants, autistic children, and on the impairment of such skills in brain-damaged adults. His task, at this time, was to research the area of the nature of human cognition. His book *Frames of Mind* (1983/1993) was the first volume published from this project and created some interesting discussion within the field of education.

From his initial research Howard Gardner started a research group called 'Project Zero.' This is an interdisciplinary, Harvard-based, research group in which Howard Gardner is the co-director. This group was started in 1971 to conduct various studies with teachers and students at schools within Massachusetts (Jasmine, 1996). Much of the current research on the theory of MI is a result of these studies, and this group is still a driving force within educational research.

The theory of MI brings with it many questions as well as the possibility to enlighten people about future growth within education. The current public educational system has long relied on the linguistic and logical-mathematical intelligences, thus leaving out a significant number of students who truly do not learn best by these methods. Generally, a person uses all of Gardner's (1983/1993) intelligences in some form or another to solve problems and to learn within new situations. The intelligence "profile" that you are born with is not necessarily the one that you die with. Throughout your lifetime you can build upon your intelligences in such a way that areas of less mastery or

comfort can be worked on until you decide it's time to move on to a different intelligence.

> *The intelligence profile of the Gr. 7 class showed them to be high within the inter- and intrapersonal or people- and self smart intelligence. The Gr. 8s were high within the intrapersonal or self smart intelligence. (Journal, January 2002)*

Howard Gardner's theory of MI (1983/1993) has been a catalyst for educational reform in many parts of North America and the world (Hearne & Stone, 1995; Mettetal, Jordan, & Harper, 1998; Udvari-Solner, 1996). Vialle (1997) took me on a journey to Australia to share the story of Cook Primary School in Canberra, Sacred Heart Catholic School in Cabramatta, and Saint Patrick's High School in Dundas, which all incorporated the theory of MI into their programming. Vialle (1997) talked about the importance that MI theory had played in revolutionizing special education within Australia. There was even a television program mentioned called "Lift Off," which was designed for children ages 3 – 8, and it focused on all of the intelligences. Leland and Harste (1994) took their language arts programs and incorporated the theory of MI into it to bring the students into a "multiple ways of knowing" program. Their focus became the "arts" of language arts, which enabled students to work within a variety of experiences focused on the intelligences. As I was going to be working within a language arts program I was drawn to this example of incorporating MI theory successfully into a classroom environment. Kornhaber (1999) used the theory of MI to research assessment methods for what she termed "underserved" students. The purpose of her research was to challenge testing methods that were already in place to see if they were "intelligence fair". As my research focused on students with LD I was also very interested in intelligence fair assessment, so

working through her research gave me some ideas on how to incorporate the theory of MI into my assessment. Gibson and Govendo (1999) outlined for me the importance of setting up a physical environment and routines conducive to the theory of MI. Their research focused on using the theory of MI to reinforce positive social skills, which is something that would become very important within the HUB classroom. Schools such as the Key School in Indianapolis, Minnesota, the New City School in St. Louis, Expo for Excellence Elementary School in St. Paul Minnesota, and Lincoln High School in Stockton, California have been using the theory of MI within the field of education for many years (Campbell, 1991; Gardner, 1993; Hoerr, 2000). It is from the lived stories within the walls of these schools and the sharing that the educators within these environments were willing to do that the theory of MI has been brought forward as a way to help students achieve success. The theory of MI has become a philosophy of learning for many educators as its basic premise is built upon the idea that all students want to be successful.

Within the classroom environment there are many ways to determine a student's intelligence profile (Gardner, 1983/1993) but one must be careful not to label students according to this finding (Hatch, 1997). Awareness of the intelligence(s) that a student shows strength in should be used as a tool to help teachers teach. The intelligence strength and weakness will shift, grow, and vary over time and both the students and the teacher need to accept this and change accordingly. Gardner has opened up the entire realm of intelligence through his research and has allowed educators to question the notion of intelligence as it is used today.

Although the theory of MI is not a cure-all for educational weakness it does offer alternatives if one is struggling in meeting each student's diverse needs (Baum, Renzulli, & Hebert, 1994; Hatch, 1997; Hearne & Stone, 1995; Wells, 1999). Gardner himself does not see the theory of MI as a program that will lead to the development of a certain kind of person but rather as a description of how one's mind works (1993). This is especially evident within the area of the student with LD. Many times s/he has giftedness or talent within an area that may or may not be detected with conventional assessment tools (Baum & Owen, 1988; Hearne & Stone, 1995; Kornhaber, 1999; Poplin, 1988; Udvari-Solner, 1996; Wagmeister & Shifrin, 2000). Strength could be evident in how the student survives a typical day in school, or his/her particular expertise could come through in non-academic subjects. Teachers generally believe that their students with LD have hidden talents or abilities that just have to be tapped into or unlocked. Could the use of the theory of MI within their existing program assist teachers in detecting these talents or abilities?

One of the key areas that seem to resonate throughout the research within this area is that students with LD fail to succeed in school, in large part, because of a lack of interest in a particular subject (Baum & Owen, 1988; Hearne & Stone, 1995; Poplin, 1988). This could be due to the students' own personal preference for subject or activity or the lack of originality or imagination on the part of teachers. The use of the theory of MI to stimulate the learning environment is well-documented (Baum, et al., 1994; Gardner, 1993; Hatch 1997; Hearne & Stone, 1995; Oliver 1997). Using strategies such as project-based learning, differentiated instruction, and constructivism lends itself nicely to the incorporation of the theory of MI into a classroom.

Not only is the learning environment important in order for the students to be successful but active participation is also a key factor. One successful strategy that achieves this is through the use of meaningful projects (Baum, et al., 1994; Gardner, 1993; Hearne & Stone, 1995). When using projects students are able to explore problems, issues, and questions from their own perspective. When students are actively involved in their own learning there could be fewer management problems as they begin to take ownership for their learning.

The social and emotional success of students with LD may depend on their ability to take ownership and responsibility for their learning. This may not always be accomplished in LD programs offered today. Often students with LD are pulled out of the regular classroom for drill and practice in their area(s) of weakness rather than strength. Students' self-esteem and sense of worth are not going to improve when they are not seeing any success. To focus on a weakness is not what is done with the "average" student. Starting the learning process from where the student with LD is at is more important than starting with their deficiencies (Baum & Owen, 1988; Gardner, 1993; Oliver, 1997; Poplin, 1988; Udvari-Solner, 1996). If a teacher wants to see real academic gains with students with LD it would make sense to start with their areas of strength.

The use of MI theory within a school program can assist students with LD in pinpointing their areas of strength. When starting from areas of strength, students with LD could gain confidence to tackle challenging materials in areas that may prove difficult for them.

> *I never really used role-play a lot before and things like that. I've never really thought of using it but it's working a lot better for me to do presentations. (Student Interview, April 2002)*

Successful implementations of the theory of MI within specific school settings have been well documented within MI research (Gardner, 1993; Hearne & Stone, 1995; Oliver, 1997). Wells (1999) focused on "learning different" children and how to best meet their needs. She felt that through the use of the theory of MI these students could become "global learners." This is what I was hoping to tap into within my own research. Gibson and Govendo (1999) reinforced the importance of routine and customs within the classroom environment. The use of MI theory requires that the teacher and students are well versed in the expectations and structures within the classroom. Together they problem solve and maintain a focus on their strengths and weaknesses within the intelligences. The relationship that is fostered through the use of the theory of MI allows teachers to focus on individual student strengths, which is extremely important when dealing with students with LD (Vialle, 1997). Identifying students with LD from their strengths instead of their weaknesses can only strengthen the student-teacher bond. If teachers could regard students with LD as "learning different" instead of "learning disabled" then often a giftedness could be identified through a different intelligence (Baum & Owen, 1988; Vialle, 1997; Wagmeister & Shifrin, 2000; Wells, 1999). Finding this giftedness is very important for the teacher if there is to be true academic, social, and emotional success for the student with LD. Exactly how this can be achieved may surface by using the theory of MI within a classroom program.

Within Gardner's book *Multiple Intelligences: The Theory in Practice* (1993) he gives an example of a Junior High school in Boston that paid particular attention to the specific skills needed to be successful within the public school system. This study targeted students in Grades 5-7 who became familiar with the hidden curriculum. The hidden curriculum in this study focused on the inter- and intrapersonal intelligences and how, together with academic intelligences, being aware of these intelligences helped to produce success for students. This particular group of students became knowledgeable about their own personal strengths and weaknesses as well as the impact that the school environment had on their learning.

Within this school a project was designed to test the ability of students at risk for school failure to survive the Junior High experience; it was called PIFS (Practical Intelligence For School). The middle school was targeted because of the growth within the physical, emotional, and intellectual areas for students during this time in their lives. The guiding principles within PIFS that could correlate with my own study would be the inclusion of three broad areas: 1) one's own intellectual profile, learning styles, and strategies; 2) the structure and learning of academic tasks; and 3) the school as a complex social system (Gardner, 1993, p. 123). As I focused my research on the success within the areas of social, emotional, and academic development, this study was critical in giving me a basic framework. "Our underlying premise was that students who thrive in school need to learn, apply, and integrate both academic knowledge about subject domains and practical knowledge about themselves, academic tasks, and the school system at large" (p. 123). When I read this statement I was drawn into the PIFS project as something that I could use as a template for my own research. Every teacher wants success for his/her

students regardless of whether or not they are at risk. There are students that thrive regardless of teacher intervention but those that don't are the ones that I am most concerned about. The target areas from PIFS were similar, even though my study focused on a concentrated, smaller number of students.

Through the readings that I have done I became aware of a need for further study within the area of the theory of MI and the student with LD. My research could be such a vehicle. Several assumptions were brought forward in these readings, which I was able to test within a classroom environment. Is there a correlation between the use of the theory of MI and increased success for the student with LD? Is there a possibility that by focusing on the strengths of students with LD, that success could be evident within academic, social, and emotional areas? It was through my research that I hoped to gain some insight into these areas.

Chapter 3: Methodology

The action resulting from this research is meant to add to the life of those whose living practice is, as it were, bound by the school.

—John Willinsky

My interest in the theory of MI and the student with LD began with my first teaching assignment. As a new teacher I was quite frustrated that I was not equipped to adequately teach students with LD. These students were part of my classroom and they were often disruptive. I was unable to "teach" them, and I felt like a failure. Throughout my first couple of years of teaching I became interested in students with LD and the strategies I could use within my classroom to reach them. I observed several LD programs, during my first four years of teaching, from pull-out to inclusive ones. It was through this observation that I became aware of the theory of MI. My focus, regarding students with LD, became clearer once I was involved with the implementation of the multiage program within Granum School in 1996. I was now convinced that there was a way to include students with LD in all levels of learning.

What I thought was lacking within the multiage environment was a way to reach the variety of ways that each student learns, and this is what enticed me about the theory of MI. The collaborative professional development that our staff in Granum went through to move towards a multiage philosophy showed me the advantages of this learning process. Action research allowed me to be a part of this process again. This research methodology enabled me to see the theory of MI in action, and it answered some of my own questions regarding how I could best reach my students with LD so that they could achieve success as learners.

Action Research

Action research, as a methodology, embraces the difficulties, ambiguities, and suffering that are often ignored or left out of the teaching process. One such area that could be overlooked is searching for strengths within a community of students with LD. To begin research within this area I required the use of a variety of methods so I chose action research for my study as its two essential aims are to improve and involve (Carr & Kemmis, 1986). Throughout my study I was aiming to improve my own practice and understanding of teaching students with LD in my own school community. The involvement in my action research arose from the students with LD being a part of the planning, acting, observing, and reflecting within the classroom. Working collaboratively with Barb included her in dual roles as a participant along with the students and also as a teacher.

Action research is a participatory and collaborative process of self-reflection (Carr & Kemmis, 1986). Teachers are constantly asking questions about their own teaching practice and what works best for their students. Action research became a living practice during my study as it focused on the relationships within the classroom, the disruptions brought forward through the research, and the collaboration that resulted from the research (Carson & Sumara, 1997). The action research approach provided for a natural exploration and re-examination of my own practice of teaching.

> *As I sat beside them watching their presentations I was given a little more insight into exactly how difficult this process was for them. My own lived experience with MI theory was not what these students were going through. My vision of my*

action research was being shaped daily by the responses and interactions within this classroom. (Journal, March 2002)

As I worked with another teacher, within her classroom, the action research model was the best approach to use within my study. In order to find out what was going on in this classroom I observed, reflected, and analyzed my practices. Valuing my own experiences and expertise is what action research brought to my study (Jeroski, Booth, & Dockendorf, 1992). This was the type of research that I was involved in with this study.

Participating within an action research project enabled me to gather data about applying the theory of MI to programming for students with LD. This action research project started from my own questions about the theory of MI and students with LD and incorporated the interactions between a classroom teacher, her students, and myself. We were all part of a larger community involved in this research. I was not a separate entity that watched from afar, I was involved and welcomed all participants into my research. My action research dealt with concerns about my own practice and changes that I hoped to see in the programming for students with LD. My goal through my action research was to improve my own teaching practice accordingly.

Classroom Context

To determine whether or not a student belonged in the HUB class, the student had to be assessed two or more grade levels below in academic achievement. This was usually most prevalent within the student's reading level. The Canadian Test of Basic Skills (CTBS) (Nelson Publishing, 1997) was one of the assessment tools used to determine this. Barb was also in the process of receiving training with The Detroit Test of Learning Abilities (DTLA-4) (Hammill, 1998) during the time I was with her. Assessment was

ongoing during this project and was done by both Barb and myself. Barb continued with assessment methods she used at the time; the ones that I employed will be discussed in the next section.

There were nine Grade 8 students and nine Grade 7 students involved in the HUB pullout program. The Grade 7 and 8 HUB classes met daily for 80 minutes each in the morning, during this time Math and L.A. were taught. I worked with these students every day for the entire 80 minutes over a period of two weeks to familiarize them with Gardner's (198/1993) theory of MI. This was an important step in my research as the students needed to be aware of the theory of MI before they could begin to work with it. They needed to be familiar with their own intelligences and the vocabulary used within MI theory, as it would be used during the classroom activities. After that initial introductory period my time with them was reduced to one 40 minute L.A. period every day for each grade.

The success of this action research project relied heavily on an open and honest relationship between all participants and myself. Mutual trust and respect was needed to ensure success. A large amount of time during the first few weeks was used to foster this type of relationship. Although I didn't have the opportunity to build a long-term learning community based on this trust and respect, I did see the beginnings of this type of environment. Again I have to stress that the amount of time spent within an action research project is crucial to its success and I truly feel that I did not spend enough time within this classroom.

Data Collection

Throughout this study I employed the triangulation principle to data collection (Mills, 2000; Sagor, 1992). From the formulation of my research question and throughout my literature review I journalled and collected mental notes, images, and impressions from various people and resources. This was the informal start to my data collection. As my research was qualitative in nature, triangulation was important to identify the variety of opinions and perspectives on the theory of MI and its perceived benefits for the student with LD. Within action research the triangulation process may be seen as a means to interpret various validity claims within the project itself (Carson & Sumara, 1997). Triangulation opened the research to more discussion and possibilities than first anticipated; it also allowed for individual interpretation. The use of triangulation compensated for any imperfections with the formal data collecting instruments, increased the confidence in the results, and raised more researchable questions (Sagor, 1992).

Data, within action research, provides an opportunity for the participants and researcher to develop a relationship of "co-researchers" (Carson & Sumara, 1997). Although the participants were from varied backgrounds, experiences, ages, and gender there was a common ground that was met within the actions taken. Together the students, Barb, and I participated in my action research project and contributed to the data in a variety of ways. The self-reflection, collaborative assessment, student/teacher conferences, and interviews became the basis for my data collection and reinforced the idea of contributing to the research.

Within this study I used a MI inventory to get a basic understanding of where each student with LD was at by developing a profile of his/her own intelligences. A MI

inventory is a quantitative measure of the frequency and kind of intelligence that the student feels s/he exhibits. I used an inventory created by Denise Kisilevich and Nancy Picone, from Calgary, Alberta. They adapted their inventory from Thomas Armstrong's book *7 Kinds of Smart* (1993). I was given verbal permission by the authors to use this inventory in my study (see Appendix A).

Completion of the MI inventories was done as a class with the option of it being done in private. No one requested this option. All students chose to complete the inventory in class. I focused my research on building upon the students' areas of strengths as well as introducing them to strategies to strengthen at least one weaker intelligence area. In order to fully realize the potential(s) of each student, a pre and post MI inventory was completed.

> *I'm highest in logic smart, people smart, and self smart and I thought I would be higher in picture smart. (Student Journal, January 2002)*

This was a very important step within my research as it provided a base for identifying areas of growth within their intelligences (see Chapter 4). Since the focus of my time with these students was to try and increase awareness of their strengths, they had to know how to identify them and work within them. Using the MI inventories allowed for this as well as for the development and discussion regarding specific intelligences.

> *My MI inventory was highest in people smart and my lowest was logic smart. I thought I was going to be body smart. (Student Journal, January 2002)*

Project-Based Learning

Some educators conceive that a student's mastery of a particular subject is only seen with a high standardized test score. I have openly questioned this since beginning my research

with multiage groupings. As stated earlier in Chapter 2 the use of projects works well for implementing the theory of MI into a classroom. I decided that for my research project I would use a project-based approach to incorporating MI theory into the L.A. curriculum as Barb wanted to keep the math program separate. Working with L.A. allowed for interdisciplinary work through novel studies and presentations. Through the use of projects the students had a voice in the planning process because they were generated from their areas of interest and expertise. The use of projects enabled all of the students to be involved in the classroom activities.

> *It was a lot easier to learn stuff plus we did different stuff like little projects to see how much we learned. I liked the little games we did. (Student Interview, April 2002)*

Within the projects students were able to explore problems, issues, and questions from their own perspective. Some of the strategies that were employed to achieve this were peer conferencing, teacher/student conferencing, video conferencing, presentations, journalling, and discussions. These gave the students in HUB opportunities to work within their areas of strength and gain much needed confidence (Hearne & Stone, 1995). The presentations that were given at the end of the project often involved more than one intelligence and some of the students even ventured into their area of weakness.

> *It was fun doing the projects but it was a lot of work. (Student Interview, April 2002)*

Mary Doll (1997), in her chapter entitled "Winging It" from *Action Research as a Living Practice*, talked about the use of presentations within the classroom environment. She captures it best when she says; "Students, unused to public display, read at full tilt,

usually without expression. What is beautiful or striking is not the polish" (p. 7). When I first read this I was drawn back into my own students' performances. They were not polished but they showed me a great deal more about the individual students than any paper and pencil test could have shown me. I saw courage, fear, excitement, enthusiasm, awe, and pride.

> *I think the presentations were awesome because everyone put so much effort into them. (Student Journal, Jan. 2002)*

These performances were a retelling of what they had learned from their own perspective and thus voicing opinions. "Voice of a child. Voice of a moment. Voice of a forgotten presence. Voice of absence" (Fels, 2002). The performance aspect of project-based learning was integral to the students feeling success within their learning. Lynn Fels (2002) stated it best when she talked about "performance breathing learning into presence" (p. 192).

Interviews

I utilized several methods of data collection. The interview was used throughout my study and involved the classroom teacher and students. This type of methodology worked best for asking questions as I was working with a small group of students whom I was able to interview at the conclusion of the project.

> *I was able to interview all of the students in a period of a couple of days. It was amazing to me how much of the MI vocabulary they used without me prompting them. (Journal, April 2002)*

I used a structured formal interview format that had been piloted by me. The questions that I formulated focused on specific areas that I wanted feedback and data for my

research. After I had written the initial teacher interview guide (see Appendix B) I asked a colleague, knowledgeable within the theory of MI, if I could interview her. At the conclusion of the interview we discussed the questions and my purpose for the interview. We went through the student interview guides together to ascertain whether or not they would achieve what I anticipated. The information generated from the interviews focused on attitudes, experiences, self-reported behaviours, opinions, beliefs, understandings, and needs that correlated with the use of the theory of MI within this classroom.

> *I'm used to being told I can't do some things and now teachers are telling me I CAN* [student emphasis] *do it! (Student Interview, April 2002)*

I interviewed Barb in a pre and post format to hear her opinions on whether or not incorporating the theory of MI into her classroom did foster academic, social, and emotional success for the students. Questions that arose from classroom observations and the interview format allowed for further probing. During the post interview with Barb I was able to question her further on her thoughts regarding my time in the classroom and the impact that she felt the theory of MI had on her students. She was able to elaborate on areas that I had already targeted as key to my research, such as increased awareness of strengths and weaknesses. The data collected from the interviews (see Chapter 4) added credibility to my study and strength to my findings. Answers to the interview questions allowed the students and Barb to reflect on their experiences with MI theory and make connections to their own learning.

Classroom Observation

Pairing observation with interviewing was the starting point to the triangulation process. Observation was used to collect data prior to and during the time when the students were

engaged in projects that incorporated the theory of MI. With this technique I was able to gather data based on the students' reaction to working within specific intelligences. I experienced what the students were experiencing and took field notes on it (Mills, 2000). Their successes, frustrations, and coping strategies were noted as they completed various activities focused on the theory of MI.

> *Today I learned I'm not very music-smart. It was kind of hard but I did it. (Student Journal, January 2002)*

It was as a result of my field notes that Barb and I collaborated, questioned, elaborated, corrected, and changed what happened in the classroom (Carson & Sumara, 1997). This was where some assessment was done to determine success within the students' social interactions, as behaviour was observed and noted. Observation was used to verify the amount of success a student was having within the interpersonal intelligence.

Observation allowed me to be involved with the students' interaction as well as enabled me to make minor adjustments to the activities or classroom environment if needed (Mills, 2000). As one of the focuses of the classroom was to determine success within academic areas, observation became a place where I could take field notes on strategies the students used to complete academic assignments. I was both an active participant as well as an observer throughout the project. For my observations I used several different techniques, from a running record of what was happening to recording specific paradoxes or "bumps" (Mills, 2000).

> *I had let similar disruptive behaviour slide in previous classes and even within this particular class so it was inevitable that the behaviour would likely continue. (Journal, April 2002)*

I examined individual presentations through the use of videotaping. Videotaping the presentations allowed me to be fully engaged with the classroom activities and gather data at the same time (Mills, 2000). This process also helped the students to examine their social interactions with peers and start discussions regarding appropriate and inappropriate behaviours during presentations (Donoahue, VanTassell, & Patterson, 1996). The videos provided some data to assess student social successes within the interpersonal intelligences. When asked what the best part about the project was, one student noted:

> *Probably doing the presentations and watching yourself present. (Student Interview, April 2002)*

I observed the videotapes in the same manner that I did classroom observations and took field notes. One advantage of videotaping was that I was able to replay sections, if needed, to check my observations. I was also able to play it back to the students for discussion and feedback on behaviour or presentations (Donoahue, et al., 1996; Mills, 2000).

> *One thing that was hardest for me was standing in front of the class and talking while other people were talking. (Student Self-Evaluation, April 2002)*

Analysis of the video presentations was done in a student/teacher conference format between the student and myself while Barb continued with her planned lessons. During this conference there was discussion with the student about the learning process in this classroom. This revisiting of the presentations often led to enlightened discussions on some of the activities that were done and the affect it may or may not have had on the students.

I need to get more prepared and organized. I need to speak louder.

(Student Self-Evaluation, Mar. 2002)

Daily Journals

Teaching is a profession that involves reflective practice; more and more the importance of being reflective is being recognized (Arhar, Holly, & Kasten 2001; Jeroski, et al., 1992). One way for me to examine what was happening in the classroom was to synthesize the information that I was gathering through journalling. My journal become a place where I could safely question, revisit, and analyze my experiences within the classroom (Donoahue, et al., 1996; Jeroski, et al., 1992; Mills, 2000). I found that journalling allowed me to ask and answer my own questions in an informal and safe way. It gave me a voice that is so important in reflective practice and action research. I was examining my self image as a teacher, and I also encouraged the students to journal throughout the study for the same reasons. This process of journalling helps to form one's identity (Carson & Sumara, 1997).

I never thought my highest would be people smart because I'm always by myself and there's not a lot of other people in my life. (Student Journal, January 2002)

In order for the students to strengthen their intrapersonal intelligence a reflective journal was used. This allowed a safe environment for the students to explore their own emotional well-being, which was an important part of the student assessment within this project. Through the use of a reflective journal I coaxed the students to explore a variety of mediums in which to express themselves (i.e., pictorially or linguistically). They were often given prompts for reflection after each activity that focused on a specific intelligence, such as after one pertaining to the naturalist intelligence.

The sensory walk was cool. It made me feel like a person that can't see. (Student Journal, January 2002)

After an activity within the interpersonal intelligence, a two-minute talk/listen/share strategy, a student wrote:

The thing I thought was hard to remember was the part that the other person said yesterday and we had to tell it. (Student Journal, January 2002)

The use of a journal promoted self-talk and allowed the students and myself an alternative medium for communication.

Limitations

Limitations to this study involved student issues as well as outside issues. The student issues revolved around the movement of individuals in and out of the classroom. There was one student within the Grade 8 class that moved to a different school a few weeks into my project. After that another Grade 8 student moved in. The new student that moved in had a great deal of behavioural problems and was not able to participate in my project as she was suspended from class for most of it. Within the Grade 7 class two students moved into the HUB classroom at the halfway point of my project. They were given a pre-MI inventory at that time and were only in the class long enough to participate in one project. This movement of students in and out of the HUB classroom became a limitation to my project.

Another factor that changed during my research project was the loss of approximately four weeks due to the teachers' strike. In addition to the time that was lost due to school closure I was not invited back into the classroom for three weeks after the strike in order for Barb to gain some of the lost time with her students.

> *My "creative stuff" will have to be postponed for another week or two* [post strike] *and that really drives me crazy. I am anxious to get back into the classroom to continue with my research as well as to tweek the students' brains with MI. I don't feel truly confident that MI theory has truly made an impact on this classroom environment yet and that disturbs me. (Journal, February 2002)*

When I did return to the classroom I wrapped up the poetry project we had started before the strike and I did not start a new one. This was a different scenario than first envisioned as I had hoped to remain in the classroom until the end of June. The short timeframe that became my reality made it very difficult for me to transform this classroom into one that embraced the theory of MI. My ideal research project was becoming a lesson in reality.

These types of limitations are a significant part of action research because this type of research is lived and is affected by many changes within the classroom environment itself. Choosing the action research methodology for my research project enabled me to involve myself in the research in an active role. I was able to interact with Barb and her students as well as incorporate the theory of MI into an environment that was already open to innovation. The strategies employed within the HUB classroom were not new to either Barb or myself but they were focused on the theory of MI to highlight Gardner's (1983/1993) research within a rural classroom setting. These activities incorporated the MI vocabulary so that the students could become aware of their areas of strength and weakness. My findings from this action research project will be discussed in the results and analysis chapter to follow.

Chapter 4: Results and Analysis

Making the difference in the lives of students requires care, commitment, and passion as well as the intellectual know-how to do something about it.

—Michael Fullan

Upon reflection my research project started out as something that I was very excited about and extremely eager to get started on. My first few weeks in the classroom were significant because I was getting to know Barb, the classroom teacher, and her students.

Working within someone else's classroom could become a help or a hindrance to what one anticipates to getting accomplished during a research project. Barb was eager but also a bit hesitant because of her unfamiliarity with the theory of MI. Having to coordinate with another teacher ahead of time regarding everything I wished to do was sometimes difficult because we had different ideas about how to achieve specific curricular goals. Having to coordinate my project ideas into a teaching style and curriculum that was already laid out required a lot of collaboration between Barb and myself. As my time within her classroom increased we began to collaborate more because we realized the importance of what each of us was trying to bring into the classroom. We were becoming two minds and four hands connected as we embarked on the research together. We became enthusiastic about the idea of incorporating the theory of MI into the classroom.

The students were very open and wanted very much to participate in my research project. From the moment I started to do my initial observations within the classroom they would ask, "When are we going to start?" The students were eager to try something different and were excited about the prospect of learning in new ways. The student talk

that surrounded the projects and presentations was positive and they often asked about presenting even after my project was finished.

I found that journalling throughout my project became a place to celebrate the many accomplishments I was witnessing within the classroom. It was also a safe place to work through my frustrations as well as reflect on areas that were giving me difficulty. There were definite themes that kept recurring within my journalling and also within the interviews and observations. The following themes and topics emerged: student and teacher awareness of strengths and weaknesses within the intelligences, improvement in academic achievement, increased sense of responsibility and ownership towards learning, student choice, self-reflection, successful use of projects and presentations, increased awareness of the theory of MI, trust, behavioural issues, time constraints, and the structure and routines needed to incorporate MI theory into a classroom. It was from these themes that my results and analysis were fine-tuned.

Results of Multiple Intelligence Inventories

The students completed their first MI inventory on January 10, 2002. The classroom teacher was also included in the classroom inventory for both of the grades. At the time of the first inventory there were eleven Grade 8 students and eight Grade 7 students. After the completion of the inventory the students tallied each intelligence section to come up with a number, out of 10, signifying strength or weakness within each smart or intelligence. The students then ranked their top three smarts from strongest (10) to weakest (1), and if they had the same total for more than one smart they were given the same ranking. I then graphed the top three smarts for the class so that they could see an

overview of the classroom intelligences. I shared these graphs with the students.

For this research project I chose to focus on the classroom group rather than individual students. I used a weighted total to get an overall picture of which intelligences were given importance within each classroom as well as an overall ranking. I weighted the results giving first rankings a weight of three, second rankings a weight of two, and third rankings a weight of one. I then graphed the intelligences for the results so I could see an overview of the classroom intelligences in a broader sense. For a different view of the same data I decided to include a line graph that would show the distribution of the intelligences from a more horizontal perspective.

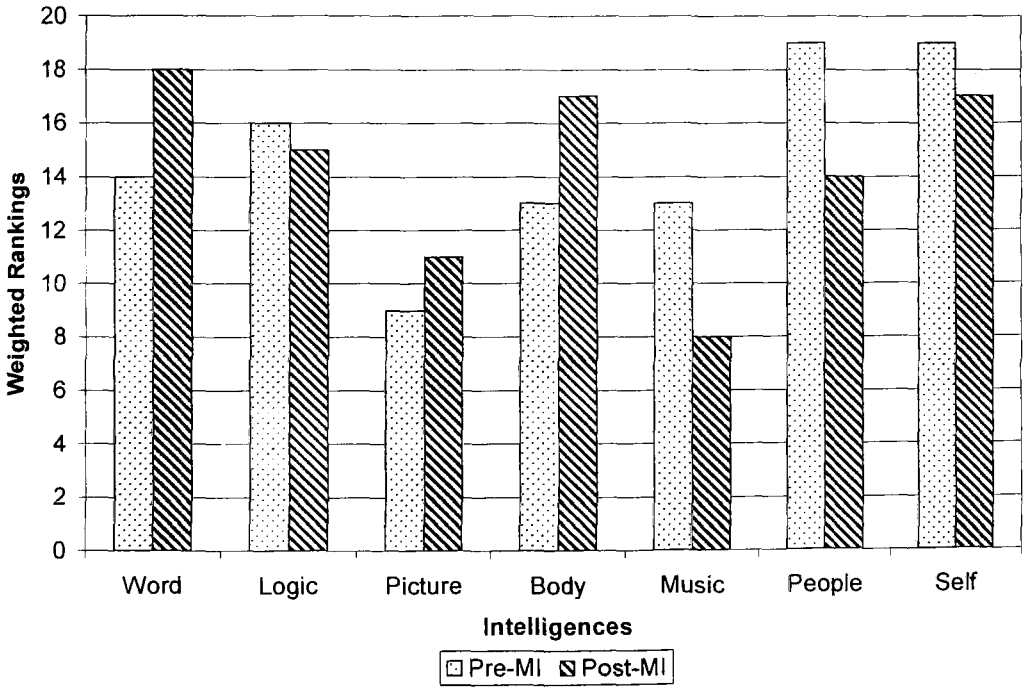

Table 1: Gr. 7 Inventory Comparison

Before the pre-MI inventory was given to the Grade 7 students I made assumptions that the strengths would be within the body and picture smart areas. This

assumption was based on the readings that I had done and the strong evidence given in research that students with LD were usually quite talented in these two areas (Hearne & Stone, 1995; Poplin, 1988; Wagmeister & Shifrin, 2000; Wells, 1999). As it turned out the strengths for this particular group of students, pre-MI, were within the personal smarts. Also, the word and logic smarts were higher than I would have expected. This contradicted the literature and it could be due to the fact that Barb may have had a classroom set up to work within the personal intelligences more than the other intelligence areas. She may also have focused on the word and logic smarts more than picture and body smarts. The high rankings in the personal smarts could also be attributed to the individuals themselves being naturally attuned to these smarts. Another possibility for the high word smart could be attributed to the increased focus on the verbal aspect of presentations when I introduced the theory of MI to these students.

The MI inventory was given again at the culmination of my research on April 19, 2002. Post-MI there was a shift that showed movement towards other smarts. I attributed this movement to the sharing that was done during the student presentations. The students started to move into intelligence areas that were a little more risky for them, such as body and word smarts. Once a couple of the students started to experiment within these areas other students began to try them. I don't believe that there was a weakening within the other intelligence areas but more of an inclusion of the others through experimentation. Once I introduced the intelligences to the Grade 7 students the classroom was set up in such a way that experimentation within the intelligences was encouraged and praised. Students were given opportunities to work individually or in groups to discuss their

strengths and weaknesses. This allowed for individuals to work within intelligence areas they might not have thought of as smarts in the first place.

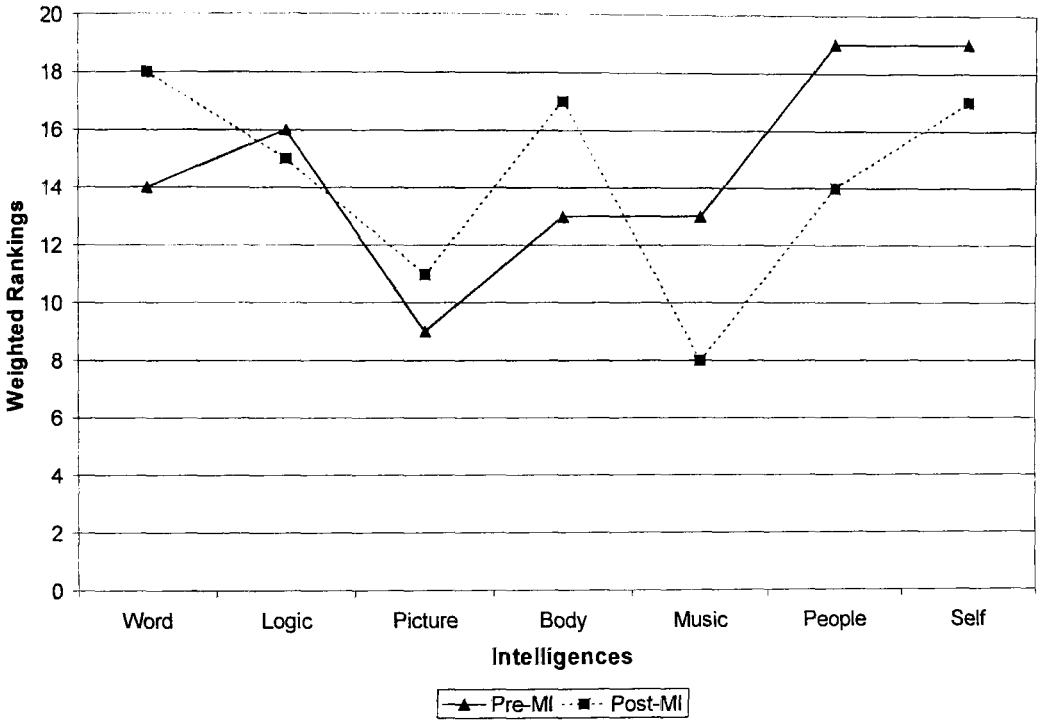

Table 2: Gr. 7 Inventory Comparison

The shift within the intelligences evident in this table was discussed with both Barb and the Grade 7 students. The students commented on their comfort level increasing while working with other intelligences. The introductory activities that were done provided the students with a safe environment in which to experiment with the intelligences. This experimentation carried over into their presentations. Both the students and Barb felt that the distribution had flattened somewhat because of their ability to experiment within other intelligence areas. I thought it would also show flattening but it really didn't. This could be due to the fact that the students were still very excited with the introductory activities. The students' comfort level increased and they were

experimenting in other intelligence areas as a result of this. The peaks and valleys on the graph could be attributed to this experimentation. The nature of the MI inventory is such that if one intelligence area shows strength there is likely to be a drop in another area.

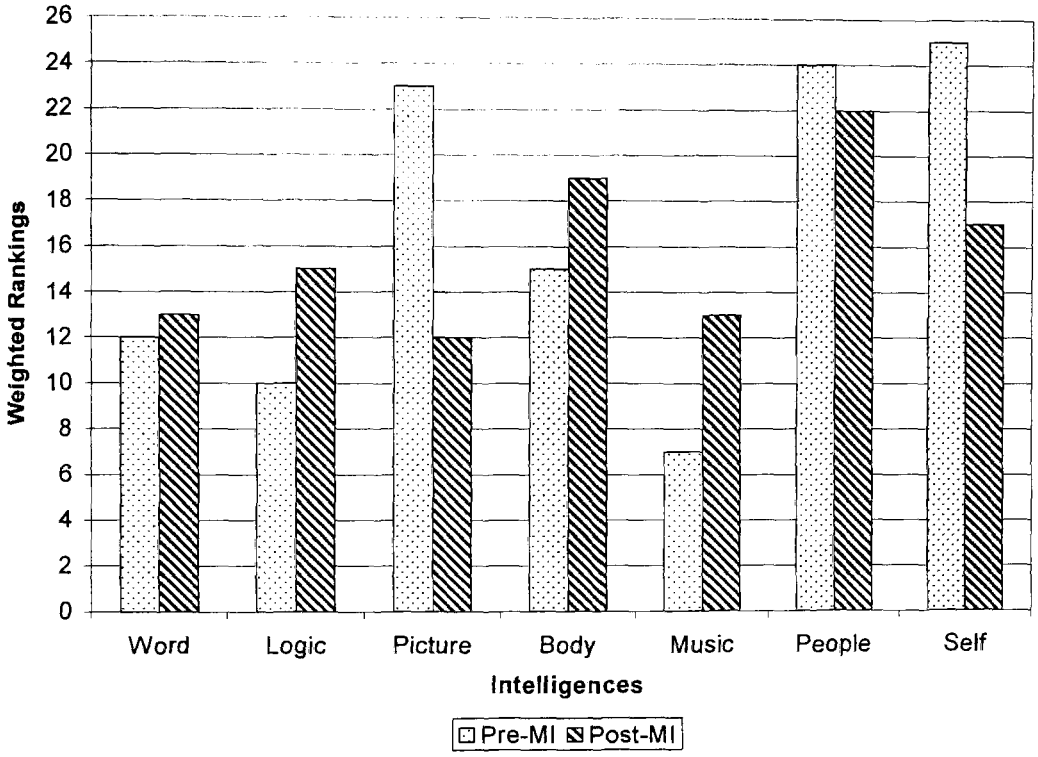

Table 3: Gr. 8 Inventory Comparison

The weighted rankings, pre-MI, for the Grade 8 class also showed overall strength to be within the personal and picture smarts. This supports the literature with respect to the picture smarts but again the personal smarts are very high, which is contradictory to the literature. This Grade 8 class was very conservative with their rankings within the intelligences because of their unfamiliarity with them. There were several comments made during the completion of their inventories that they were "unsure" or maybe only exhibited a particular behaviour sometimes. I had to assure them that it was not an always

or never scenario and that they could check off an item if they felt they demonstrated the behaviour at any time.

With this group of students I expected body smart to be very high because there were a number of athletes in this group. The students may not have viewed their athleticism as a smart during the pre-MI inventory. This once again proved to me that I should not make assumptions about the perceived strengths that students with LD may or may not show. The word and logic smarts were not as high with this group of students so maybe my initial thoughts about what Barb may have done in her classroom were not a factor. The difference in the word and logic smarts from the Grade 7 students could very likely be due to the fact that the Grade 8 students were a totally different mix of abilities and personalities.

The post-MI inventory for the Grade 8 class, as seen in Table 3, showed an increase in body smart. This could be due to the fact that a couple of the students decided to work with role plays for their presentations and now realized that their kinesthetic abilities were actually an intelligence. A couple of them even felt comfortable enough to dance in front of the class. This was a very courageous move for these students and it reinforced the safety that they felt in their classroom. The increase in logic smart could be attributed to the fact that the entire introductory activity to the theory of MI was based on a fraction theme from math. It was interesting that picture smart dropped significantly. Could this be due to the perceptions of the students that they needed visual stimulation to learn and then realized that maybe they didn't? Could this also be attributed to the increased use of music within their poetry unit so that they didn't need to rely on their

picture smarts so much? Students commented on trying other intelligences in their second project and trying to improve on their first presentations by adding a little more variety. More of the Grade 8 students moved into the music smart area with their presentations.

This Grade 8 class was people focused from the very beginning and it was no surprise that the people smart category remained high. Again this was also contradictory to the literature. The personal smarts are not generally recognized as strengths for students with LD. Working with other students was a priority for the majority of these students and only three of the students chose to work individually on their projects.

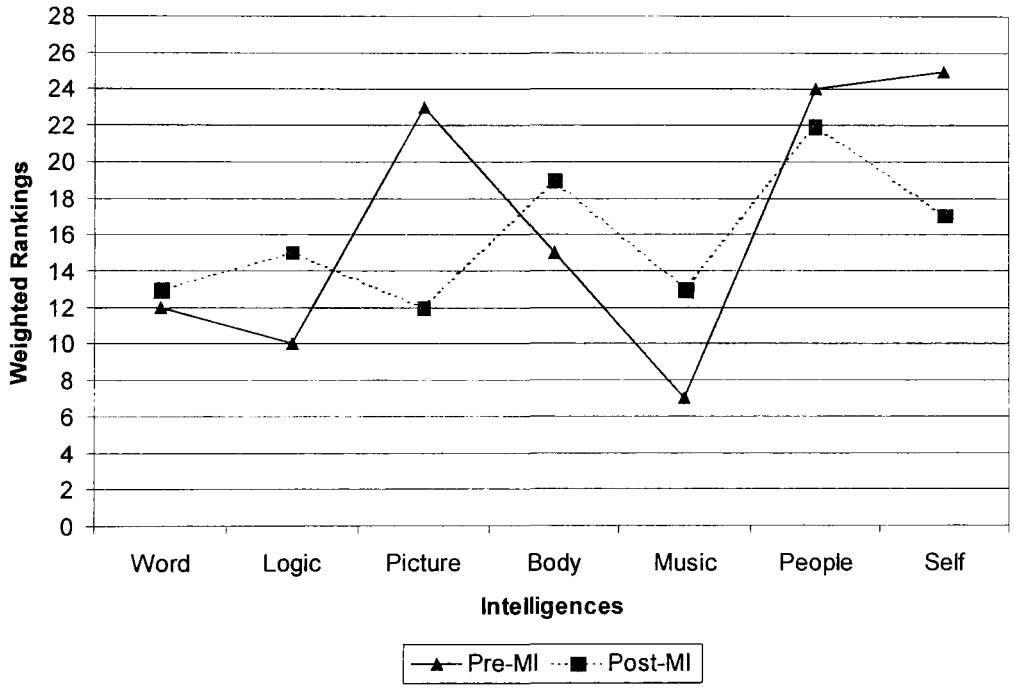

Table 4: Gr. 8 Inventory Comparison

When the pre-MI and post-MI results were compared the pattern that was noticed by all of the students and Barb was a flatter distribution of the intelligences post-MI. This is what I would have expected to happen and it showed more flattening with the Grade 8

students than with the Grade 7 students. I wondered about the flattening as a representation of the overall group of Grade 8 students or if the individual rankings cancelled each other out. As this research project was focused on a group of students I believe there is still room for more research within this area at an individual level.

Some of the Grade 8 students commented that because they had done work in other intelligences they were able to check off more items in those particular categories. The students began to recognize their areas of strength and used their increased confidence to work in other intelligence areas. It was enlightening to see an overall flattening of perceived strengths by the students. They now felt more confident about working within different intelligence areas.

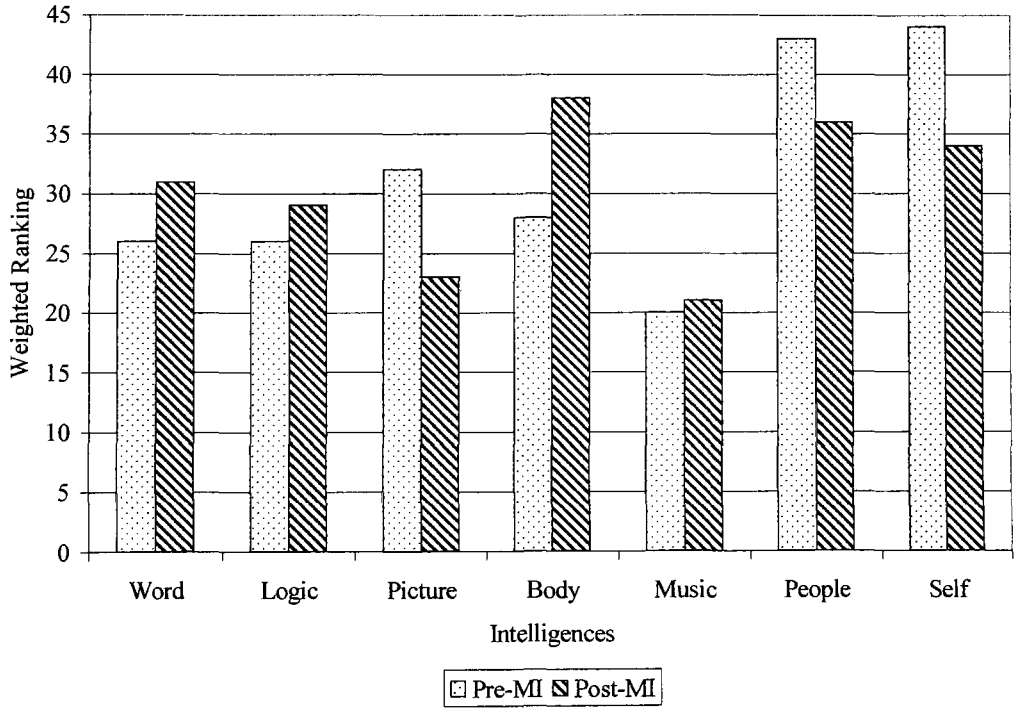

Table 5: Combined Grade Inventory Comparison

When both of the Grade 7 and Grade 8 weighted rankings were combined the classes came out with definite strengths within the personal smarts. Although they decreased a bit, that was to be expected when the students began experimenting in the other intelligence areas. Now the body smart intelligence showed an area of strength. I would attribute this to the experimentation that the students were doing within this area after they realized that it was actually an intelligence. These students were very confident working with their peers and had a high awareness of self. The personal intelligences remained quite high for all of the students throughout the remainder of my research. This was a major contradiction to the literature as explained earlier. Students with LD are generally expected to have high picture and body smarts and low personal smarts. The data from my research shows the opposite and again I question as to why. Were the students learning to use all of the intelligences or was it just that, given the combined groupings, the data remained high in the personal smarts? Did the excitement of using new strategies within a variety of intelligence areas influence the rankings?

As I combined the data from both grades for Table 5 the sample became larger and the data did not give light to the individual. When looking at music smart it evened out when both groups were combined but there was a definite difference when looking at the individual classes. The differences between the Grade 7 and Grade 8 music rankings cancelled each other out so that when the classes were combined it looked like there was no increase or decrease. However, when you look back at the individual classes (see Table 1 and Table 3) there was a definite difference. This is the danger of relying totally on large group data as the individual and smaller group comparisons are not visible.

The interesting findings from this data could indicate that the students, when given choice, experienced a variety of intelligences and thus were able to experiment further within them. My research indicates that the areas of people and self smarts remained relatively high throughout the entire research period. The area of picture smart dropped in weighting throughout the research period, which was contradictory to perceived strengths for students with LD, as mentioned within my literature review in Chapter 2. This comparison also showed some of the successes within my research as four out of the seven intelligences showed an increase in ranking over the nine weeks.

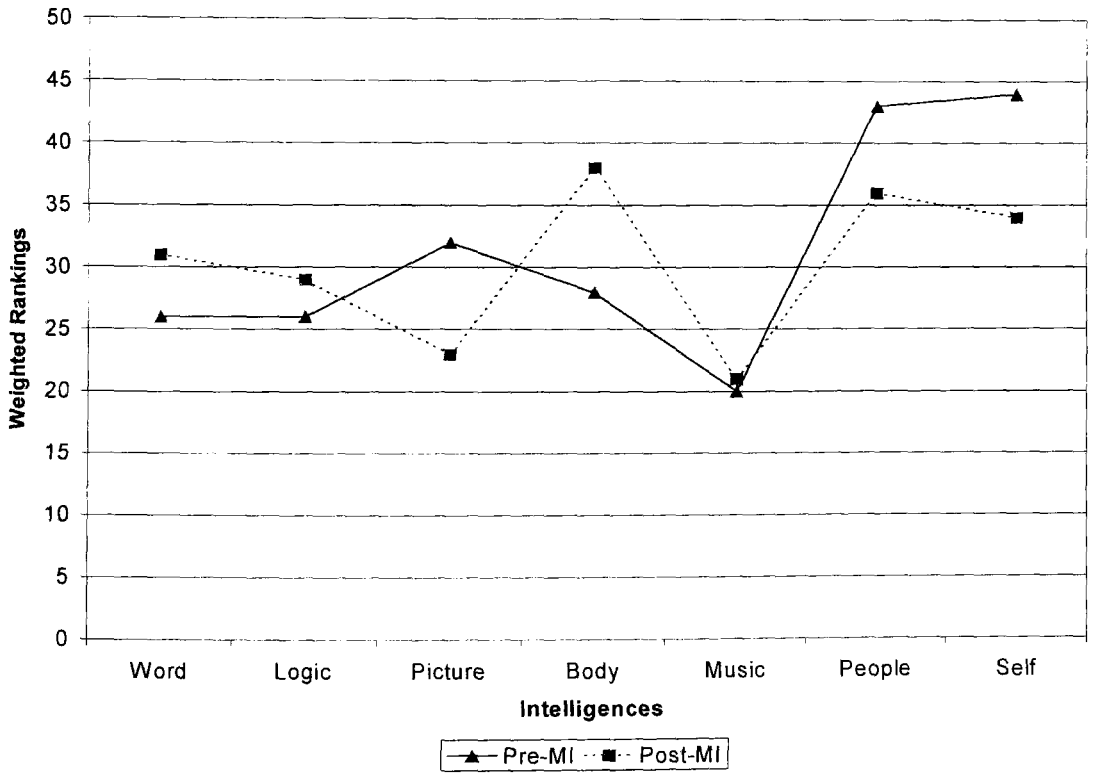

Table 6: Combined Grade Inventory Comparison

Analyzing the data by comparing the combined, weighted rankings of both classes

enabled me to get an overall picture of what was happening within the intelligence areas. The combined weighted rankings, post-MI, revealed some interesting transitions. There was a flattening of the distribution, which could be attributed to the fact that the students were working within a variety of intelligence areas of their own choice. Once they saw one student having success or enjoying working with a particular intelligence they would often try it out to see if they would have similar success. This was particularly evident within body smart activities such as role plays and video productions. This graph also shows the music balancing itself out and, as discussed before, even though the Grade 7 and Grade 8 classes had big peaks within the music smart they cancelled each other out when the classes were combined thus showing a flattening.

The flattening evident in Table 6 is a result of the size of group that was used. I combined both grades so as to have a larger sampling and in doing this there was flattening due to the canceling of each group's peaks and valleys. When I was instructing the students using the theory of MI I was purposely focusing on the group, not the individual, and this in itself had an effect on the data. The higher the number of students the flatter the distribution became. This does not represent the individuals' strengths and weaknesses and this is an area in which more research could be done.

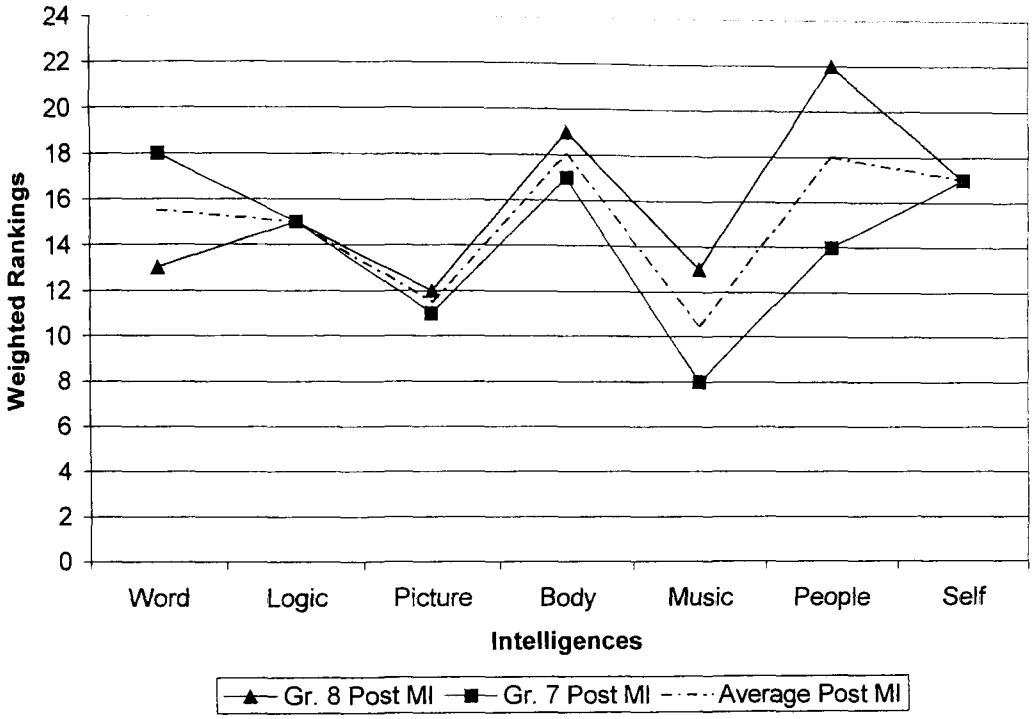

Table 7: Average Post Comparison

By taking the average of the combined weighted rankings, post MI, another visual is presented in order to see the flattening of the distribution. The risks and experimentation that the students were involved in during their presentations could explain the flattening of the distribution. The students became aware of the various intelligences through discussion and use of these smarts in a variety of activities throughout my research. I could see that the students were venturing out of their safety zones within the personal intelligences and this was a very big step for these students. The students were taking risks by experimenting with the other intelligences, particularly with music and body.

In summary the small sampling of students that I worked with during this research project could have contributed to the varying results that I obtained. After averaging their

weighted rankings I was able to provide some data with a larger sample but it was still under twenty students. I would propose that further research is needed in this area with a larger sample to gauge whether or not the indicated areas of strengths hold true for other populations of students with LD. Also, I would question whether it was the inclusion of the theory of MI within this classroom or the fact that the strategies used had an affect on the flattening of the distribution.

As stated earlier my data challenged the literature as I did not find that the picture and body smarts were consistently strong within either the Grade 7 or Grade 8 groupings. I found that the personal smarts were consistently high, which may or may not be attributed to the classroom environment or the individual students themselves. Maybe it was due to the fact that the structure of the classroom was such that discussion, journalling, and reflection was encouraged, so the personal intelligences were given importance. Is this the route that teachers could take to foster success for students with LD? The fact that the word and logic smarts were relatively high with both classes was also contradictory to the literature on students with LD. The word and logic smarts are generally the weakest of the intelligences for these students, yet within my research there was evidence of some strength to begin with. Was this due to individual student strength or classroom environment?

The flattening that was seen with the distributions between the two classes could also be attributed to the overall enthusiasm the students had towards learning within an environment focusing on the theory of MI. This was new to them and they were excited about the possibilities of learning in a new way. The introductory activities negated some

perceptions they held about themselves being in the "dumb class" because they began to realize that what they were good at, whether body, music, or personal, was actually an area of intelligence. The experimentation that the students were encouraged to do could have had some influence on the flattening of the distribution because when they ventured into one intelligence area it generally meant they left another area behind for a while.

The flattening was definitely a function of the size of the group that I chose to collect data on. The larger the group that I collected data on the flatter the distribution became. This was evident as I went from each separate class to a combined grouping of both classes. As I was not focusing on a case study or the individual students there is no representation of individual strengths or weaknesses within my data. This is an area where more research is needed because then dominant intelligences could be noted for each individual; then maybe patterns for students with LD could begin to surface.

Time would also have an effect on the individual and group strengths and weaknesses. As the students were given opportunity to experiment within my research they were not given the luxury of extended time periods to fully delve into each intelligence fully. Would there have been a change in the inventory data had I returned six months later? Would the students have retained any of the knowledge they received about the theory of MI after an extended period of time? Would they still be experimenting within different intelligence areas? Were they given opportunities to do so? Time is a very important factor for any research and I believe that with MI theory and the student with LD extended periods of time would be needed to see any relevant patterns.

I encouraged using a variety of intelligences throughout the activities when I was introducing the intelligences. I also offered examples of how students could use a variety of intelligences in their presentations. As students saw one group trying music as background for their presentations others experimented with it. If one group did a role play to enhance their presentation others discussed how they could incorporate that into their work. Once the students knew that they could try new things, some of them put a great deal of effort into their presentations. This all attributed to the students gaining awareness of their strengths and weaknesses within the intelligences. Student responsibility and ownership towards their learning also increased because of the choices they were given.

Themes from Journal Entries and Interviews

Barb commented on the success that she felt the students had exhibited. She said that some of their L.A. marks had improved, and this occurred during the activities incorporating the theory of MI.

> *They now go to different sources for information. If they can't get the information from the textbook or they can't ask me, which they're used to, they'll go to their friends. They are not just relying on what the teacher said or what the book says. They are naturally asking, "Well can I look this up on the Internet?" (Teacher Interview, May 2002)*

The students commented that within activities focused on the theory of MI they felt they understood things better because they were explained in different ways. They were used to having concepts explained in a variety of ways through the introductory activities that

used the different intelligences. From there I would try to use a variety of intelligences to explain new concepts to them.

Throughout the implementation of my research project I was asking the students to take on a lot more responsibility for their own learning. The students were involved in the planning, initiation, and evaluation of their projects, and this took a great deal of time. Most students are used to being given the information, so this was a very different path for them to travel on. For some of these students this was just the beginning of true ownership and responsibility towards their learning. They were beginning to realize that they had strengths and weaknesses and they could work in a specific way to benefit themselves.

The initial difficulty for the students with LD was in the choice that they were given for their presentations. They were accustomed to only verbal/linguistic presentations or no presentations at all. Now they were given eight different avenues to choose from for presenting their information. Being given this much choice was not something they were used to having.

> *Picking something that means something to you* [is hard]. *(Student Self-Evaluation, April 2002)*

They had difficulties choosing specific intelligences to work or present in, but when it was over they were pleased with their results.

> *I got to do what I loved* [danced]. *(Student Self-Evaluation, January 2002)*
>
> *I learned not to get embarrassed in front of people. (Student Self-Evaluation, January 2002)*

The biggest success within the emotional area was with the use of the student journals. Barb felt that we had made considerable progress within the inter- and intrapersonal intelligences.

> *I think we had a trust already so they expressed* [themselves] *right off the bat because we are more open than regular classrooms. We've had wonderful in-depth discussions since* [your research] *on things where it was not just silly comments...it was in-depth, "How do I feel about this?" (Teacher Interview, May 2002).*

Both classes utilized journals during classtime for specific reflections. The Grade 8 class took the journal writing to a different level when they began to openly share some of their life stories with Barb and me. The journals became a powerful tool of communication in which Barb and I commented.

> *I like the journal writing because it's a chance where we can vent if we have to or write what's on our mind and it feels much better. (Student Interview, April 2002)*

The student's intrapersonal intelligence stayed at consistently high levels as indicated by the MI inventories. I can see how the process of a reflective journal, used as communication between student and teacher, could assist in a student's overall emotional success. This project allowed only for an introduction to the process of self-reflection and journalling. More time was needed to ensure concrete success within this area. Barb, however, was convinced of the success her students had with the activities that focused on the theory of MI.

> *I wish we had just a homeroom and then I would say it's* [MI] *mandatory. You*

need it [MI]. *(Teacher Interview, May 2002)*

Another positive outcome from my research project was the implementation and use of presentations. During the two weeks that I introduced MI vocabulary to the students I worked through all of the intelligences in a presentation atmosphere. With the Gr. 8 students we took a fraction unit out of math and incorporated the theory of MI within it. I took the eight intelligences and showed them how each intelligence could be used to teach fractions.

One example is from the musical intelligence. We went through the actual lesson of time signatures and duration of beat within music. I went through all of the notes and rests within music and gave them their corresponding value. This was a lesson in fractions as a quarter note is worth a quarter of a beat, a half note is worth a half of a beat, and so on. Then we went into addition using musical fractions, i.e.:

quarter note+eighth note+quarter rest+sixteenth note =

(I used the musical symbols for the notes and rests).

After that exercise we played musical instruments to steady beat and did some echoing of rhythms. I would clap a rhythm and the students would echo my rhythm by clapping or playing on their instrument. We discussed how music could be used to enhance a presentation and several students experimented with the musical intelligence during their presentations. There were activities for all of the intelligences that correlated with the mathematical concept of fractions. The students were given a variety of approaches to learn about this particular concept and it became less frightening for some.

During the interviews the students often mentioned that they enjoyed giving the

presentations even though it was quite unnerving for them at the beginning. Almost all of these students were intimidated and unsure about presenting in front of the class at the end of the first project. They enjoyed the presentations and commented that they didn't get to do them in other classes. When asked what they felt was the best part of the project the following responses were given:

> *Hands on stuff, begin able to do projects and presentations. Being able to draw posters. (Student Interview, April 2002)*

Their first presentations were hesitant and scary for them, but all of them stated that the second presentation was not as scary or overwhelming.

> *I learned that if I present once or twice I will get better. (Student Self-Evaluation, January 2002)*

Others mentioned how it got easier to get up in front of people during their second presentation. They even mentioned that they liked to watch themselves on the video afterwards. To me this was an enormous success for these students. By the second presentation I was beginning to see genuine interest by some to improve upon their last performance. To me this showed success within an area that cannot always be assessed by using a standardized test. One comment that was repeated in conversations, interviews, and discussions was that the students felt they had gained confidence in presenting information.

Another area that showed increased awareness was in the students' use of MI vocabulary. Every student was able to use MI vocabulary and explain to me which intelligence area(s) they were good at. Responses during the interviews often included MI

vocabulary with obvious knowledge of what it meant.

> *You have more than one intelligence, you're good at more than one thing like picture smart, body smart, math smart, and kinesthetic. (Student Interview, April 2002)*
>
> *Interpersonal is working with groups, visual/spatial using art, naturalist is being outside and stuff like that. I'm good at interpersonal and I used visual/spatial when I did my project. It was art and I drew a poster. When I helped Sue I did kinesthetic. (Student Interview, April 2002)*

To me these types of comments were markers to determine the success of my research project because I have at least given the students some vocabulary to describe their strengths and weaknesses. Just knowing what they are good at could give them an avenue to travel on to pursue future success.

> *I'm comfortable in body smart and musical and interpersonal and I try to do some drawings and that, to get out of what I'm comfortable in, so I can learn more. (Student Interview, April 2002)*

Trust between all participants in my research project was vital to its success. The students needed to trust that I would not divulge any information that they were comfortable sharing with others. The behaviour incidents often involved issues of trust because of the very nature of the behaviour disruption, so the students needed to feel secure that I wouldn't break their trust. One of our introductory activities in the bodily-kinesthetic areas relied heavily on trust because one partner was blindfolded and then taken on a sensory walk.

I could see that some were uncomfortable with the "trust" issue that was brought up between partners. Some of the leaders had difficulty keeping their "blind" person safe as they were falling off risers in the band room or walking into things. (Journal, January 2002)

Creating a safe and secure environment for learning was established from this trust activity. A great deal of trust had already been established between Barb and her students; now I was the new person on the block. I was asking them to move out of their safety zone and present in front of the class. This would entail speaking out in front of others and offering some sort of a visual aid. I tried to foster an atmosphere in which each student felt safe enough to take this risk. During the initial two weeks in the classroom I observed the students, answered their questions about the theory of MI, and offered my assistance with their lessons. They were beginning to see me as a part of their classroom.

Behavioural issues took up a great deal of class time during this research project. The Grade 8 students were more difficult to manage than the Grade 7's because of the group dynamics. There were many vocal leaders within this group that often competed for full attention. The teaching and learning that was happening in this classroom sometimes became very life oriented with focus on conflict resolution and appropriateness of behaviours and comments. At times students' personalities became their greatest enemy, as they couldn't relate to the differences.

I lip the teachers too much because I get so frustrated and angry but I don't know why I take it out on them. I don't do what I'm asked or sometimes even forced to do. (Student Journal, January 2002)

Behaviour contracts and expectations are issues that need to be addressed within any class but even more so within a class focused on the application of the theory of MI. There was so much group work and independent projects going on that the students need to be practiced in the routines and expectations. Having a classroom where responsibility and ownership is fostered could allow for some of these issues to be addressed. I don't feel that we had enough time to really discuss the ones that were a priority for these students.

During the one-on-one conversations, while viewing their presentations, the students could open up and discuss their behaviour toward and around others. This became a very valuable time for us to share observations about appropriate and inappropriate audience skills and discuss possible solutions for next time. Had the students been given the opportunity to work in this type of an environment for a longer period of time, I believe some of the behaviour concerns could have been eliminated. Self-reflection and having the ability to vocalize concerns with others is done within the personal intelligences and this type of practice could enhance a student's awareness of responsible behaviour.

When Barb and I observed social interactions it became evident that some behaviour issues were greatly affected by the use of some of these activities. The amount of choice that the students were given with regards to their projects was not something that they were used to and sometimes this prompted unrest. Barb and I became sounding boards for ideas as the students worked their way through the process of coming up with meaningful ideas that would work within their areas of strength and weakness.

The issue of time constraints had a definite impact on my research. With the strike taking four weeks out of the school schedule there was a great deal of restructuring within HUB, and I was not able to devote as much time to the project as I would have liked. Barb and I discussed the time constraints and how it affected our ability to build an environment conducive to incorporating the theory of MI.

> *We didn't have the time to build routine and structure within MI because there are specific structures that are put in place but we were very time constrained. (Teacher Interview, May 2002)*

The structures that Barb referred to were the routines of project planning that the students went through before every project. During this time the students decided on which intelligence areas their project would focus on, and they were to come up with some ideas as to how they could accomplish this. This initial planning was very important to the success of incorporating the theory of MI into their projects. Time to practice this process, self-evaluate their successes and weaknesses within this area, and to discuss their choices with the teacher were all important parts of the structures and routines within a classroom using the theory of MI. The students were introduced to these structures and routines but inevitably were not given sufficient time to truly absorb them.

Also, the routine of completing the self evaluations, rubrics for the projects, and the project contracts themselves needed more time in order for the students to become familiar and comfortable with them. This paperwork that was an integral part of incorporating the theory of MI into the classroom took up a great deal of time in the beginning weeks. The students were familiar with the steps and procedures but still

required assistance in completing their contracts and self-evaluations. I feel that if they were given more time within this environment the time needed to focus on this assistance could have been lessened.

After the strike there was a feeling of anxiety for all parties involved in the research project because of the uneasiness left over from the time away from each other. This was understandable as there was still curriculum to be covered and there was now a sense of urgency. Students and teachers were not completely satisfied with the outcome of the strike, and it cast a shadow on my research project that prompted me to probe deeper into the tensions that the strike created for all parties. This highlighted for me the fact that the "unplanned" curriculum (Aoki, 2000) is ever-present in research. The shadows were really more questions that I was asking myself in order to try and make sense of the strike and the impact it had on my research. It opened new avenues of reflection and analysis and resulted in a shift as to how I looked at my research. I had made an impact within this classroom even if my time was limited. I had made connections with the students and the teacher that would account for something. My research was becoming valuable to me in the sense that I was looking ahead to possibilities for future research.

My initial plan for this research project was to be within this classroom from January until June, but my reality became nine weeks. My total time within the classroom was a lot shorter than anticipated, but I believe that the students took away a positive experience with them. There was not one student who did not enjoy at least one aspect of the experiences that I was able to bring to them by introducing them to the theory of MI.

During the interviews the students were asked what they liked the best about the activities. One student responded:

> *It was fun 'cause we got to do presentations and things like that, play games. (Student Interview, April 2002)*

This confirmed that the students not only enjoyed the opportunity to work with the theory of MI but that there was a possibility that some of the experiences would be remembered.

Chapter 5: Conclusion and Implications

We are not the same; we do not all have the same kinds of minds; and education works most effectively if these differences are taken into account rather than denied or ignored... educators need to take differences among children seriously, share knowledge about differences with children and parents, encourage children to assume responsibility for their own learning, present materials in such a way that each child has the maximum opportunity to master those materials, and to show others and themselves what they have learned and understood.

—Howard Gardner

Implications for Professional Practice

From the first day that I decided to focus my research on the theory of MI and students with LD, I was convinced that incorporating MI theory into the classroom would be one of the best ways to reach these students. I am not convinced that my research positively reinforces this conclusion but it definitely gave me some insight into how a student with LD can become successful using MI theory. I witnessed these students take risks that they would not normally take in a routine classroom.

> *They all got their confidence up because they knew they were good at something that somebody else wasn't. (Teacher Post-Interview, May 2002)*

I was privy to successes both on an individual and small group basis. The student talk that surrounded the projects and presentations was positive, and the students asked about presenting even after my research was finished.

When I analyzed the data collected from inventories, journals, conferences, and interviews it became quite evident that there were contradictions to the literature that I had reviewed (see Chapter 2). The biggest contradiction was within the areas of perceived strengths for students with LD. The literature repeatedly stated that the visual

and kinesthetic intelligences would be relatively high for students with LD. My research found that the personal intelligences were high for both the Grade 7 and Grade 8 students. As discussed in Chapter 4 the reasoning for this could be due to a number of factors ranging from classroom environment, opportunity for experimentation and sharing within certain intelligences, to the individual makeup of the students. My research raises questions within this area and more research needs to be done with the theory of MI and students with LD to ascertain whether or not the results I received are indicative of all such students.

Another area within my research that was contradictory to the literature was the strength that was evident within the verbal-linguistic and logical-mathematical intelligences. It would be expected that these areas would be quite weak for students with LD, yet my data showed strength in these areas with both the Grade 7 and Grade 8 students. Again I would question whether or not classroom environment, teacher emphasis, or individual student profile had influence on this.

One area that could strengthen my research would be to look at the individual intelligence profiles in more detail. In this way I could determine whether or not there are true intelligence strengths or weaknesses for students with LD as stated in the literature. I did not focus on individual intelligence profiles and I can see that this would be an area that more research could be done in.

As I moved from the Grade 7 and Grade 8 classes to a combined weighted ranking there was a flattening of intelligence distribution, but again this did not take into account the individual differences. The larger the sampling the flatter the distribution and

as I combined the classes flattening occurred. This flattening could be attributed to the use of a variety of intelligences and because of the enthusiasm generated during the introductory activities. The individual intelligence profiles with their peaks and valleys also need to be considered because they cancelled each other out once they became part of a larger group. This was discussed in Chapter 4 within the musical intelligence. The students were experimenting in other intelligence areas but did it mean that they were gaining strength within that area?

My initial proposal was to be in the HUB classroom for an extended period of over ten weeks. The interruption that the strike caused was indeed part of the "unplanned" curriculum (Aoki, 2000) experienced in a classroom.

> *I'm really tempted to just hold off until next year when I have a class of my own. (Journal entry, Feb. 2002)*

Although this was not my "planned" curriculum it was curriculum all the same. The irony that the strike imposed upon myself and my students was that one of the "causes" for which I was striking was that which was being affected the most; my time in the classroom. The students' classroom environment, and the interaction between student and teacher were all issues that were brought up during the strike. This interruption within my "curriculum-as-planned" became a catalyst for my realization of the importance of the "curriculum-as-lived" (Aoki, 2000). The experience of the strike became a lived experience that shaped my research in ways I had not envisioned at the onset.

The tension that developed as the strike continued became a place of learning. I used this time to reflect upon myself as a teacher/researcher. I became increasingly aware

that interruptions in the classroom happen daily with attendance, announcements, knocks on the door, fire drills, protocol 99 drills (practice evacuation and lock down procedures for extreme emergencies), assemblies, illness, absence, professional development days, and interactions between myself and my students. This complexity is an integral part of the school day and yet I thought the strike was an interruption. I was "caught in a struggle midst difficulties, nonetheless, a place of hope, of generative possibilities" (Aoki, 1997). The multilayeredness of a school day adds to the environment for learning and that realization became clearer as the strike continued.

As my timeframe during this particular study was shortened I am prepared to say that an extended study still needs to be done in this area. The data that I gathered during my nine weeks in the classroom just tapped the surface of how utilizing the theory of MI can truly impact students with LD. If I was given the opportunity to work with these students over an extended period of time would I have noticed an increase in the use of a variety of intelligences or would they have returned to those that encompassed their strengths? Gardner (1983/1993) believes that people use the intelligences that they are good at and that bring them success. This is the premise behind using MI theory: to teach to individual strengths in order to minimize the weaknesses.

Having the theory of MI in place within a classroom where students are given the opportunity to be a part of the planning, implementation, and assessment is integral in order for students with LD to experience success. Students are essential to any program planning if they are to take ownership and responsibility for their own learning. Having students involved in their learning process is a contribution that the theory of MI could

make to a classroom. Students can become very aware of their strengths and weaknesses once they are involved with MI theory. How teachers use this information could determine whether or not students with LD experience success.

Where to Go From Here

My next step would be to implement the theory of MI into my own classroom situation and document the process over an extended period of at least one full school year. Were my questions answered? For now I feel that I have only touched the surface and have not fully answered any of the initial questions brought forward in this project. Was there success for the HUB students? I believe there was but not to the degree that I had hoped. The time constraints and outside influences, such as the teachers' strike, made it such that I did not have the liberty of time with this group of students. This will be addressed in future research projects that I will pursue in my own classroom. Is the theory of MI a useful program for students with LD? I believe so because the students that I worked with were able to make connections between the MI vocabulary and their own areas of strength and weakness. The students could now pinpoint the specific areas that were a part of their successes and weaknesses. They could verbalize to others the areas that they needed to work on and they became aware of the diversity of those around them. Despite the short amount of time with the students there was a beginning awareness towards the theory of MI. Any program that can help students identify their own areas of need will assist in bringing them closer to success. As stated earlier most people want to experience success and this is no different for students with LD. Working within a variety of intelligences could allow these students to discover success in their areas of strength.

The biggest achievement that I believe came out of this study was that giving students choice and voice added to their overall success. When the students were given ownership for their learning by being able to choose the path they would use for presentation, most of them became truly involved in their learning process. The students often started to work within their areas of strength but because they were seeing others take risks into other intelligence areas they would often experiment with them too. This became especially evident within the musical intelligence when other students or myself showed them how it could be successfully incorporated into their presentations.

Ultimately the students became very aware of their own areas of strength and weakness and were given a vocabulary that enabled them to share with others. They were becoming aware of the diversity of individuals and how each person has their own inherent strengths and weaknesses. Some of the students began to feel they had something to offer others because they were aware of their different intelligences instead of only one intelligence. This could be seen as development towards becoming a global learner as the students began to see those around them in a different light. Appreciating these differences and understanding them is a step towards deeper understanding. This could not only widen their view of themselves but also of those around them.

Do the students have something concrete to carry with them to their next grade? I believe they do if they can remember their strengths and weaknesses and how they can work with them to foster continued success. Students took more risks with the second presentations, especially within the musical intelligence. As the second presentation focused on poetry the musical intelligence fit in quite nicely to some of their projects.

This type of experience will be easy for them to remember because for most of them it was a huge risk and they were successful at it.

My research, as a living practice, allowed me to look at my own expectations regarding myself as a researcher/teacher/learner; these are intertwined with personal, social, and cultural assumptions about how I should conduct myself and my work. I now have a new image of how I see myself within the various roles I have taken on. I don't see myself as the giver of information but as a guide to allow students to explore their own avenues of interest and strength. I continue on the path of a researcher within my own classroom, my new school community, as well as with my new students while being a teacher within the context of the role given to me by Alberta Learning.

Carl Leggo (2002) speaks about a space of ecotone – a place of tension – in which the worlds of the teacher and the student overlap. This tension is not negative but productive, a place of possibility, and complexity. When I teach in this ecotone I am being shaped each day that I walk into my classrooms. I find this reference comforting as it creates a connection to the naturalist intelligence. I continue to explore the avenues of the theory of MI and strive to reach my students in as many different ways as possible within the ecotone that we share.

I continue to be a learner as I continue my own professional development. This process has given me insight into my role as a teacher/researcher, and it is this role that continues to ground me in my pedagogical approach to teaching. The importance of maintaining the researcher/teacher/learner relationships within myself will strengthen me in all areas. This will ultimately carry over into my classroom where my students will get

the benefit of the lived experience of action research in my daily practice. This research project was just the beginning of a long relationship between the roles I have embraced.

The personal, social, and cultural assumptions that are placed on myself also blend together to assist in my metamorphosis towards becoming a master teacher. My experiences with the theory of MI reinforce for me the importance of giving students choice in the activities that they are engaged in as well as of how they are going to share their understanding and knowledge of concepts with others. The theory of MI can be used within any classroom without any special resources or equipment. The students bring with them a multitude of experiences, knowledge, and questions and through the theory of MI these can be explored, tapped into, and shared.

Embarking on an action research project allowed me to question assumptions of my teaching/living practice. I set my own goals, within my own classroom, and they will ultimately impact my students. I make assumptions on what I believe should happen in my classroom and teach accordingly. There are social and cultural assumptions made with regards to teaching and being a teacher that I live with everyday. My responsibilities as a teacher or coach are brought forward in everyday conversations. During this particular time in Alberta these assumptions are being challenged and affect how I teach and live.

This action research project gave me a starting point to strengthen my own practice in ways I had not considered before. I have not finished my research within the theory of MI and the student with LD. My action research continues as I strive to find situations wherein I can experiment further with the thoughts, ideas, and strategies put

forth in my research. I continue to use presentations with a focus on the theory of MI in my current classrooms. I can see my students grasp opportunities to shine within their areas of strength. I have witnessed students with LD take risks and present in front of the class instead of quietly opting out. My research as a living practice continues as ongoing action research that is integral to my classroom. My journey continues with my students as, together, we strive to find meaning in life itself.

Appendices

Appendix A: Multiple Intelligence Inventory

Seven Smarts Checklist

1. ____ I am a good writer.
2. ____ I tell jokes and stories.
3. ____ I remember things I hear or read about.
4. ____ I enjoy word games.
5. ____ I enjoy reading good books.
6. ____ I am a good speller.
7. ____ I like things like rhymes and tongue twisters.
8. ____ I like listening to stories, talking books, and television.
9. ____ I know lots of words and use them.
10. ____ I like to talk and listen to other people.
11. ____ I ask a lot of questions about how things work.
12. ____ I can quickly answer math questions in my head.
13. ____ I enjoy math class.
14. ____ I like to play math computer games.
15. ____ I like playing games where you have to think a lot.
16. ____ I enjoy working on puzzles or brain teasers.
17. ____ I am good at putting things into groups.
18. ____ I like to try out different way of solving problems.
19. ____ I am a good thinker.
20. ____ I know what will happen if I do something.
21. ____ I tell others the pictures I see in my mind.
22. ____ I can read maps, charts, and diagrams easier than printed things.
23. ____ I daydream more than other kids.
24. ____ I draw better than other kids.
25. ____ I enjoy art activities.
26. ____ I like to look at television, movies and slides.
27. ____ I enjoy doing things like puzzles and mazes.
28. ____ I build interesting things with Lego and blocks.
29. ____ I learn more from pictures than from words when I read a story.
30. ____ I like to doodle.
31. ____ I am good at one or more sports.
32. ____ I move, tap or fidget when I sit in one place for a long time.
33. ____ I can imitate other people's movements and actions.
34. ____ I like to take things apart and put them back together.
35. ____ I like to touch things that I see.
36. ____ I enjoy things like running, jumping and wrestling.
37. ____ I am good at crafts and printing.
38. ____ I am good at using my body to express myself.
39. ____ I have different physical feelings while thinking or working.
40. ____ I enjoy making things with my hands.

41. ____ I know when music sounds off-key or annoying.
42. ____ I remember melodies of songs.
43. ____ I have a good singing voice.
44. ____ I play a musical instrument or sing in a choir or a group.
45. ____ I use rhythm when I speak or move.
46. ____ I hum to myself without knowing it.
47. ____ I tap rhythmically on the table or desk when I'm working.
48. ____ I am good at hearing the sounds around me.
49. ____ I like it when I can listen to a piece of music.
50. ____ I sing songs that I have learned.
51. ____ I enjoy getting together with other kids my age.
52. ____ I am a leader.
53. ____ I give advice to friends who have problems.
54. ____ I know a lot about what goes on in the world around me.
55. ____ I belong to a club, social group, or organization.
56. ____ I enjoy teaching other kids.
57. ____ I like to play games with other kids.
58. ____ I have two or more close friends.
59. ____ I care about how other people feel.
60. ____ I think that other kids like to be around me.
61. ____ I like to be independent and decide things for myself.
62. ____ I know my own strengths and weaknesses.
63. ____ I do well when I'm left alone to play or study.
64. ____ I live and learn in different ways than my friends.
65. ____ I know what to do when I'm asked to do something.
66. ____ I have an interest or hobby I don't talk much about.
67. ____ I prefer to work alone rather than with others.
68. ____ I know how to tell people what I feel.
69. ____ I can learn from what I do well and from my mistakes.
70. ____ I feel good about myself.

The Seven Smarts

Word Smart	1-10	_____
Logic Smart	11-20	_____
Picture Smart	21-30	_____
Body Smart	31-40	_____
Music Smart	41-50	_____
People Smart	51-60	_____
Self Smart	61-70	_____

Appendix B: Interview Guidelines

Student Interview – Post.

1. Can you describe what you're really good at?

2. Can you describe what frustrates you?

3. When have you noticed that you take more risks with your learning?

4. Do you feel you benefit from being in the HUB program?
   IF YES – In what way?
   IF NO – What do you think would work better?

5. Do you use any other strategies to help you understand concepts?

6. How involved are you with your program planning?

7. Have you ever used goal setting?

8. Are you familiar with the term Multiple Intelligence?
   IF YES – Where did you hear of it? How extensive is your knowledge of it?
   IF NO – Can you think of any reasons why?

9. Have you noticed any differences in your learning using MI theory?
   IF YES – What would you consider the biggest change?
   IF NO – Can you think of any reasons why?

10. Have you noticed any success with your:
    Academic achievement?
    IF YES – Can you pinpoint any particular reason why?
    IF NO – Can you think of any reasons why?

Social interactions?
IF YES - Can you pinpoint any particular reason why?

IF NO – Can you think of any reasons why?

Emotional behaviour?
IF YES - Can you pinpoint any particular reason why?

IF NO – Can you think of any reasons why?

11. What has been the best part about being part of this study?

12. What has been the worst part about being part of this study?

13. Are there any areas you would like to elaborate on?

14. Do you have any questions of me?

15. Would I be able to contact you if further questions arose after I transcribed this interview?

Thank you for sharing your time and responses with me. I really appreciate you helping me in this way.

TIME CHECK: _____

Respondent _____

Class _____

Date _____

Tape # _____

Teacher Interview - Pre

1. Could you please state your name, position, and years of teaching experience.

2. Over what grades and curriculums have you taught?

3. What are your years of teaching experience with students with learning disabilities (hereafter, LD).

4. What is your definition of LD?

5. Can you describe your most and least successful practice(s) with students with LD.

6. When have you noticed students with LD taking more risks within their learning?

7. Have you heard any comments from other teachers regarding your students with LD and their ability to work within other environments successfully?

8. Is there another way that you feel would be beneficial to teaching students with LD?

9. Have you noticed students with LD using any other strategies to help them understand concepts?

10. Are you confident that the student with LD can make gains within the public school system?

11. Do you do your planning for your students with LD in collaboration with others?

12. Do you find that the parents of the students with LD are willing participants in their program planning?

13. How involved is the student with LD in their own program planning in your classroom?

14. Have you ever used goal setting with students with LD?

15. Are you familiar with Howard Gardner's theory of Multiple Intelligence (hereafter, MI)?

16. How extensive is your knowledge of it?

17. Have you ever used MI theory within your classroom?

18. Are there any areas you would like to elaborate on?

19. Do you have any questions of me?

20. Would I be able to contact you if further questions arose after I transcribed this interview?

Respondent _____

Years Experience _____

Date _____

Interview # _____ Tape # _____

Teacher Interview – Post

1. Do you feel more knowledgeable within the area of MI theory since January?
   IF YES – In what way(s)?
   IF NO – Can you think of reasons why not?

2. Do you feel comfortable with continuing the use of MI theory in your classroom?

3. Would you recommend the use of the theory of MI with students with LD?

4. Have you had any comments from your students regarding the use of MI theory within the classroom?

5. Within your classroom would you say that MI theory has helped your students with LD to succeed?
   IF YES - In what ways?
   IF NO – Can you think of any reasons why? Is there anything more you may want to try differently?

6. Have you noticed any differences with your students with LD with the use of MI theory?
   IF YES – What would you consider the biggest change with your students with LD?
   IF NO – Can you think of any reasons why?

7. Have you noticed any gains with the students with LD:
   Academic achievement?
   IF YES – Can you pinpoint any particular reason why?
   Was it the use of any particular intelligence?
   IF NO – Can you think of any reasons why? Is there anything more you may want to try differently?

8. How do you feel about students with LD being involved with their program planning now?

9. How do you see yourself using goal setting with your students with LD?

10. Have you noticed any gains with the students with LD:
    Social interactions?
    IF YES – Can you pinpoint any particular reason why? Was it the use of any particular intelligence?

    IF NO - Can you think of any reasons why? Is there anything more you may want to try differently?

11. Have you noticed any gains with the students with LD:
    Emotional behaviour?
    IF YES - Can you pinpoint any particular reason why? Was it the use of any particular intelligence?

    IF NO - Can you think of any reasons why? Is there anything more you may want to try differently?

12. Have any of your colleagues expressed interest in MI theory?

13. Are there any areas within MI theory that you would like more information/assistance on?

    Thank you for sharing your time and responses with me. I really appreciate you helping me in this way.

14. Are there any areas within the theory of MI that you feel are particularly beneficial to students with LD?

    TIME CHECK _____

15. Is there any way that you see MI theory as being more or less beneficial within a classroom?

16. Are there any areas you would like to elaborate on?

    Respondent _____

    Years Experience _____

17. Do you have any questions of me?

    Date _____

    Interview # _____ Tape # _____

18. Would I be able to contact you if further questions arose after I transcribed this interview?

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