Meg Costanzo

ABSTRACT

Meg Costanzo's primary research concern is how to identify her students' strongest intelligences through an MI assessment in order to guide their learning process. She begins her AMI journey by reflecting on her own intelligences and is then inspired to "encourage students to go through the same type of reflective process." In her small, rural program where learners prepare to take the GED or work on a task-based diploma program, Meg develops an assessment students can use on their own. She then encourages her students to explore their intelligences in greater depth through weekly dialogue journals.

She discovers that "students appreciate having their intelligences acknowledged and valued. Many have never had the opportunity to claim their intelligences before this experience." Meg believes this deepened self-knowledge has served to increase her students' self-confidence which, in turn, increases the students' willingness to experiment with non-traditional learning strategies. However, she also emphasizes the importance of providing repeated exposure to MI-based learning activities and strategies. Meg documents how she has infused her teaching with MI-based approaches, especially project-based learning. Several quotes from her students substantiate her finding that "adult students are enthusiastic about real-life projects and are willing to take a role in how their learning programs are designed." Meg concludes that working from their strengths leads students to think more readily "outside of the box" and to become better and more confident problem-solvers.

Meg Costanzo

RESEARCH CONTEXT

I teach an evening Adult Basic Education (ABE) class at The Tutorial Center in Manchester Center, Vermont. To understand our learning center, you need to know something about our community. Located in southwestern Vermont in Bennington County (population 36,000), the Town of Manchester has a population of about 3,600. The area's two largest industries are tourism and retail trade, two sectors of the economy not traditionally known for creating high paying jobs. Manchester is also a popular retirement spot for out-of-staters. It is an area of contrast, with many very expensive estates and upscale neighborhoods, interspersed with pockets of poverty, especially in the outlying rural settings.

My students have ranged in age from 16 to 54. The overwhelming majority are white, female native Vermonters. Most are working in service-oriented occupations; some are staying home to raise families. When asked about their interests and hobbies, my students generally list outdoor activities, natural science, animals, crafts, and family. Adult students come to The Tutorial Center to prepare for the GED tests or to earn a high school degree in the Vermont Adult Diploma Program (VADP). Since we have an open enrollment policy, they can enter the program whenever they wish and remain until they have met their educational goals. This means some students are in the class for a few weeks, while others register for a year or more, depending on their academic abilities. GED students follow a prescribed course of study developed around the tests they need to pass. VADP students work on basic competencies, write autobiographical essays, and work independently on a set of skills assigned by the state. This means that on any given night, each student might be working on a different assignment. Some students may just be beginning the program, while others are in the final stages of completing their work. The program is one that demands a great deal of flexibility on the parts of both the students and the teacher.

How can teacher and student, working collaboratively, a. identify the student's strongest intelligences through MI-based assessment and classroom activities? b. use the understanding of these intelligences to guide the learning process

RESEARCH QUESTION

> *Intelligence is the ability to solve a problem or to make something... carry something through to completion... being able to do something which is valued in at least one culture or community... There are abilities which either are or are not valued. If they are valued, we call them intelligence; if they're not, then we just ignore them.*
>
> **Howard Gardner, Ph.D.**
> Address to the New England Conference on Multiple Intelligences in ABE and ESOL
> *Boston, MA – December 3, 1996*

In my first teacher journal entry, written a month after hearing Gardner's address, I commented on how this definition had influenced me as I formulated my research question. From my twenty-three years of experience as an elementary school teacher of grades three to six, I knew the potential educational value of a project-based curriculum – increased participation and engagement in learning and opportunities for students to develop a wide range of skills while displaying their knowledge in a variety of ways. My initial research question reflected my desire to adapt those project-based classroom units and activities that I had found so successful with elementary school students to ones that would interest adult learners.

In *The Art of Classroom Inquiry*, Hubbard and Powers state "…many teachers have to do some wandering to get to their wonderings" (1993, p. 3). This was certainly the case in my research attempts. When I first applied to participate in the Adult Multiple Intelligences (AMI) Project, I was interested in researching how MI theory could inform the teaching of mathematics in adult learning contexts. While at the Institute in December of 1996, I changed the focus of my research to reflect my interest in project-based curriculum. My question then read, *"How can MI Theory guide the development of project-based learning activities that are designed to address the needs and interests of ABE students? b) What skills will be developed in the process and how can they be demonstrated in a résumé?"*

My teacher journal entries from the early months of 1997 chronicle my growing frustration as I attempted to implement my first research action plan. I expressed concern over student attendance, the resultant lack of continuity in lessons, and my inability to gather data relevant to my question. The program's open enrollment policy proved to be a major stumbling block in completing the long-term project work I assigned. Students simply did not stay in the program long enough. One group of students was often left to finish the work of others, and I found that the new students experienced difficulty motivating themselves to complete projects in which they had made no initial investment.

Hubbard and Powers also maintain that classroom inquiry often starts "…with a feeling of tension" (1993, p.3). My level of anxiety mounted steadily. By the end of March 1997, I realized that although I still believed in the advantages of organizing my class around a project-based curriculum, if I were to continue as a participant in the AMI Project, I would have to modify my question. I decided to return to my original area of interest – how MI theory could inform mathematics instruction. Feeling that this might be too limiting, I broadened the area of inquiry to address the learning process in general. This gave me more latitude should the composition of my class change.

In April of 1997, I rewrote my research question and action plan to reflect a shift from group activities to ones where individuals could proceed at their own rate, while still participating in group projects that were more short-term in nature: *How can teacher and student, working collaboratively, a. identify the student's strongest intelligences through MI-based assessment and classroom activities? b. use the understanding of these intelligences to guide the learning process?*

EVOLUTION OF MY WORK AND THINKING

> *I do not know whether the personal intelligences – or indeed any intelligences – have any absolute priority….But certainly I find the personal intelligences the most intriguing and challenging ones; they tell us the most about other cultures; and, of course, they tell us the most about ourselves.*
>
> **Howard Gardner**
> in *Succeeding With Multiple Intelligences*
> (Boggeman et al., 1996, p.viii)

In December 1996, I began my participation in the AMI Project by reading two books simultaneously, *Frames of Mind*, by Howard Gardner, and *Seven Kinds of Smart*, by Thomas Armstrong. These two markedly different pieces of literature served as a foundation for my understanding of MI theory. In reading *Frames of Mind* I developed an awareness of the scope of Gardner's research and was particularly impressed by the numerous criteria he used to isolate and identify each intelligence (1983). Armstrong's book provided a way for me to move from Gardner's realm of the theoretical to the practical. In *Seven Kinds of Smart* Armstrong encourages the readers to:

a. examine their own abilities as learners.
b. celebrate their strengths.
c. investigate their hidden intelligences.
d. be optimistic about overcoming their weaknesses (1993, p.23-24).

It was during this phase of my research that I spent a lot of time in self-reflection regarding my own MI profile. While the books and articles that I have read helped to give me a foundation for understanding the theory, my own understanding of MI came about through my experiences in applying the theory in practice and my attempts to understand my own intelligences, as well as the intelligences of others whom I know well. These latter efforts probably gave me the most insight into what Gardner was trying to prove in his writings.

I spent a lot of time thinking about my childhood and the things that stood out in my mind – the types of toys with which I enjoyed playing, the activities in which I took part, the school subjects in which I excelled, my relationships with others. I began to reflect on the significance of these memories. These, among many other recollections, gave me an inkling to my own intelligences profile.

Then I started to think about something that I enjoy doing as an adult, something in which others

also recognize my expertise. On March 12th, I shared my reflections with Julie Viens, one of the AMI Research Project Co-Directors, by e-mail.

> *I also tried assessing my own intelligences in light of something I enjoy doing as an adult. I spend some of my leisure time doing counted cross stitch. I don't know how familiar you are with this craft, but, understandably, it is the kind of needlework that will drive some people out of their minds. Nonetheless, I enjoy it, but why?*

At the end of my musings, I concluded my thoughts with this observation:

> *Intrapersonal - This is my favorite area upon which to reflect. I call my work on these projects 'cheap therapy.' While I am stitching I can focus on those things about which I want to think and block out everything else. I make most of my big decisions this way. New ideas and approaches come to me as I am stitching. I feel cheated when I don't have time to work on my needlework. It's an important part of my day, much like personal journal writing might be to someone else.*

After mulling this over, I then decided to analyze how I learned to do something that required ability in an area that is not one of my strengths. I thought about how I learned to ski, a sport that certainly requires a person to draw upon his/her bodily/kinesthetic intelligence, not one of my strengths. My road to becoming a competent skier was a long one. It took me years to gain the confidence to be proficient enough to ski with my friends. Normally I would not have made the effort to achieve a skill level in sports, but in this case I did. I wondered why I had reacted differently in this situation.

After reflecting on why I like to do cross stitch and how I learned to ski, I realized that intrapersonal was indeed my strongest intelligence, and I had used that intelligence to learn about MI! By thinking about my own intelligences, my own strengths and weaknesses, I came to an understanding of what the theory was all about. Although the readings and institute were certainly helpful in clarifying aspects of the theory, it was only when I related it to my own life that I truly began to understand MI. At our March Institute, we received the results of the MIDAS questionnaire. I found it interesting that my MI profile from this assessment scale correlated so closely with the introspective piece I had just written. Once again my strongest intelligence came across as intrapersonal.

At this point in the project, I was inspired to develop an assessment tool which would encourage students to go through the same type of reflective process that I had just experienced. I tried using the "Personal Learning Preferences" form found in Bruce Campbell's *The MI Handbook* (1994, p. 31). Despite our class discussions about MI, I realized that some of my students did not possess the skills necessary to reflect upon their strongest and weakest intelligences. I thought about having the students respond to the checklist found in Armstrong's book (1993, p. 18-23), but felt the type of response it invited was too black or white. For instance, under the category "Linguistic Intelligence," the reader is asked to check whether or not this statement applies to them, "Books are very important to me." I felt a yes/no form of response to this type of statement would not really tell me much about the student as a whole or about linguistic intelligence. After examining C. Branton Shearer's MIDAS questionnaire (1994), I came up with my own AMI Assessment Survey. (See section on "Methods.") The process I went through in developing this tool further helped me to understand MI theory.

While I was working on this assessment tool, I was also reviewing several books that outlined MI-inspired lesson plans. They included *Multiple Intelligences in the Mathematics Classroom*, by Hope Martin; *The MI Handbook*, by Bruce Campbell; and *Seven Ways of Teaching*, by David Lazear. Although they were written basically for teachers at the elementary and middle school level, I felt that many of the plans could be adapted for use with adult students. When I was teaching students in grades three through six, I had used thematic units that involved projects and activities that I now realize had been in the spirit of MI theory. While I had wanted to do similar types of assignments with my adult students, I was reluctant to do so for fear that they would find this type of work too immature. At the March AMI Institute, several of my fellow researchers on this project shared some of the activities they were using with their students. Their success with these same types of assignments I had been considering gave me the encouragement I needed to take a risk and try some of the non-traditional plans I had long wanted to implement in the adult classroom.

In the fall of 1997, I became intrigued with the role the personal intelligences could play in the formation of an effective ABE program. After reading an article from *Educational Leadership* that discussed Daniel Goleman's book, *Emotional Intelligence*, I decided to read the book myself. I began to sense that one of the most important themes that was beginning to emerge from my research centered around the importance of the personal intelligences. When I had first begun studying MI theory, I had subconsciously dismissed interpersonal and intrapersonal intelligence into a subcategory that was less significant than the six other intelligences. Upon reading Goleman's book and rereading the chapter in *Frames of Mind* entitled "Personal Intelligences," I changed my attitude regarding these two intelligences. I was particularly interested in the section of the book that outlined Salovey's subsumation of Gardner's personal intelligences into his definition of emotional intelligence, which he then expanded into five domains:

> Managing emotions
> Knowing one's emotions
> Motivating oneself
> Recognizing emotions in others
> Handling relationships (Goleman, 1997, p. 43-44).

I then read *Succeeding with Multiple Intelligences: Teaching Through the Personal Intelligences*, a guide created by the faculty of The New City School. Besides giving me many interesting ideas for creative lesson planning, the introduction to the book helped to crystallize my beliefs about the personal intelligences. In the "Foreword," Howard Gardner wrote about the controversy surrounding his inclusion of the personal intelligences in MI theory; "When the theory of multiple intelligences was first introduced to the public, the idea of 'personal intelligences' proved especially controversial …many readers – especially psychologists – balked at the thought that an individual's relation to others, or to herself, could be construed in a cognitive way." Gardner goes on to say that there is "...a growing acceptance of the notion that we need to be intelligent about the world of humans, as well as the world of objects and symbols" (Boggeman et. al, 1996, p. vii).

Further into this same piece, Gardner relates some of his attitudes towards the personal intelligences, indicating the role they can assume as "…vital participants in good education." He also states that:

"…the personal intelligences are more closely related to one another than any two other sets of intelligences….Indeed, I was often hard pressed to decide whether a particular exercise or goal constituted an instance of interpersonal intelligence, intrapersonal intelligence, or both. To a theorist, clarification of the relation between the intelligences remains important; for the practitioner, however, some attention to both is the primary mission" (p. vii-viii).

In addition to the literature cited above, I have listed other resources that had an impact on my research in the bibliography at the end of this paper.

METHODS

I would stress ... the importance of having a viable model of oneself and of being able to draw effectively upon that model in making decisions about one's life.

Howard Gardner
Frames of Mind (p. xviii)

Participants

I worked with seventeen students over the fifteen months of this research project. Only one was with me the entire time. All the students were white and English speakers. Two students had completed 8th grade as their highest level of education; two had finished one year of high school; six had two years of high school and the same number had completed three years. One student had recently received his GED diploma. The following chart shows how the remaining demographics of the group broke down.

	# Male	# Female	Total #
Age			
16 to 24 years	3	7	10
25 to 34 years	1	3	4
35 to 44 years	1	1	2
45 to 54 years	0	1	1

By the end of the research project, six students had met their educational goals; four had shown progress toward meeting theirs by passing at least one test; two were still enrolled, but had not taken any tests; three had moved out of the area, while two others had left for unknown reasons.

Data Collection

I gathered my data from the students, from the classroom and from my teacher journal and classroom plans. The data collection tools that I used with my students included interviews, dialogue journals, surveys and examples of student work which were stored in their personal resource books.

The first tool I introduced to the students was the dialogue journal. At the end of each class, I would set aside ten to fifteen minutes when the students could record their comments about the class in notebooks expressly provided for this purpose. The students could write about anything they chose, but I tried to focus their writings by offering open-ended questions like, "How did you find tonight's math lesson?" or "What type of brainstorming activities work best for you?" I would collect the journals, which were completed voluntarily, and respond to the entries written by the students, offering comments, suggestions and questions for them to ponder.

In the first couple of weeks of attending class, a new student would take the AMI Assessment Survey and plot his/her responses on a profile grid. (See chapter on "Assessment.") Deciding that I needed a way to make the new members of the class familiar with what we were doing in the project, I developed the AMI Assessment Survey and recorded the script on audiocassete tape. In the beginning of the tape I offer the rationale for exploring a student's intelligences, explaining why this information will help the student prepare for the GED exams or earn an adult diploma. Then the student listens to eight selections, each describing someone who might display a given intelligence. The student responds by indicating whether each selection describes him/her "very much," "a lot," "somewhat," "a little" or "hardly at all." The student then plots his/her findings on an "AMI Profile" grid and files this graph in front of his/her dialogue journal.

Although this survey does not give a definitive assessment of the student, it does provide a starting point to begin investigating a student's strengths, and a common vocabulary to use when discussing how the student learns best. The survey also shows my students that I am willing to look at each one of them as an individual. I find that they appreciate my interest, and this, in turn, makes them more willing to try different approaches to learning.

Periodically, I would review student work, looking for student strengths, and share these informal assessments with the student either in class or through comments in the dialogue journal. Each quarter, using a set of semi-structured questions I had designed to elicit information on how the students view themselves as learners, I would interview the students and record the results of our discussions. Additionally, to record data from the classroom, I wrote up anecdotal notes after each session. After writing up these notes, I then prepared a more formal account of the lessons in my teacher journal.

As I began collecting my data, I soon realized that I needed a way to compile it in a more effective manner. I developed another collection instrument which I entitled the "Cumulative MI Assessment Worksheet." I took information that I had gathered on each student and organized it in chart form under the headings "AMI Tape," "Writing/Journal" and "Observations/Interviews/Incidental Conversations." Periodically I would update this worksheet with new data.

I was able to obtain copies of videotaped sessions from Silja Kallenbach, one of the directors of the AMI Project, who videotaped my class in November 1997 and March 1998. I found the data I could glean from them very helpful in assessing my students' involvement in MI-inspired activities. This unexpected resource added a unique perspective to my data collection base.

FINDINGS

> *My own studies have shown that people love to [construct their own intellectual profiles]. Kids like to do it, adults like to do it. And, as an activity it's perfectly harmless. I get concerned, though, when people think that determining your intellectual profile – or that of someone else – is an end in itself. You have to use the profile to understand the ways in which you seem to learn easily. And, from there, determine how to use those strengths to help you become more successful in other endeavors.*
>
> **Howard Gardner**
> *Educational Leadership*
> (Checkley, 1997 pp.10-11)

A. How can teacher and student, working collaboratively, identify the student's strongest intelligences through MI-based assessment and classroom activities?

A. Findings

- Students appreciate having their intelligences acknowledged and valued. Many have never had the opportunity to claim their intelligences.
- Through communication in dialogue journals, many students were able to explore their intelligences in greater depth.

Evidence of student intelligences can found by:

1. observing how they approach the challenge of solving a problem.
2. examining their writings.
3. discussing their strengths with them.
4. surveying their likes and dislikes.

Through the use of surveys, observations of classroom interactions, analyses of work in their resource books, student interviews and interactive journal writings, the students and I were able to develop fairly comprehensive profiles of their strongest intelligences. In the clear majority of cases, the students reported enjoying this experience and found it to be a worthwhile activity. I think it is important to emphasize that the students' profiles were never viewed as something static or definitive; we constantly reviewed our findings and expanded upon the initial profiles as we accumulated further data. How we used the information we gathered is explained in Part B of this section.

On the following pages the reader will find case studies describing four of the students with whom I worked during this research project. All student names have been changed. Their writings have been edited for spelling only.

Finding 1A: Students appreciate having their intelligences acknowledged and valued. Many have never had the opportunity to claim their intelligences.

Roland

Roland was a student in my class when I began working on the AMI Project. He had already taken and passed three sections of the GED exam, but he still needed to work on math and writing. Roland had decided that, since math was his stronger subject, he would first work exclusively in writing.

I introduced MI theory to Roland and another student by writing the word "Intelligence" on the board and asking them to tell me the first thing that came into their minds. Roland's response was to quickly say, "I.Q." From there the two students offered responses like "not just having an education," "common sense," "the ability to put things together," "artistic talent," and "not just reading and writing." During another class a couple of weeks later, I shared information about Gardner's theory with the students. My notes from my teacher journal for the night of 1/27/97 indicate how Roland reacted to this information.

> *During the discussion, while we were looking at the diagram, Roland made the comment that he didn't fit under any of the categories. It was nice to see both Donna and Libby turn to him and begin to point out areas in which he exhibited strength. This shows what a good rapport the group has – I was proud of them.*

At the same time as these discussions were taking place, I also had the class working on a team building exercise. I had posed this challenge to the group – "What can we do, as a class, to make The Tutorial Center a more comfortable environment in which to work and learn?" As a class, the students had decided to requisition a larger white board for the classroom because the one we had was not large enough for all the students to see what was being demonstrated, nor was it big enough for students to work together at the board. Observing how the students reacted to this challenge gave me insight into all their intelligences. In particular, I noted in my teacher journal for the evening of 1/13/97, "Roland immediately jumped up to the present board and began measuring the wall." I also indicated that he was the first to point out which boards from the catalogue would be too large for the wall space we had available.

When I began gathering data for this project, I had the class fill out Campbell's questionnaire titled "Your Current Learning Preferences" (1994, p. 31). I met with each student individually afterward to discuss his/her responses. The notes from my meeting with Roland in March 1997 offer some further information that helped us to determine his MI profile.

> *Roland checked visual as his strongest intelligence. He told me that he can look at something, like an entertainment center, and just know right away how to put it together.*
>
> *When I asked him if he was surprised by anything new he had realized about himself after answering the questions, he replied that he was now aware of how well he worked with others. I mentioned that he certainly likes to be physically active – fishing, hunting, skiing, hiking, riding. He agreed and said that one of the hardest things he found being in school was sitting still for long periods of time.*
>
> *When I asked him if he had any questions or comments about the AMI Project, Roland told me that he was glad I had shared the ideas about MI theory with the class. He felt that this information could be helpful because it showed what "we would be good at." Roland told me that he never knew or had never thought of this definition of intelligence before.*

Later that spring, I developed the AMI Assessment Survey and asked the students to respond to it. Roland was one of the first to take the survey.

Name: Roland **Adult Multiple Intelligences Profile**

	Musical	Bodily/ Kinesthetic	Linguistic	Logical/ Mathematical	Visual/ Spatial	Interpersonal	Intrapersonal	Naturalist
Very Much								
A Lot		X			X	X		
Somewhat	X			X			X	
Just a Little								
Hardly at All			X					N/R

From his responses, it is apparent that Roland was very much aware of his strengths – bodily/ kinesthetic, visual/spatial and interpersonal. Although I had not yet added a scenario for the naturalist intelligence at this point, I feel confident in saying that he also would have listed this as one of his strongest intelligences.

Our initial theory regarding Roland's strongest intelligences was further verified when I examined two of his writing pieces for information about his intelligences. In March, Roland wrote an essay about what his ideal day would be like. He wrote about going fishing (and catching more fish than his brother). A few months later, Roland wrote another piece about something he does well. Although he listed fishing, hunting, skiing, socializing, and photography during his initial brainstorming session for this assignment, he chose to write about woodworking. My anecdotal notes from the evening of 6/25/97 provide a rich source of information about Roland's intelligences.

> *Complained about having to write 150-200 words – others teased him, 'Just be quiet and start writing!' Used self-interviewing technique effectively...Ended up with a web filled with ideas. Wrote the first draft of his essay before leaving class. Mentions learning by watching dad at work. States, 'I love going into churches to admire the art of woodworking.' Likes the 'ruggedness' of a post and beam structure. Thinks he has a 'creative mind and a taste for some unusual looking furniture.'*
>
> *Mentioned that if he won the lottery, he would quit his job and spend his time helping senior citizens with home repair work, free of charge.*

Roland's acceptance of his strongest intelligence and his willingness to apply it to the writing process developed over the course of the semester. In January, he could not find himself in the descriptions of any of the intelligences. By May, he was claiming his intelligence without my prompting, but still not drawing upon it voluntarily when faced with the challenge of a writing

assignment. My teacher journal dated 5/19/97 highlights this lack of connection:

> *At this point, in the midst of five other students working on different learning activities, we talked about Roland's effort [on his essay]. At first he expressed concern as to whether or not he would be able to complete the GED Writing test within the prescribed time limits. Then he said, 'I'd like to see these people put together a home entertainment center under these conditions.' He questioned our discussions about multiple intelligences. 'What good is it being intelligent this way [spatially]? I might as well stick to woodworking.' I asked Roland if he had used a web to collect his ideas. He told me he hadn't. Roland seemed a little calmer after our talk, and he set to work rewriting his essay. His revised copy was not only better constructed, his handwriting also showed less anger and frustration.*

In the "Reflections" section of my notes for the evening, I express my dismay that I had not picked up on something that Roland had said that night during our conversation. "I had been so concerned that Roland had not used a web to plan his essay, that I completely overlooked the fact that he had said something far more significant. He had acknowledged his spatial intelligence" (Personal Journal, 5/19/97). This was a big step in his internalizing his unique profile of strengths.

By June, Roland had recognized that a web was as an effective way for him to gather his ideas before attempting to write an essay. Like many students, it had taken a while for him to internalize this realization. Roland's path to understanding his intelligences was typical of many adults in my class – awareness first, then acceptance and finally willingness to apply what he has learned.

While I was able to gather a lot of information regarding Roland's intelligences from my discussions with him and my observations of him in class, unfortunately I was not able to learn a lot about him from his dialogue journal entries. In my teacher journal I describe him as "a man of few words" (Personal Journal, 1/29/97) On the other hand, I was able to learn about many of my other students by analyzing their dialogue journal entries. Even Mike, who started out writing very little at the end of each class, became more comfortable with this method of communication as time went on.

Finding 2A: Through communication in dialogue journals, many students were able to explore their intelligences in greater depth.

Betty

One student who revealed a lot about herself in her dialogue journal right from the beginning was Betty. Below you will find her AMI Assessment Survey grid and excerpts from a running dialogue taken from her journal entries. This information was extremely helpful when we formulated a more comprehensive view of her strongest intelligences.

Name: Betty **Adult Multiple Intelligences Profile**

	Musical	Bodily/ Kinesthetic	Linguistic	Logical/ Mathematical	Visual/ Spatial	Interpersonal	Intrapersonal	Naturalist
Very Much	X					X		X
A Lot					X			
Somewhat			X				X	
Just a Little								
Hardly at All		X		X				

I want the reader to understand that the following actually only represents a very small portion of our correspondence with one another between September and December 1997. I have included these selected excerpts, nonetheless, to show the reader how valuable the dialogue journals were to my research and to emphasize their importance in establishing an atmosphere of trust and understanding between student and teacher. Betty's comments are in regular print; mine appear in italic.

9/15 The ... meeting with the group discussion was very good...Upon my first day of class [I was] quite nervous.

9/16 You mentioned one thing...that I'd like to explore further. You said, 'The thought of failure scares me to death!' I wonder, with all the successes in your life, why you still have this fear. I also like to think of 'failure' as an opportunity to <u>learn</u> from your mistakes. Thomas Edison had many, many failed attempts when he was working to develop the electric light bulb...He saw that each failure was a chance to <u>learn</u> what wouldn't work.

9/17 I appreciate your comments also on my first night of class. The math will be the hardest but I will conquer it.

9/18 Let me know how your math is coming along. What do you find helpful? What would you like to see done differently?

9/22 The tape on Multiple Intelligences Profile...was a good exercise to make you think then show your weaknesses and strengths.

9/23 Now I'm interested in learning what you think are your strengths. Building on your intelligences will help you with subjects like math. Too often people try to learn new material by using the old ways which never seemed to work in the first place. I hope you'll be able to come up with the <u>best ways for you</u> to learn.

9/24 Class is going fine. I really appreciated the extra help in the math department. When being shown how to (rather than trying to grasp from a booklet the needed instruction) makes it much easier. I feel a lot more comfortable in class this week...I really look forward to coming to class but to also see new friends.

9/25 It was good to hear that you're feeling more comfortable in class...Being comfortable helps to bring down a lot of the defenses that made learning difficult in the past.

10/8 The math does seem easier now than in the beginning but it still is confusing at times. Yes, the addition and subtraction are easy but questions like: which is larger 1/8 or 3/4? I have to do the actual math. Maybe I am too hard on myself but that is only because I want to succeed.

10/10 I'd like you to try using your visual/spatial intelligence when comparing fractions like 1/8 and 3/4. We'll start with actual fractions pieces and then try forming a mental picture of them which you can draw upon in the future. Also try using your linguistic intelligence to describe a fraction. Example, "1/8 means break a whole into 8 equal parts and look at one of those eight pieces." Try actually visualizing yourself cutting a cake into eight pieces and eating one of the pieces. Have you eaten much of the cake? Now try visualizing cutting the cake into four pieces and eating three of the four (3/4) pieces. Have you eaten much of the cake?

10/13 Tonight's class went by quickly. I miss the other classmates but it is nice to be able to have individual help. Class is easier now than the start...I look forward to Monday and Wednesday class....I am determined to do this because graduating means everything to me. I want to fill a void that has been with me for many years plus it will give me one more accomplishment in my life.

10/14 Your enthusiasm is catching....What have you learned about yourself as a learner so far?

10/15 Thank you for 'your' comments about my positive comments....I have learned that I can do this program if I work [at] it. I have also realized (learned) that I am very fortunate in some ways such as: being in the work force with a good job, being successful in that job, having experienced many different life events that I feel [help] me to pursue my diploma.

10/16 You sound like a person who knows herself well. I think your intrapersonal skills are just as strong as your interpersonal skills. You are able to set goals for yourself, carry out the plans needed to achieve your goals, meet challenges and reflect on the positive and negative events in you life.

11/5 Compared to others in the class, I feel like the 'oldest beginner'. By that I mean, I'm the oldest member of [the] class and have only participated in a few of the activities. I have enjoyed the recruitment project the best because a lot of the material we used were very familiar to me and I could share my knowledge. The most helpful activity will be the autobiography unit. This project will enable me to find or to become more aware of weaknesses and will hopefully lead me to strengthen them....I like your way of remembering the math. The visual can help and make the learning of the fractions easier.

11/6 You have such a way with words! I love your expression 'oldest beginner.' The more I get to know you, the more I think that your linguistic intelligence is stronger that you may believe.

12/3 You are right in saying I have accomplished a lot in three months. The one thing I have learned about myself is that I can do it and not underestimate myself.

As my research came to an end, Betty wrote the following piece to describe her participation in the AMI Project.

While attending The Tutorial Center and completing my high school education through The Vermont Adult Diploma Program, I was able to acquire knowledge about myself that I never knew existed. Meg Costanzo, my instructor for the program, was very instrumental in teaching me about multiple intelligences... she gave me a little exercise to do to see what my interests were in several categories. This was actually a fun task to perform...It was amazing to learn about my intelligences and to identify with them.

B. How can teacher and student, working cooperatively, use the understanding of these intelligences to guide the learning process?

This next part of the "Findings" section shows how the students and I applied the information about their strongest intelligences during our classroom interactions. Working with the students to make them aware of their unique intelligences profiles led most of the students to become more willing to take risks and experiment while learning. I will begin my answer to Part B of my research question by referring back to Betty, whose profile the reader has just examined above. Betty's experiences with self-reflection mirror those of many of the students with whom I worked during this project.

Finding 1B: Through the process of examining their strongest intelligences, the students gained self-knowledge that helped them increase their confidence as learners.

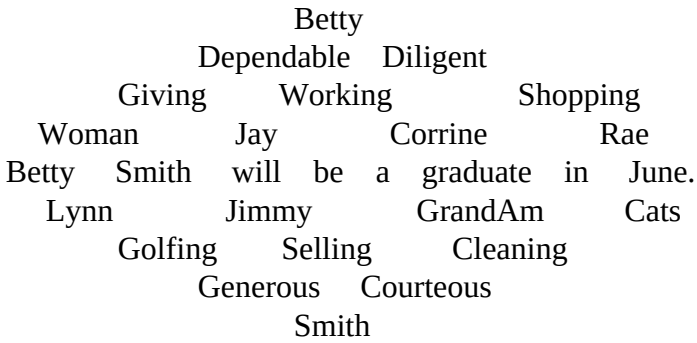
Betty told me during one of our first classes on September 17, 1997, that she would find it a challenge to write a poem about why people might admire her. In my anecdotal notes for that evening, I write that she mentioned that she would have trouble praising herself because she was so used to putting herself down instead. As the semester progressed, Betty became more willing to contemplate her strengths and view herself in a more positive light.

Throughout the period of time I worked with Betty, I saw more and more evidence of her growing self-confidence. This was reflected in her journal entries (see above), our interviews and her increased willingness to help other students in math. Perhaps the poem she wrote about herself best illustrates this change. During an autobiography unit the class completed at the end of November, Betty elected to write a diamante poem about herself. (A diamante is a structured poem that asks students to use adjectives, verbs, and nouns to describe a given topic.)

To me this represented a breakthrough for Betty and shows considerable growth on her part. I believe much of this positive change was due to Betty's acceptance of what she had learned about herself as a result of our discussions regarding multiple intelligences.

B. Findings

- Through the process of examing their strongest intelligences, the students gained self-knowledge that helped them increase their confidence as learners.
- Generally, self-knowledge also led to an increase in the students' willingness to experiment withnew, nontraditional learning strategies.
- Students need to have MI-inspired learning strategies demonstrated to them frequently and repeatedly before they will feel comfortable utilizing them.
- Students prefer to have a choice in how they demonstrate what they have learned.
- When given open-ended challenges, that allow them to draw upon their strongest intelligences, students begin to approach problem solving in unique ways, looking at this process from "outside the box."
- The application of MI theory in adult learning contexts can inform the instruction of reading and writing, as well as mathematics.
- Each student's individual intelligence profile dictated the type of learning strategy that I would emphasize during our sessions together.
- Changes in students' approaches to learning appeared to be accelerated by their knowledge of their unique multiple intelligences profiles and their work on activities and projects inspired by MI theory.
- Teachers should pay particular attention to the personal intelligences when designing a program for adult learners.
- Adult students are enthusiastic about real-life projects and are willing to take a role in how their learning programs are designed.
- Many adult students would prefer to work in groups and help each other learn.



Finding 2B: Generally self-knowledge also led to an increase in the students' willingness to experiment with new, nontraditional learning strategies.

Mike

Mike is another student whose awareness of his strengths helped him overcome some learning difficulties, especially in the area of mathematics.

Name: Mike **Adult Multiple Intelligences Profile**

	Musical	Bodily/ Kinesthetic	Linguistic	Logical/ Mathematical	Visual/ Spatial	Interpersonal	Intrapersonal	Naturalist
Very Much								
A Lot		X						X
Somewhat					X			
Just a Little	X			X		X	X	
Hardly at All			X					

My teacher journal entry from the evening of April 30, 1997, helps to create a picture of the "math paralysis" experienced by Mike prior to his acceptance of his strongest intelligences. My aim since January 1997 had been to encourage Mike to use his strongest intelligences when working in math, especially in relation to word problems. Mike seemed willing to accept that he had strengths and there were alternative ways of learning, but he was unable to put this awareness into practice.

> *I began the lesson by copying the glossary definitions of area and perimeter on the board. I then asked the student (Mike) if he could recall the formulae for calculating the same. After some initial difficulty, he was able to come up with the two formulae. We discussed the fact that, even though we had worked on this subject matter last Wednesday, the concepts were*

already becoming fuzzy, especially area. We talked about how traditional lessons are typically presented in either linguistic or logical-mathematical formats, and how these two ways of learning something might not be the best ones for him.

I then asked Mike to try using a different intelligence to record the meaning of the two terms. He decided he wanted to use his spatial talents to graphically represent perimeter and area. His drawing for perimeter was clearer than his one for area. I then gave him this problem to solve:

Consider rectangle ABCD. If side AB = 12 inches and side BC = 9 inches, what is the area of triangle ABC?

Mike expressed confusion about how to proceed. I asked him what intelligences were evident in the problem. He noted linguistic and logical-mathematical. We discussed how he needed to approach the problem using his strongest intelligences – that he had to translate the information into a form that would be easier for him to process. Mike appeared physically relieved when I offered this suggestion. After a short time, he had the problem solved. I had him cut the rectangle into two parts to prove that his answer was correct. Then I asked him to come up with a notation for his resource book that would help him remember how to solve a similar problem in the future. Mike drew a rectangle, divided into two equal parts, and shaded the two parts in different colors.

My reflections on this part of the evening's lesson indicate my concern that Mike was still stymied by these types of math problems.

Despite the use of manipulative materials in previous lessons, Mike is reluctant to begin the problem solving process in a non-traditional way. He has not "bought into" the concept that he should draw upon his strongest intelligences when initially approaching a problem. Yet he is quite willing to use such materials when prompted to do so.

Despite this, I sensed that Mike's understanding of his strongest intelligences could provide a way to get beyond this difficulty.

I was surprised that Mike was so comfortable with MI theory. He seems to have a better understanding of the different intelligences than I expected. I had expected him to be thrown off by some of the terminology, but Mike uses the terms with surprising accuracy. Once again, I note that Mike is showing signs of having a stronger logical/mathematical leaning than I previously would have thought.

Finding 3B: Students need to have MI-inspired learning strategies demonstrated to them frequently and repeatedly before they will feel comfortable utilizing them.

At this point in the research project, I became aware that it would take a considerable amount of modeling and practice before I would begin to see any significant changes in how the students approach the learning process. I decided to include more open-ended math problems in my lessons and found that the students liked experimenting with challenging problems. On the evening of May 7th, I tried this approach:

> *I gave the students an area problem involving an L-shaped figure that was labeled in such a way that they had to figure out some of the unmarked sides before they could begin computing the area. Jennifer and Mike worked together. Jennifer came up with the missing dimensions and explained how she arrived at the answer. Then Mike determined that, by squaring off the figure, computing the entire area, and subtracting the squared off portion, the area of the L-shaped figure could be found. He explained the process to Jennifer, who caught on quickly.*
>
> *I then asked the students if they could come up with another way to solve the problem. After a short period of time, Jennifer noticed that you could make two rectangles from the L-shaped figure by extending one of the lines. The students then found the area of the two smaller rectangles. We checked the answers against the first solution.*
>
> *Next I gave them four toothpicks and asked them to think of each toothpick as one unit. The problem was to find a geometric figure with a perimeter of 4 units. Jennifer immediately made a one unit square. I asked if there were any other solutions. Jennifer made a parallelogram. I encouraged the students to find other solutions. Mike suggested breaking the toothpicks in half. The students made a hexagon and an octagon from combinations of pieces. I asked the students to prove that the perimeter of each figure was 4 units. Jennifer put 4 other toothpicks end to end and then compared the component pieces against this 4 unit line.*
>
> *I then asked the students to make another rectangle with a perimeter of four units. Mike combined one and a half units to come up with a rectangle that was 1 ½ by ½.*

After the lesson was over, I reflected on the success of this approach.

> *The students really enjoyed the challenge of solving problems with multiple solutions. At the end of the evening, Mike told me that he had really enjoyed class this evening. He described the session as 'intense.' I want to ask him why he felt that way. Perhaps it is because he is more engaged in the activities now that he has more of an opportunity to draw upon his strongest intelligences as he works through the problems.*

I thought they might have been more intimidated by this type of problem. Instead they dove right into solving them.

The students are using manipulatives without prompting from me. They are more comfortable with ambiguity.

Finding 4B: Students prefer to have a choice in how they demonstrate what they have learned.

Both Betty and Mike confidently drew upon their strongest intelligences when they were doing a review lesson on measurement. The following is an entry from my teacher journal dated December 3, 1997. It describes how each student chose a different way to represent his/her understanding of the material we had been studying.

Description of Lesson *I had the class divide a large (12" x 18") piece of white paper into eight boxes. Then they numbered each box #1-#8 on the front and #9-#16 on the back. I told them that I was going to name various units of measure. They were to write or draw whatever comes to mind when they hear that term. The units I mentioned were the following:*

1. Inch	*9. Meter*
2. Cup	*10. Yard*
3. Milliliter	*11. Millimeter*
4. Quart	*12. Gallon*
5. Kilometer	*13. Foot*
6. Gram	*14. Centimeter*
7. Liter	*15. Kilogram*
8. Pint	*16. Pound*

Observations *As soon as I gave the directions to the lesson, Betty said, 'This is a good idea.' The students completed the assignment quickly, with little hesitation. I noticed that those who were drawing needed greater time to complete each section. When we began a wrap-up of the activity, Betty said, 'The metric ones are the harder ones.' Mike mentioned that he used mostly drawings to represent the units. 'How would you make a cup? You'd draw it.' Carolyn frequently used equivalents written in equation form to show her understanding of the relationships between the various units. Betty was more likely to write out descriptions of what came to mind when she heard the term. For example, when I said the word 'pint,' Betty wrote 'heavy cream,' Carolyn noted that 2 cups = 1 pint and Mike drew a measuring cup showing two cups equaling one pint. The same was true for the term 'quart'; Betty wrote 'milk,' Carolyn noted that 4 quarts = 1 gallon and Mike drew a quart of milk.*

Implications *I was very encouraged by the diverse approaches that the three students took in completing this assignment. I sensed that the students were comfortable in selecting their own methods to record their responses. No one stated that his/her answers were 'wrong' or 'should have been' like someone else's. I was pleased that the students had the confidence to tackle the assignment on their own terms. Old habits are dying!*

In addition to having choices when doing individual lessons, the students also responded very positively to having choice in what they learn and how they present evidence of their understanding during project work. A quote from my December 1997 interview with Mike sums up the typical student's attitude about the projects we completed as part of this study.

I like the class projects. Everyone gets to participate. You have choices. You feel more comfortable when you have choice. Then you're willing to do more and you do better.

Other students frequently voiced this same attitude during our interviews. (See page 25.)

Finding 5B: When given open-ended challenges that allow them to draw upon their strongest intelligences, students begin to approach problem solving in unique ways, looking at this process from "outside the box."

Mike's math skills continued to improve as he progressed in our program. I was struck by how comfortable he had become working on word problems when I reviewed a video taken on March 30, 1998, the evening of our last class together. I had given the students the following challenge: *Making only three cuts, slice a donut so that you end up with at least 10 pieces.*

My notes written after viewing the video indicate how Mike approached the problem.

Mike notices that the challenge doesn't call for making equal pieces and states, 'So they don't have to be equal pieces.' He starts drawing a donut on a piece of paper.

Mike says, 'You could do it on paper. If you do it on paper, you don't have to stop.' I ask him to demonstrate what he means. He asks me to draw the donut on the board, so I do as he approaches the front of the room. Mike begins by drawing the lines of the cut in the air above the board. He says he will be able to get about 12 pieces out of one cut and proceeds to draw a serpentine line that weaves through the donut with one continuous motion.

In our wrap-up discussion, I ask the class if there is anything they learned from this exercise that could be applied to real life problems or challenges. Mike tells the class to look beyond the obvious.

Mike replies, 'Things aren't always so cut and dry...Everything's not norm, as norm would be.'

I note in my journal entry for the night that I am pleased to see the level of confidence Mike and the

other students displayed as they went about this task. Before our work on this project, the students probably would have been more reluctant to take the risks involved in meeting this type of challenge. Their understanding and appreciation of their intelligences gave them permission to try new approaches to learning, to experiment, to take risks.

Finding 6B: The application of MI theory in adult learning contexts can inform the instruction of reading and writing, as well as mathematics.

Jennifer

When I began participating in this project, I could see more clearly how the application of MI theory could inform the instruction of math, but I was less sure how I could apply the theory to the teaching of reading and writing. My work with Jennifer helped me broaden my understanding of MI's implications.

One of Jennifer's self-stated goals in our program was to improve her reading comprehension. She felt she was too easily distracted when reading and, therefore, her retention of information was poor.

Name: Jennifer **Adult Multiple Intelligences Profile**

	Musical	Bodily/ Kinesthetic	Linguistic	Logical/ Mathematical	Visual/ Spatial	Interpersonal	Intrapersonal	Naturalist
Very Much		X			X	X		
A Lot	X							
Somewhat			X					
Just a Little				X				X
Hardly at All							X	

As I began my work with Jennifer, she was quick to pick up on her learning strengths. In her dialogue journal dated March 21, 1997, Jennifer writes,

> *I realized that I learn faster by visual. I like working by myself. I am very easily distracted. It's not really that I learned more about myself it's just that I never really thought about that kind of stuff!*

After drawing attention to her strongest intelligences, I suggested that Jennifer use a combination of these strengths to help her improve her reading comprehension. I pointed out to her that good readers are always questioning themselves as they read in order to self-monitor their comprehension; I had Jennifer practice a similar technique whereby she came up with questions for each paragraph

she read. She wrote the questions down on one side of a paper that was folded in half from the right hand edge to the margin. After composing the questions, Jennifer then wrote the answers on the other side of the fold. In effect, Jennifer was having a "conversation" with herself as she read. Writing the information down helped to reinforce comprehension. When Jennifer wanted to review the matter, she could fold over the part with the answers, reread the questions and then determine for herself her level of understanding. In her dialogue journal for the evening after this lesson, Jennifer expresses her opinion about this technique.

> *Thanks for explaining that there are different ways to take notes. I think these will help me a lot!*

Jennifer's response to this method of improving comprehension was positive. In my anecdotal notes, I write,

> *Introduced to "learning to learn' method for improving comprehension. Quickly understood how to format Q and A. Was able to locate information easily.*

I also encouraged Jennifer to focus on any pictures that accompanied the material she was reading. While we were working on a biography of Harriet Tubman, she told me that she found the illustrations helpful in comprehending the story. Jennifer also seemed to enjoy discussing "what if" questions such as, "If you had been a slave in the South, would you have attempted an escape using the Underground Railroad? Why or why not?" My anecdotal notes from the evening of 10/20/97 indicate how Jennifer is responding to reading activities designed to encourage the students to draw upon their strongest intelligences as they read.

> *Read chapter in bio of H.T. – good comprehension – has thoughtful look on face during discussions. Noted that she learns best visually.*

I then suggested to Jennifer that she form her own illustrations in her mind as she reads. We practiced reading a few paragraphs at a time, and I asked her to tell me what images she had formed as we went along.

Finding 7B: Each student's individual intelligence profile dictated the type of learning strategy that I would emphasize during our sessions together.

A dialogue journal response that I wrote to Roland on May 15, 1997 exemplifies this personalized approach.

> *I have been giving a lot of thought to what you said about taking the GED Writing Test. I can understand your concerns about the time limits. Unfortunately, they are a reality that you have to deal with. The challenge that faces you is to see how you can take advantage of your strengths to overcome some of the obstacles that you feel are in your path.*
>
> *I would like you to think about how you would go about putting together a home*

entertainment center. Break the process down step-by-step. What do you need to finish the job? What do you do if you make a mistake? What do you do when you become frustrated by the job? I'd like you to share your thoughts with me. You could do this by writing an essay about the subject, or you could simply tell me what you do. You could also write up a step-by-step list of how you would handle the task, or you could make a video showing me what you would do. I don't care how you present this information - I'll leave that decision up to you. I am interested in knowing how you go about a job like this. Perhaps we can take some of the things you have learned doing this type of work and apply it to 'constructing' an essay. What do you think?

As one takes note of the different lessons and projects that I used in my class, the reader may come to the realization that many of the teaching techniques I have presented are not necessarily new or revolutionary. The difference was in my students' willingness to accept that there are different learning approaches and to understand which approaches work best for them individually. This was not a change that took place overnight; the awareness and acceptance had to be nurtured and encouraged over time.

Finding 8B: Changes in students' approaches to learning appeared to be accelerated by their knowledge of their unique multiple intelligences profiles and their work on activities and projects inspired by MI theory.

Before I go on, I would like to bring you up to date on the four students whose case studies I have highlighted on the previous pages. Roland did take the writing portion of the GED exam and passed with a respectable score. He was so pleased with the essay he had written that he wanted the testing center to give him a copy of his paper. Jennifer passed the reading and written math portions of her diagnostics tests for the Vermont Adult Diploma Program. Although work commitments have kept Roland and Jennifer from progressing any further toward meeting their educational goals for the time being, I hope that both will pick up their studies again in the fall. Betty and Mike completed all their testing and requirements for the adult diploma program and graduated in June 1998. Of course, I cannot state unequivocally that these results were directly the result of my use of MI-inspired activities and projects in our class. However, I have to believe that, based on the overwhelming positive response by the students to this new approach to learning, the application of MI theory in an adult learning context did play a major role in the successes achieved by the four students studied above, as well as the successes of a number of other students with whom I worked over the period of this research project.

Finding 9B: Teachers should pay particular attention to the personal intelligences when designing a program for adult learners.

I would have to say that my most surprising finding is how the personal intelligences emerged as such an important element in my research. Eventually, some of the methods I developed as a means to help me gather data for the project – dialogue journals, self-assessments and interviews – became, in themselves, an end; they served as a model for good classroom practice and a method for nurturing and developing the personal intelligences. My students responded positively to those types

of activities that emphasized the interpersonal and intrapersonal intelligences. They showed a preference for group activities and social interaction. They demonstrated a growing acceptance of constructive feedback, especially when it came from their peers. Additionally, they were receptive to those activities that helped them to recognize their strengths, accept limits, take risks and expand their horizons. Through our work on MI-inspired lessons and projects, the students learned to tackle problems in an original way, persevere and overcome frustration. Most students seemed thirsty for the opportunity to develop their personal intelligences.

With this in mind, I would recommend that teachers consciously incorporate those types of activities that promote growth in the personal intelligences into their academic program:

Interpersonal	Intrapersonal	
Activities involving strategizing	Autobiographies	Portfolios
Oral presentations	Interest inventories	Collages
Panel discussions	Predictions	Photo displays
Debates	Personal narratives	Self-portraits
Team building	Goal setting	
Community service	Reactions to open-ended situations	
Reciprocal teaching	Personal time lines	
Group design	Stories involving life experiences	

Finding 10B: Adult students are enthusiastic about real-life projects and are willing to take a role in how their learning programs are designed.

The students reported enjoying both the MI-inspired lessons and projects we did in class. While contextual constraints prevented the students from working on projects of a more long-term nature, they told me that they liked our shorter term learning projects. I think that was because these projects could be completed in a relatively short period of time. The students appreciated having a choice in what they could do for these assignments. For example, the class worked on the following challenge in the fall of 1997: *How can we, as a group, encourage other adults to attend classes at The Tutorial Center?*

When we began our planning, one student asked me if we were really going to carry out the ideas that we came up with or if this were "...just an exercise." When I told the group that we were actually going to try to attract new students into our program, they tackled the challenge with added enthusiasm. The students designed a new flyer for our center, interviewed former graduates to obtain their feedback, wrote a public service announcement, brainstormed ways to improve the sign in front of our building, and conducted a survey to determine which type of sign would be the best advertisement for the center. Throughout the project the students were able to display their intelligences by selecting activities that allowed them to showcase their strengths.

While I was sifting through my data and sketching out the themes that I saw emerging in relation to my research question, I began to realize more and more how my students had become "co-researchers" with me on this project. For my December 1997 interview, I decided to ask them what they thought I should tell other teachers about our classes and what advice they would want to give teachers to help them plan effective lessons for adult learners. Their responses support

the significance of emphasizing all the intelligences and, in particular, the personal intelligences when planning an ABE program. I have categorized their comments into four main categories:

1. Spend time getting to know the students' strengths.
   - **Mike:** Know the person you are teaching.
   - **Betty:** Listen to the student's needs.

2. Encourage students to draw upon their intrapersonal intelligence.
   - **Mike:** Students have to know their goals.
   - **Betty:** Some students are doomed before they begin if they don't have the right attitude. The students have to bring something to this, the desire to do their best. Otherwise it won't work.

3. Plan varied lessons that can reach the students through their strengths.
   - **Mike:** [The MI] profile will help you know which way to teach. Look for similarities in profiles and use that approach.
   - **Betty:** Try to figure out why we don't understand something and then use a different approach, not just the same thing over and over again.
   - **Carolyn:** You benefit from problem solving activities.
   - **Jennifer:** The math activity [review game] was very effective. Use more "hands-on" activities.
   - **Mike:** Use different learning tools.
   - **Betty:** Use creative ways to get the students involved, like the cubes [Autobiography Unit] and the measurement activity. They make learning fun and interesting. MI theory can help because it leads to creativity in lesson planning.
   - **Carolyn:** Make the lessons understandable, give clear instructions, talk about it, give an example.
   - **Jennifer:** I liked [the units or projects] personally, like the cube and the time line [Autobiography Unit]. They helped me think more about myself this time. I'm usually thinking about others. This gave me time to think about me.

4. Plan activities that encourage students to draw upon their interpersonal intelligences.
   - **Carolyn:** Sometimes we work together in a group. If one person doesn't understand, we work together.
   - **Jennifer:** Learning is easy because it's mostly done as group activity.
   - **Mike:** Get everyone to participate.
   - **Betty:** Group activities are important. Through interaction with others you learn more.

This last section of student comments surprised me the most and led to my final finding regarding how an understanding of MI theory can guide the learning process:

Finding 11B: Many adult students would prefer to work in groups and help each other learn.

ADDITIONAL FINDINGS

Additional Findings

- Offering an MI-inspired program to adult learners can lead to increased enrollment and improved attendance.
- Both low scores and unrealistically high scores on the Personal Intelligences Cluster may be "red flags" to alert the teacher that these students need special attention in order to encourage them to remain in an ABE program.
- The incorporation of MI-inspired lessons and projects into the curriculum can have a positive influence on teacher/student relationships.
- Awareness and understanding of MI theory will influence a teacher's understanding of his/her own personal and professional strengths.

Offering an MI-inspired program to adult learners can lead to increased enrollment and improved attendance.

My research resulted in a few unexpected outcomes. The first involved enrollment and attendance. As I just detailed in the previous section of this paper, one of the team building activities we worked on during this project called for the students to meet the challenge of recruiting more students into our program. During the wrap-up to this project, the students calculated the change in our class enrollment from December 1996 to December 1997, a full year since we had begun working on the AMI Project. They were excited when they realized that our figures were up 80% during that time. I later went back and looked at actual student hours of attendance compared to total classroom hours scheduled during the same period. Surprisingly, this figure grew by almost 220%. After reviewing the data provided in our dialogue journals, my teacher journal, interviews and observation reports, I am confident in proposing that this increase in class participation is due, largely, to the MI-inspired changes I have made in our program, particularly the heightened emphasis on developing the personal intelligences. Our increased attention to the personal intelligences transformed our group from simply an adult basic education class into a community of learners, or, as Betty termed it, our "class family."

Both low scores and unrealistically high scores on the Personal Intelligences Cluster may be "red flags" to alert the teacher that these students need special attention in order to encourage them to remain in an ABE program.

When I examined the results of the AMI Assessment Survey that the students completed as part of this research project, I found some interesting patterns and new questions began to emerge for me.

A total of fifteen students listened to the AMI Assessment Survey and developed their profiles. I took their responses, assigned them a point value and posted the scores on a class profile chart. (I did not include the naturalist intelligence on this chart because not all of the surveyed students had the opportunity to respond to this scenario.) In order to illustrate how I did this, I have shown Betty's profile and scores below.

Intelligence	Response	Point Value
Musical	Very Much	5
Bodily/Kinesthetic	Hardly at All	1
Linguistic	Somewhat	3
Logical/Mathmatical	Hardly at All	1
Spatial	A lot	4
Interpersonal	Very Much	5
Intrapersonal	Somewhat	3
	TOTAL	**22**

I then grouped the scores of certain intelligences into clusters.

Linguistic & Logical Mathmatical	4
Interpersonal & Intrapersonal	8
Bodily Kinesthetic & Spatial	5

Upon examining the class profile chart when it was completed, I noticed an interesting correlation between how the students responded on the survey and the likelihood that they would remain in class long enough to meet their educational goals. Of the five who left the program after only attending a few classes, two had very low total scores when compared with the class average (total scores of 14 and 16, compared with a class average of 20.6), two had scores in the average range, while the fifth student had a total score of 31, fully ten points higher than the average and six points higher than any other students who completed the survey.

When you examine their scores in the Personal Intelligence Cluster, another pattern emerges. While the class average is 5.9 in this cluster, three of the five students being discussed had scores of 3, 4, and 5, respectively, while the fourth student had a score of 7 and the fifth was the only student in the entire group who scored a high total of 9 in this cluster. Although this is a very unscientific study, it made me think about how this type of information could be helpful to a teacher.

The incorporation of MI-inspired lessons and projects into the curriculum can have a positive influence on teacher/student relationships.

I developed a very different relationship with my students as time evolved during this project. I remember reading somewhere when I first started working with adults that in order to have an effective adult basic education program it is important for the teachers to be peers of the students. I was rather taken aback by this statement, for although I did not consider myself better than my students, I certainly felt my level of education, economic position and background made it difficult

for me to consider myself their peer. Our involvement in the AMI Project has given all of us a chance to get to know each other on a different level. Even though I had always had a good rapport with my students, I have learned things about them while doing this research that I possibly never would have known otherwise. Silja noted a "palpable sense of camaraderie" upon visiting our classroom. One student described this as our "class family." I have a much deeper understanding and appreciation of my students' strengths as a result of my work on the project, and I certainly have come to recognize how the students are indeed my peers. I am humbled by this experience and much the wiser as a consequence.

Awareness and understanding of MI theory will influence a teacher's understanding of his/ her own personal and professional strengths.

Finally, my involvement in the AMI Project was a tremendously rewarding experience. I not only grew professionally, but also personally, as a result of my work. My knowledge of MI theory caused me to look at myself differently, recognize my own strengths and have the courage to take risks developing some of my weaker domains. Diane Paxton, one of the researchers with whom I have worked on this project, said something when we first started working on our research that has stuck with me for the past year and a half. She remarked that we would not be the same people who we were at the beginning of the project when we reached its conclusion. That is certainly the case for me.

DISCUSSION

> *Probably the most important [educational] implication [of MI theory]... is to take differences among individuals very seriously, to know as much as you can about each of the individuals, and try as much as possible to gear and to fit your approach to what you know about that individual.*
>
> **Howard Gardner**
> Address to the New England
> Conference on Multiple
> Intelligences in ABE/ESOL

Implications

My work involving the application of MI theory at the adult learner level has given me a new lens with which to view adult students. This experience has also given the adult learners with whom I worked the opportunity to contemplate on how they learn best and a vocabulary to express their reflections. I had the chance to develop or modify teaching strategies that work best with adult learners, allowing them to demonstrate a variety of strengths and talents. Because the students accepted and acknowledged their intelligences, they were more willing to respond to these non-traditional teaching strategies and take on the responsibility of discovering for themselves how they learn best. I expanded my methods of assessment to allow students to demonstrate their knowledge of the subject matter in alternative ways.

Because of my involvement in the AMI Project, I have come to recognize a new dynamic that emerged in my class. I come away from my research with a revised model for an effective ABE classroom, one that is less teacher-centered and which gives the students a greater voice in what they study. It is a classroom that emphasizes personal growth as well as academic development. It is a model that encourages students to solve real life problems and develop a variety of skills they will find useful in the future.

ADVICE TO OTHER PRACTITIONERS

> *Don't drop what Success for All has established, or Reading Recovery, in order to buy an 'MI Kit' and have people dance around and read; that would be a poor strategy.*
>
> **Howard Gardner**
> Address to the New England
> Conference on Multiple
> Intelligences in ABE/ESOL

When I heard this statement during Gardner's address to the conference, I was particularly impressed by these words. In my thirty years as a teacher, I have seen fads come and go in education. I was weary of new programs that were touted to be "the" only way to teach and tired of implementing program after program as they phased in and out of favor. Gardner's message to educators was refreshing. Instead of abandoning those aspects of our programs that we have found successful, he urged us to keep doing what we recognize as sound educational practice. He also encouraged us to experiment with his theory as we saw appropriate. "Try it out; see what works." In other words, celebrate our successes, but investigate what we can do better in light of what the theory has to offer to us as thoughtful practitioners.

With this in mind, I would urge teachers to read about MI theory and spend some time reflecting on their own strongest intelligences. I suggest that they encourage their students to think about their strengths too. Again I have to state how powerful a tool the use of dialogue journals was in this respect. I would also suggest that teachers read through some MI-inspired lesson plans, with an open mind as to how they might be adapted to their particular adult learning contexts. I would challenge them to see how similar ideas could work and warn them not to dismiss new ideas too quickly before giving them a chance to succeed. I would recommend that teachers clearly articulate to their students the advantages of an MI-inspired ABE program. I would caution teachers to have patience implementing new teaching techniques. I would encourage them to model new learning strategies frequently and repeatedly. Finally, I would strongly urge adult educators to find the time in their busy lessons to nurture and promote the personal intelligences. It is my finding that time spent doing this reaps rewards for the learner far greater than time spent purely on academic tasks.

NEW QUESTIONS

> *Adult learners already have a sense of who they are; what they can do; what they can't do. That's a good starting point, but some of those conceptions many not be well motivated. They may think there are certain things they can't do and that may be wrong. And part of your challenge is to help them see that there are ways in which they can do those kinds of things. So intrapersonal intelligence in a learning society is tremendously important.*
>
> **Howard Gardner**
> Address to the New England
> Conference on Multiple
> Intelligences in ABE/ESOL

I think it would be interesting to pursue an investigation of the relationship between the student's understanding of his/her personal intelligences profile and the likelihood that the student will make a commitment to continued participation in an ABE program. Our Center is presently considering ways that we can better meet the educational needs of our younger adult population. It is my belief that many of the students who are in their teens and early twenties when they enroll in our program have not developed their personal intelligences and, therefore, may not possess the necessary skills to succeed in meeting their educational goals. This is particularly true of the young men who enroll in our program. In the group of five students who left my program without making any progress toward meeting their educational goals, the three students with the lowest score in the Personal Intelligences Cluster were males 16, 18, and 23 years old, respectively. I believe that a program that is especially designed to help students explore their personal intelligences might help with student retention. In particular, I feel that involving the students in the design of this program would be beneficial. Many adult students, especially those who have recently left school, expect education not to be interesting or worthwhile. Getting them to explore these feelings and to become involved in designing their courses of study could prove to be the key to their success.

I would be very interested in working with our staff at The Tutorial Center in an effort to adapt MI-inspired strategies to this particular population. My "burning question" would be "How can MI theory inform the development of curriculum materials designed to encourage young adult students to succeed in ABE programs?"

I would like to end this paper with two quotes from the dialogue journal of Donna, one of students who first worked with me on this research project. I have used this selection in my writings a number of times because, to me, it sums up the promise that MI theory holds for adult learners.

On February 5, 1997, after our class discussion about Multiple Intelligences, Donna wrote the following entry in her dialogue journal.

> *I haven't really had time to think about where my strengths are. I just know my weaknesses and that sometimes worries me. I always knew everyone had strengths and weaknesses but I always worried about the things I couldn't do and not the things I could.*

A month after she wrote the journal entry above, I asked Donna to reflect on the completion of our first team building project. Again in her journal she wrote,

> *First of all I really believe that our project was a success for two reasons. 1) We all worked together and worked for something that we thought was important. 2) That you have inspired us to open our minds and have [the] belief that we are capable of almost anything if we really want to do it…I need a new focus and this is very interesting to me. I really want to thank you for being a good friend, teacher and listener. You have inspired me in more ways than one and I never thought I could feel this good about my education and my self-esteem.*