Multiple Intelligences in Practice

Teacher Research Reports From the Adult Multiple Intelligences Study

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Introduction

BACKGROUND AND PURPOSE OF THE AMI STUDY

The introduction of multiple intelligences theory (MI theory) in 1983 generated considerable interest in the educational community. Multiple intelligences was a provocative new theory, claiming at least seven relatively independent intelligences, in marked contrast to the traditional view of a unitary, "general" intelligence (Gardner, 1993a). Because multiple intelligences theory was intended for an audience of psychologists, Gardner's introduction to MI theory, *Frames of Mind* (1993a), had little to say about classroom application. Yet, it has been enthusiastically received by many educators who are aware of the many different "smarts" their students bring to the classroom. They are drawn to MI theory because it supports pedagogy and approaches such as whole language and cooperative learning. As a formal theory based on empirical research, it validates what teachers already know and do when they use diverse classroom practices. For more information on MI theory, please refer to the "MI Basics" web pages on the AMI web site: http://pzweb.harvard.edu/ami/mibasics.htm.

The efforts to apply MI theory that have been documented by Gardner and others have been at the preK-12, primarily preK-8, level. Until late 1996, the adult literacy field had not engaged in a systematic application of MI theory. Adult literacy students, perhaps more than any others, suffer from the consequences of unidimensional views of intelligence, which translate into uniform instructional and assessment approaches that favor logical and linguistic skills. Traditional approaches may have failed to reach and teach many adults when they were children.

In light of the positive experiences with MI theory at the preK-12 level, together with the promise it holds for our field, the AMI Study was conceived. The AMI study is a collaboration between Harvard Project Zero and the New England Literacy Resource Center (NELRC)/World Education under the auspices of the National Center for the Study of Adult Learning and Literacy (NCSALL) at Harvard Graduate School of Education.

The AMI study addresses the question, "*How can Multiple Intelligences (MI) theory support instruction and assessment in Adult Basic Education (ABE), Adult Secondary Education (ASE) and English for Speakers of Other Languages (ESOL)?"* This study is the first systematic, classroom-based research of MI theory in different adult learning contexts.

DESIGN OF THE AMI STUDY

In December 1996, ten ESOL, ABE, GED or diploma preparation teachers from Connecticut, Maine, Massachusetts, Rhode Island, and Vermont embarked on an 18-month journey to understand what the theory of multiple intelligences might have to offer to teaching and learning in their settings. These teachers took on the challenge to help their students identify and use diverse pathways to learning English, basic skills, and content utilizing MI theory.
Selected from among 38 applicants to participate in the study, the AMI teachers came from rural, small town

and urban settings. Their teaching contexts were reflective of the diversity of the adult literacy field. One teacher's classes were conducted in the students' homes in rural Maine. The other ESOL, ABE and GED classes took place in community-based and public school-based learning centers and a community college. The AMI study was incorporated into the regular schedule and practices of each participating program. The weekly hours of instruction varied from 90 minutes to twelve hours depending on the class.

The AMI teachers experienced and examined MI theory and its implications for teaching and learning through a teacher research approach, defined as "… systematic, intentional inquiry by teachers about their own school and classroom work" (Cochran-Smith and Lytle, 1993). The teacher research framework and practices created an open, supportive, and validating context for AMI teachers to pursue their projects. If MI theory was the "meat and potatoes" of the AMI Study, then teacher research was the fine china that held it together and brought us all together around the same table. Teacher research offered a structured yet relatively open-ended way for the AMI teachers to make sense of MI theory according to their own questions and teaching contexts, while still sharing with and supporting each other as a team with a common foundation and goal: understanding and applying MI theory well.

The AMI teachers conducted independent inquiries in their settings, framed by a research question of their choice that related to their practice and MI theory. Thus, MI theory set the parameters for the teacher research questions. In so doing, it provided a unifying theme for teacher research. Everyone was struggling with making sense of MI theory in her context and from the vantage point of her particular research questions. They also shared the same articles and books on MI as a common point of reference as is evident in the "Evolution of My Work and Thinking" sections of the teacher research reports. The fact that MI theory is based on empirical research linked the teacher research to academic research. The fact that MI theory is a theory of intelligence, and not of education, left room for interpretation and debate.

The AMI teachers used multiple ways to collect data, such as keeping a journal, surveying students, and/or conducting observations. They maintained regular contact with each other in order to share their work and give feedback to one another. Regular, structured reflection processes were included in phone and group meetings. Each teacher had a "buddy" for mutual support. The buddies got to know each other's research projects in greater detail and served as sounding boards for each other.

IMPACT OF TEACHER RESEARCH ON HOW TEACHERS VIEW THEIR STUDENTS

Their participation in teacher research methods and activities, in combination with MI theory, was eye-opening for the AMI teachers. They came away from the experience with a self-proclaimed sharper eye toward their teaching and a deeper understanding of their students and themselves.

The teacher research approach, combined with a focus on MI theory, caused a significant shift in how many of the AMI teachers viewed their students. On the one hand, MI pushed them to understand and honor their students' strengths and learning preferences and find ways to utilize them for meeting learning goals. On the other, teacher research required them to pause and analyze what they were seeing and how it did or didn't match their existing assumptions. By and large, the AMI teachers gained greater

appreciation for their students' abilities after they gave students more choices in content, how they processed it, and how they demonstrated their learning. In the teachers' words,

> *I had read about teachers being peers and how this would be effective with teaching adults. I thought this would be hard to achieve. As a result of this project, I realize how much of a peer I am to students.*
>
> *I was surprised by how much I learned from my students. The only way I do math is with paper and pencil. I watched them do math without me with potato chips and a scale.*
>
> *I thought I did a lot of activities and turned the class over to students. But I realized that I really didn't, and when I saw where that could happen I was amazed. I look forward to doing that even more.*
>
> *I found value in asking my students what they want and need.*
>
> *For the first time, I gave students a choice in what books they should take to work on over the summer. Normally I would have given students the book I thought was appropriate for them.*
>
> *I was surprised by the incredible growth I saw in students and how they were able to articulate it to me. Hearing them say it emphasized it more than just my observing it.*

IMPACT OF TEACHER RESEARCH ON TEACHERS

The AMI teachers grew professionally and personally through the teacher research experience. Many felt rejuvenated as well as challenged by the experience:

> *I grew professionally and personally. I learned a lot about my strengths and weaknesses. ... I've become more self-aware and confident.*
>
> *I learned that I have some good hunches. At the beginning, it was difficult. I would explain what I had seen and no one would understand what I was talking about. It has taken me the two years to say what I know in ways that people understand. I've gained a lot of confidence.*
>
> *It clarified my strengths and weaknesses for me; what I struggle with and what I excel at.*
>
> *Having to look at areas that are not my strengths and having to use them was difficult-writing journals and reports. In looking at areas where I do not excel I had to feel what my students feel in the learning process.*
>
> *It nourishes your teaching. It keeps you from getting stale. Keeps you fresh when you're involved in a research project.*

AMI STUDY AS A WHOLE

The data from the teacher research projects informs the overall study across the AMI classrooms. Two related products explicate what we learned in the AMI Study: a research report, to be released in 2001, and the *MI Grows Up: Multiple Intelligences in Adult Education* Sourcebook.

The AMI sourcebook is our attempt at presenting multiple intelligences - theory, critical issues related to its application, and practical examples in a way that is appropriate and useful for our colleagues in the field. It is designed to facilitate what we have come to believe are the key aspects of applying MI theory: developing a good understanding of the theory, and initiating manageable MI applications for instruction and reflection. It is co-authored by the AMI Study co-directors and the teacher-researchers.

PURPOSE OF THIS PUBLICATION

In this publication, we present the AMI teachers' research stories. It complements the *MI Grows Up: Multiple Intelligences in Adult Education* Sourcebook, but it stands alone as a rich account of the research journeys of nine AMI teachers. While the Sourcebook offers information about MI theory and the cross-cutting themes from the AMI experience, this volume sheds light on the individual teachers' research efforts on which the Sourcebook is based. For more information on the Sourcebook, please refer to the AMI web site: http://pzweb.harvard.edu/ami.

Although they follow a common format, each research project is a story onto itself with its unique context and findings. The findings reflect the teachers' interpretation and understanding of their data. They capture what stood out and was salient to the teacher with regard to her question. In almost every report, the voices of students come through as primary evidence for the findings.

ESOL teachers will likely be drawn to the richly textured writings of **Diane Paxton** and **Terri Coustan**. GED and Adult Secondary level teachers will be rewarded with new insights by reading the reports of **Meg Costanzo** and **Martha Jean**. Martha also has much to offer related to MI and students with learning disabilities as does **Lezlie Rocka** with her exploration of MI in a pre-GED reading class where she sought to expand her multisensory teaching approach. Career counselors will find lots of food for thought in **Jean Mantzaris**' thoughtful investigation of the interface between MI and career counseling. Math teachers will appreciate **Bonnie Fortini**'s struggles to use MI to help her students overcome math anxiety. **Wendy Quinones** adds a fascinating research angle with her focus on MI and popular education. Finally, **Betsy Cornwell**'s hope that MI would help her students become more "independent" (self-regulating) learners takes her on a research journey that ends with a poignant examination of various forms of student resistance.

We hope that this volume inspires practitioners to do their own teacher research, and that it informs practitioners about teacher research and multiple intelligences.

ABSTRACT

Betsy Cornwell's research project is motivated by a desire to gain a better understanding of why some seemingly motivated and capable students appeared to be unable or unwilling to do the academic work necessary to reach their own goals. She sets out to assist her students in developing their intelligence profiles, expecting "the intelligence profiles to be a self-reflection tool that would help my students determine their most effective problem-solving techniques." She discovers that "what had appeared to be ineffective problem-solving techniques turned out to be a series of complex decisions and survival skills." Betsy finds herself compelled to examine her own assumptions and values related to teaching and learning. She comes to terms with the fact that, in many instances, they are different from those of her students. "Rather than forcing a student to choose between "my way," and "your way," I found that honoring my students' assumptions can be a starting point for expanding their understanding." This realization leads her to seek and create other tools besides intelligence profiles to help her students meet their basic needs for security and dignity while reaching their academic goals.

Relying on insights gained through student logs, her own journals and observations from her one-to-one or small group tutoring sessions, Betsy develops MI-based ways to encounter student resistance. The report profiles five students as well as specific learning activities informed by MI theory that proved to be turning points in these students' learning process. Betsy concludes, "When my students feel threatened by an academic task, I can now look at the task through the lens of different intelligences and find optional ways to approach it. Often, just a change in materials can provide the way out that allows everyone to maintain their dignity and security."

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.

Terri D. Coustan

ABSTRACT

Terri Coustan's research efforts focus on how to use MI theory in her ESOL classroom in ways that enhance student engagement and learning. Most of her students are Hmong people from the hill country of Laos. Having worked with the same group, more or less, for the previous three years, Terri attributes her AMI findings to her implementation of an MI-informed approach, the one significant change in her classroom over the last year and a half.

Terri's approach is twofold. Through a synthesis of her informal observations of her students, she develops an understanding of their MI-related strengths and learning strategies. She then designs classroom activities that are geared to those strengths and strategies she has observed. She gives students a set of activity options for them to engage in the content of the lesson.

Terri creates alternative "entry points" into the material that give students ways of learning and expressing their understanding beyond verbal means. She finds that the MI-informed choice activities aid students' academic progress, and she offers several cases to that effect in her report. Although Terri finds that her students had difficulty understanding MI theory and were not able to identify their more specific learning strategies, they did improve their ability to reflect on their own learning.

Interestingly, Terry found that giving students choices and setting a trusting context resulted in students taking greater control in the classroom and expanding their cultural norms for classroom behavior. Terri credits her AMI inspired activities for fostering student participaton and assertiveness, a stark contrast to three years of relative student passivity.

ABSTRACT

Bonnie Fortini's research centers on her students' math anxiety and possible ways in which MI-based applications could alleviate it. She uses a visual representation of math anxiety as well as a survey to help her students analyze and talk about their own experience. She also infuses her teaching with MI self-assessments and related discussions about MI theory. Her hypothesis is that knowledge about their own intelligence strengths will enable her students to develop better learning strategies which, in turn, will combat math anxiety.

To a lesser extent, Bonnie designs MI-based lessons. In this she feels constrained by her students' traditional expectations of numbers and workbooks and not much talk in a math class. She also runs up against her own teaching preferences and intelligence strengths. Nevertheless, the few MI-based lessons do draw positive comments from several students.

Bonnie finds that "The introduction of MI theory and the survey-generated illustration of our unique profiles of intelligences seemed to facilitate conversation among students about issues of education, even the more sensitive issues like learning difficulties and math anxiety. Perhaps the opportunity to recognize that each person is a complex collection of strengths and weaknesses created a comfort level that allowed students to open up about problem areas." In the end, Bonnie concludes that "Although students' discussions of MI, their own strengths, and math anxiety do not necessarily imply that MI helped alleviate math anxiety, they did provide the first step in that direction. MI showed itself to be an excellent point of departure for thinking about math anxiety and how students can work to overcome it."

ABSTRACT

In her AMI research project, Martha Jean's challenge is to develop an approach that accounts for the rich diversity of intelligences and possible approaches represented in MI theory, while addressing the quite narrowly defined context of GED preparation. Martha has a particular interest in students who have been diagnosed or demonstrate ADD or LD characteristics. These students tend to have poor attendance and make little progress. Martha's research question is, "Can MI informed lessons help the progress and attendance of LD and ADD students preparing for a GED?"

Martha addresses her question by developing four types of MI-based experiences that respond to the different needs that GED preparation engenders: (1) activities to introduce students to MI theory; (2) "warm up" activities; (3) topic-based whole group activities; and (4) Choose 3 activities. Martha uses the introductory activities as a rationale for the practices in her classroom and to ensure that students understand they each have a unique profile of intelligences into which they can tap to prepare for the GED. "Warm up" activities are fun experiences, such as a "Koosh shoot," that help warm students to doing the more tedious tasks of GED preparation, such as workbook problems and practice tests. Whole group activities are meant to teach specific skills or topics, for example map reading, and help Martha gauge her students' understanding of that skill or topic.

The heart of Martha's approach is "Choose 3" activities. Based on her own observations and on student requests, Martha chooses a GED topic, such as measurement, or planets, or editorial cartoons, and develops about nine activities, among which students choose three to complete. The Choose 3 activities engage students in the material in ways that feel comfortable to them and are most likely to lead to understanding.

Martha's findings bear out the value of an MI-informed approach to GED preparation, particularly for ADD or LD students. These students respond overwhelmingly favorably to the MI-informed activities. In fact, their attendance proves to be significantly better than of the students in Martha's non-MI-informed classes. Martha's data also demonstrates greater progress toward GED preparation for ADD or LD students in the MI-informed classroom.

While Martha's findings strongly suggest the benefits of an MI-informed approach, they must be tempered with the realities of the context. Martha's fourth finding is that whether or how MI theory is applied depends on where students are in the GED preparation process. Namely, as students approach GED-readiness, their studies need to narrow to specific GED content and to discrete test-taking skills, and away from the broad themes of Choose 3 activities.

Jean A. Mantzaris

ABSTRACT

Jean Mantzaris' research focuses on how students' awareness of and participation in MI activities will affect their career choices. Consequently, she infuses her career awareness class with MI-based activities and invites her students to explore their multiple intelligences. For example, in an effort to "dig deep" into each students' intelligence profile, Jean asks the students to reflect on the activities they loved to do as children and to bring representations of these activities into class. She then invites students to consider a possible connection between their childhood preferences and the intelligences they had identified in the class as adults. Through this and other MI-based activities, students become more aware and appreciative of each other's strengths. Jean also observes a "notable increase in student engagement, motivation, camaraderie, and persistence."

Analysis of student comments and their plans for next career steps leads Jean to conclude that awareness of their own intelligences influences students to broaden their career decision-making to be more aligned with their intelligences. "Once students became aware of their strengths, possibilities of new careers abounded." This more complex understanding of their own strengths and the career possibilities that might best correspond to them results in students extending their career exploration rather than identifying an immediate job choice. This proves to be a double-edged sword and hence a concern for Jean as welfare mandated students are under pressure to take any job.

Diane Paxton

ABSTRACT

Coming to the AMI Study with a well-developed and articulated theoretical background, Diane Paxton's challenge is to consider how multiple intelligences theory can inform her teaching in new ways, and in ways that did not interfere or contradict her already well grounded practice as an ESOL instructor.

Like many students, Diane's students initially resisted MI-based approaches, seeing them as unusual, childish, or simply too different from the traditional approaches they knew and had come to expect. Interestingly, and perhaps because of her strong theoretical background, Diane herself resists MI. She finds problematic the notion of assessing students' intelligences, finding something as complex as students' profiles of intelligence too difficult, if not impossible, to assess. Once she recognizes that assessing MI is not prescribed by the theory - in fact, no specific practices are - Diane finds a comfortable place using MI theory as a framework to enhance further her multi-modal approach to teaching English. In the process, students' perceptions change as well. They accept, engage in, and for the most part, become very enthusiastic about multiple and diverse ways of knowing.

Diane accounts for her students' changed perceptions in several ways. First, her students become engaged and enjoy their participation in thematic units and projects that are informed, in part, by MI theory. Secondly, their reflections on their learning activities facilitated by Diane help them recognize and articulate how these new types of activities contribute to their improved English. Diane also notes that displaying project-generated work on the walls helps students recognize the role of this work in their learning English. And developing a trusting environment over time and forming a sense of community is key to students' acceptance and ultimate enthusiasm for the nontraditional approaches in their classroom.

Diane also details some of the contextual factors that support or obstruct use of an MI-informed approach. These include: students' prior educational experience, which shape their expectations; students' socioeconomic background and related investment in the class, and institutional constraints, such as class size and setting.

One of Diane's most significant learnings from the AMI project is the importance of knowing one's own teaching context well and taking a critical approach to the theory or approach in question. In combination, these two elements are key to understanding if and how a particular theory or approach can support one's teaching and learning activities. Diane concludes that MI theory supports good ESOL teaching, and that multiple intelligences theory is a useful construct with a place in her teacher's "toolbox."

Wendy Quiñones

ABSTRACT

As an instructor in a program that helps disadvantaged women identify and take steps toward personal and professional goals, Wendy Quiñones had met with some success using the popular education approach where the overarching goal is social action. For her project, she wonders whether MI theory might enhance her teaching, asking "Will use of a multiple intelligences framework support the goals and practice of popular education in an ABE classroom?"

Wendy considers the key aspects of popular education, such as developing self-respect and respect toward others, facilitating student empowerment, creating an environment based on democratic principles, and using non-traditional and "problem-posing" pedagogical approaches. Towards those ends, Wendy facilitates students' self-assessment and recognition of their own and their peers' intellectual strengths. She creates opportunities for student choice and decision-making in the classroom, and integrates more hands-on and real-world activities in her teaching.

Perhaps the highlight of her MI-informed activities is giving students opportunities to demonstrate their understanding of key concepts through MI-informed projects of their choosing. For example, students write and perform a skit about patriarchal mental health models, create three-dimensional artwork demonstrating images of women, use timelines, graphs, and other graphic organizers to present historical information about women's lives.

Wendy's hunch of a "natural fit" between MI-informed approaches and popular education is validated in her study. She finds MI theory supports her efforts in ways that enhance her teaching methods and the classes' popular education-based goals and strategies. She identifies four related findings: 1) using a multiple intelligences-informed approach helps her align her teaching more closely to popular education principles; 2) using an MI-informed approach creates empowering opportunities for students; 3) an MI framework promotes a more democratic classroom environment; and 4) MI-informed practices serve to increase students' positive sense of self and appreciation of others, promoting respect and interdependence, key elements of popular education.

Through her efforts on the AMI Study, Wendy discovers that it is not only her students who have been powerfully effected: "I feel that both my understanding and my practice have been transformed, and that as a result I am much closer to the kind of teacher I want to be than I was just 18 months ago."

ABSTRACT

Lezlie Rocka's research project, on which her colleague Louise Cherubini collaborated during the first six months, is driven by a quest to understand whether MI theory has anything to offer to their multisensory approach to teaching reading and writing at the low-intermediate level. Lezlie contrasts lessons that were initially designed using a multi-sensory approach to those after she integrated MI theory into her thinking. She realizes that multi-sensory teaching uses the senses to impart information, but it does not entail choices for students to express their understanding. One outcome or change is the addition of choices to the reading comprehension component of her curriculum.

> *We thought that if students were expressing and processing the information in as many ways as possible, this would assist them in using their strongest intelligences to understand the information. . .We began to consistently create lessons that were more interactive and action oriented. Students worked together, gave presentations, acted in skits, organized presentation charts, drew or sculpted scenes, etcetera. They seemed to comprehend the writing well enough that they could teach it to others.*

The choice based activities allowed Lezlie a much better view of her students' comprehension skills and strategies. She provides several examples from her classes that support her conclusion that "The application of MI theory in my reading lessons seemed to cause improvements in specific reading strategies, comprehension, retention, and interest in the reading." She notes that this progress was true for all but two of her students whom she suspects to have severe learning disabilities.