Chapter 2

A Window into the Learner’s Multiple Intelligences

An optimal learning environment is a classroom where the teacher’s job is to assess each individual child, to see “how be or she is smart,” and to use students’ strengths as a catalyst to understanding new, more complex, learning tasks.

(Eric Johnson)

When we recall a favorite teacher, suprisingly it may well be the one who tapped into our multiple intelligences. This was the teacher who knew each of us as an individual, and made us feel smart, perhaps in a variety of ways. Imagine Mrs. Penwarden, that sixth-grade teacher who let you work in groups to learn about the Roman Empire through personally designed projects about being a Roman. She let students become Romans through performances and role-plays: dressing in togas, using Roman numerals for math, and creating a to-scale replica of a coliseum. She even let teams build chariots out of old shopping carts and race them on the school grounds to reenact Roman life. As a culminating experience, the classroom became a Roman forum and marketplace, complete with foods and wares from ancient times. Science study focused on how weather affected peoples’ lives during that time, and the impact of the erupting volcano on the city of Pompeii. There were multiple entry points to the curriculum on Rome and many ways that the unit study was assessed.
Teachers As Researchers of Individuals: Engaging Diverse Learners

These are the kinds of learning experiences that many people, regardless of their age, recall and describe as examples of deep understanding and engagement in a topic or unit of study. This same teacher probably reveled in the talents of children and their unique ways of expressing ideas or of making things. She left the single course textbook to the side and tried to bring learning alive by listening to the interests of individuals in the classroom. This teacher was creating an environment to nurture the multiple intelligences of individual students: noting those who displayed strengths as naturalists, artists, musicians, athletes, scientists, mathematicians, or whatever they might become.

Each of these unique interests was captured somewhere in the ongoing study of Roman life and times. The unit of study was designed to provide choices or multiple entry points to the topic for the diverse group of learners in the classroom. Mrs.
Penwarden extended this philosophy into her teaching approach by encouraging students to demonstrate their learning in any number of formats: using art, drama, simulations, science experiments, or math applications. Like others who apply the theory of multiple intelligences to design curriculum, she used diverse ways of gathering and expressing ideas and allowed students to exhibit them in multiple formats. Figure 2–2, A Planning Framework and Map, shows some of the activities she used to apply MI theory to build this unit plan. The eight intelligences are abbreviated as follows in the figure: L=Linguistic, VS=Visual-Spatial, LM=Logical-Mathematical, BK=Bodily-Kinesthetic, N=Naturalistic, M=Musical, I=Interpersonal, IP=Intrapersonal.

As they observe, listen, and talk to the collection of students in their classes, teachers like Mrs. Penwarden become researchers of individuals. They try to discover a personal interest in each student and tie it to the topic of life in Roman times. By personalizing the learning experience, Mrs. Penwarden uses observations to understand her students’ interests in relation to life in Roman times. She could then work with individual students to design personalized projects around their interests. For example, she observed Adam drawing patterns on his paper and hypothesized that he might be inclined to study the art and symbols of ancient Rome. Giving him a way to use his artistic capabilities in a personalized project, she ignited a new spark for this student in understanding Roman times. Another classmate, Evan, who was interested in Roman art and activities, which drew on visual-spatial, linguistic, and interpersonal intelligences, could join Adam in a personally designed project.

Jane, a student Mrs. Penwarden observed to have a compelling interest in the natural sciences, began to study the physical changes in the earth before and after the eruption of Mt. Vesuvius. After doing her own research, Jane could go on to study the impact of the eruption on Pompeii with others in her group. Jane examined the people and places around that
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Figure 2–2: How Do People Live in Roman Times? A Planning Framework and Map

L+VS+BK
Students write plays about Roman life. Students give oral reports on their choice of Roman life topics.

BK+LM+I
Students build chariot races. Students dramatize their own plays written about Roman times.

LM+VS+I
Students use Roman numerals for math. Students examine causes and effects of the downfall of the Roman Empire.

I+IP
Students work in groups or pairs to complete activities. Students critique each other's work.

N+LM
Students study natural disasters. Students study volcanoes, changes in the eruption on Pompeii.

M+LM
Students study Roman instruments such as the lute. Students study Roman life.

V+BK+LM
Students discover roles played in defining the culture. Students create artistic pieces in those styles.

Students keep a journal chronicling learning in the unit. Students critique and assess their own work.

Roman Life and Times
natural disaster, drawing on her strengths in naturalistic, bodily-kinesthetic, logical-mathematical, and intrapersonal intelligences. The whole class eventually went on to study natural disasters and their effects on the ancient people of Greece and Rome. Threads of history were reenacted as students wrote plays to chronicle how tidal waves and volcanoes hypothetically changed ancient civilizations. They incorporated historic content from their text to make their Roman “dramas” authentic.

Changing the Relationship of Teacher and Student

Ongoing classroom assessment is an art. Through systematically looking at each child’s daily work, and listening to what they say, a teacher can learn more about the individual and what he or she really knows and can do. By observing, collecting, and reflecting on student work, Kathleen, a teacher in an inclusion class, creates a profile of the multiple intelligences of individual students in her third grade. Her classroom of twenty-four students in an elementary school in Cambridge, Massachusetts, has four to five students who are bilingual or have disabilities. She has a teacher associate who works with her to offer students support in language and learning areas. Kathleen researches each individual by assessing and sitting beside them to better understand the diversity of her learners. How does Kathleen begin?

Starting a Profile of a Student: Sitting Beside the Learner

Kathleen observes each child and examines their work using MI theory as a lens to consider strengths related to linguistic, logical-mathematical, musical-rhythmic, interpersonal, intrapersonal, visual-spatial, bodily-kinesthetic, and naturalistic intelligences (Gardner 1983, 1993, 1997). Through daily interactions and observations of what children do, she informally
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assesses individual skills and abilities as evident in student work. She developed a portfolio and profile of Filomena, a bilingual student, to better distinguish a learning problem from a language-acquisition issue:

The child that comes to mind is Filomena, because of her evaluation records. She had been tested over and over and I read the report and put it aside. It did not teach me what she could do [how she was smart].

I needed to know what she can do, what her work showed, and where to begin to best teach her.

I find out so much more by being with the child and looking at student work than from test reports. From watching her over time and documenting her classwork in a focused collection of samples, I learned that she was having clear difficulty with language that goes beyond being bilingual and beyond any developmental questions. I know there are strengths and there has been progress with her, but it has been a tedious process.

Kathleen uses samples of student work and assumes she will look to see “how Filomena is smart” even though specialists’ observations may not indicate this. She begins by sitting beside the learner to discover what she can do. She uses MI theory to look systematically at what this child does well, and where she struggles. Kathleen describes her ongoing observations of Filomena and her examination of work samples from a portfolio:

In the beginning, I thought that she was only speaking Portuguese at home. I was confused, since she speaks mostly Portuguese with her mother, and her father speaks English. Through her daily journal pictures, I learned that he is not at home that much, so she is basically speaking Portuguese most of the time.

Sometimes I get really frustrated because progress is slow. This is when I start collecting pieces of work that are dated into a portfolio. The work shows me that she is making progress. She is developing in areas of literacy, in the words she prints and recalls,
as her samples show. I have confidence that reading will happen. In the portfolio work I infer she is a capable artist, scientist, cooperative learner, and musician. She may not be reading fluently, but she is capable in many other ways as her project work shows.

By sitting beside her I learned that she can match letters and sounds, although she cannot remember the names of the letters. While collecting daily dictation samples, I found that if I give her a sound to her, she may identify the letter. Yes, she is making progress because we were able to try different strategies based on developing an MI profile.

Kathleen observes, documents, and keeps track of student work to create an MI profile which guides her future programming for Filomena:

I see she knows where to look in the classroom to get help. She uses the visual cues in the environment. Her work shows that she copies from charts or anywhere she can see a word.

I never really thought too much about individual issues until I came to an inclusion class. In here we have such a variety of learners that may not appear to have strengths. The portfolios show they are capable and help us use MI theory to change our teaching.

For Kathleen, multiple intelligences became an analytic tool to guide her ongoing observation and documentation of Filomena’s learning. By sitting beside this learner and creating a profile of her strengths in different learning situations, she has found a window into this child’s learning. Now she is more prepared to reach this child, and others who may also be a puzzle because of learning differences.

**Getting Started: Using Multiple Intelligences to Better Understand Individuals**

Applying MI theory means first understanding that all individuals have at least eight intelligences, many of which do not show up in traditional classroom activities, which tend to focus on linguistic and mathematical intelligences. This suggests that
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teachers shift from a notion of measuring intelligence and student learning to a new notion of understanding individual students’ multiple intelligences, by observing and documenting a collection of their work. Portfolios, as collections of work, help teachers to create a profile of student abilities.

Second, to better understand each child’s unique intelligence profile requires a shift in the position of power between teacher and learner. Teachers have to redesign learning tasks to allow them to more often sit beside individual learners to see and hear how they best learn. Knowing them better means teaching them better.

This personalization creates a more inclusive learning environment for the individual student, as well as the group of students in the class. Figures 2–3 and 2–4 are examples of tools to assist readers in creating profiles of their students. A student/teacher profiling chart (on the CD-ROM) allows the student to self-assess his or her abilities related to the intelligences and provides space for the teacher to respond with observations and documentation from student work collections. Additional forms are available on the CD-ROM.

Figure 2–3: Building a Profile of a Learner

Building a Profile of a Learner

Student Portfolio, Self-Assessment, Reflections + Parent Observation, Parent Profile, Reflections + Teacher Observation, Documentation, Reflections
Seeing Individuals in Their Work—Creating a Student Profile Through Portfolios

How do portfolios really help teachers become researchers of individuals? How can teachers create an environment that allows them to observe, document, and keep track of the work of students, including those who have diverse language and learning needs? Miguel’s classroom practices demonstrate how he started using portfolio assessment to define his instructional practice and to differentiate his teaching. Portfolios helped him and others in his school understand the complexity of individual learners’ academic, social, cultural, and linguistic backgrounds. Each learner, according to Miguel’s philosophy about children and how they learn, is unique and capable. However, social interaction is the key to helping adults and children learn together. Miguel’s teaching philosophy is based on a premise that all children like to learn what they are interested in.

Getting Started: Applying Multiple Intelligences to Differentiate Curriculum and Assessment

How does a teacher like Miguel create an environment where MI theory and portfolios are tools of ongoing and regular classroom assessment?

Student work for Miguel becomes evidence of the process and products of his students’ learning as well as the guide to improving his teaching.

Miguel’s Classroom Design: Student Work Folders Become Portfolios

Miguel, a second-grade teacher in an urban public school, keeps track of individual students’ progress by collecting work samples in a portfolio for each child in his class. These portfolios are collections of work that students select to document growth in literacy and other subject areas. Portfolios, for
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To be completed in one-on-one interviews (with student) when used with younger students. Older students will be able to complete it themselves.

1 = almost never; 2 = sometimes; 3 = often; 4 = almost always

- Likes to read
- Tells stories and jokes well
- Listens carefully and effectively
- Has a wide vocabulary—uses words correctly
- Accurately remembers information
- Expresses self well in speaking and writing
- Enjoys tongue twisters, nonsense rhymes, and puns
- Describes or persuades easily when speaking
- Identifies patterns and relationships among objects or numbers
- Calculates numbers quickly, easily, and accurately
- Enjoys brainteasers or games that require logical thinking
- Enjoys playing games of strategy
- Solves problems by reasoning them out
- Enjoys scientific investigation and experimentation
- Is organized
- Enjoys physical activities and/or sports
- Likes to work with his or her hands
- Learns best when allowed to touch and manipulate objects
- Is well coordinated
- Handles tools skillfully
- Excels in dance or theatrical performance
- Mimics others skillfully
- Plays a musical instrument
- Remembers melodies and musical pieces easily
- Frequently chooses to listen to music
- Enjoys singing and has a good voice
- Can tell when a musical note is off-key
- Has a good sense of rhythm
- Can play an instrument “by ear”
- Is able to keep time to music
- Actively cares for a pet
- Is attuned to the natural environment
- Shows interest in weather and weather patterns
- Enjoys working with plants and animals
- Works effectively in a group
- Is involved with clubs or groups
- Takes on leadership roles
- Enjoys being with people
- Has good friendships
- Identifies with and is sensitive to the feelings and moods of others
- Picks up on verbal and non-verbal communication
- Enjoys being alone
- Is aware of own strengths and weaknesses
- Keeps a journal or diary
- Is reflective about self and the learning process
- Can regulate personal feelings and moods
- Excels in jigsaw puzzles, mazes, and visual puzzles
- Draws accurately and well
- Chooses to think and/or represent ideas in pictures
- Can visualize how things would appear from a different point of view (i.e. bird’s eye view)
- Excels in geometry
- Accurately reads and interprets maps, charts, and diagrams
- Enjoys constructing models
- Is sensitive to and aware of color and scenery
- Is artistic

Figure 2–4 Sample Student Profile [adapted from Armstrong (1992) and Haggerty (1995)]
Miguel and his students, become evidence of what each individual values. As he explains:

I keep a portfolio of the child’s writing and other things she or he makes in a folder. This to me is the data on a child. I look at the piece of work when the child is making it. I listen to what the child says about this work. I try to make a note on the back of the paper of what they tell me. I also ask them if they think this piece of work is something they want to save for their portfolio. We decide together which pieces to save. Usually we choose memorable pieces that show lots of growth and competence.

Miguel’s students collect their work in folders, then periodically select work as evidence of a growth area. Working on portfolio collection, selection, and reflection is a regular part of the weekly routine in Miguel’s classroom.

Miguel sets aside thirty-five minutes after lunch on Fridays as his whole-class portfolio time. Every Friday, each student looks back through their folder at the weekly collection of work, making sure that each piece is dated. They select two or three pieces that show growth for that week, and write reflections on these pieces. These weekly selections and corresponding reflections are stapled, tagged, and saved in another folder (portfolio entries). While students are writing reflections on their work, Miguel conferences with two or three students who he has scheduled to meet with on that day. He keeps a calendar posted so students can sign up for monthly portfolio conferences.

Students know when they will regularly share their work with their teacher. Miguel has built a system into his daily routine so that he can sit beside as many children as possible each day. This is how he and other teachers make portfolios a part of their daily routine. The three key steps they follow in the portfolio process are: 1) collection of work, 2) selection of specific work that demonstrates growth, and 3) reflection on what the work represents.

To teach students how to reflect on their work, Miguel uses
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four key reflection questions to help his students regularly take stock of their learning. He repeats these questions orally in class and they are posted in writing on the wall of his room.

As Miguel confesses:

Yes, some families talk to their children and reflect on what they do, but I find that most children need to be taught how to reflect on what they do. In my experience children need to be given language for how to express their reflections in writing. We practice writing reflections during group meeting time and I create a chart of key vocabulary words and phrases to help them explain what they did and how they did it.

To facilitate the collection, selection, and reflection process, Miguel prepares weekly reflection sheets, which are attached to portfolio selections. Students look back at the piece they selected and then fill in their responses to the key reflection questions, noted in Figure 2–5.

For students who struggle to write, Miguel has them tape-record their reflections or he asks a volunteer or older student to help record what students say on the reflection sheet. This simple modification of the reflection process is useful for indi-

<table>
<thead>
<tr>
<th>Portfolio Reflection Time</th>
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<tr>
<td>1. What did you do in this piece of work?</td>
</tr>
<tr>
<td>2. How did you do it? What materials did you use?</td>
</tr>
<tr>
<td>3. What did you learn by doing this piece of work?</td>
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</tbody>
</table>

Figure 2–5: Portfolio Reflection Time
A Window into the Learner’s Multiple Intelligences

individuals who are English language learners or have disabilities that make written expression a challenge. The student portfolio is one part of the documentation that Miguel shares with parents and other teachers about his students. His recorded observations of children, and the notes on their daily activities, add to this assessment collection. This collected data helps him compile his students’ multiple intelligences profiles.

At the end of the year, his students compile approximately ten to twelve work samples that they have selected and reflected on to represent the entire school year’s progress. This collection of student work representing all content areas is called the pass-along portfolio, which denotes the three-stage process—collection, selection, and reflection (see Figure 2–6).

Pass Along Portfolios

This end-of-year final portfolio—the pass-along portfolio—is evidence of growth over the school year. The portfolio contains student work samples from September, November, March, and June. The pass-along portfolio will be sent along to next year’s teacher or to parents as evidence of each learner’s accomplishments. At some schools, these portfolios are saved in a storage area or archive of student work. Mai-Mai’s portfolio, as a pass-along portfolio, is an example of her first- and second-grade years’ story as chronicled in ten pieces of work (as shown on the CD).

It seems like I have to keep observing, documenting and keeping track of what they do, then I can constantly push them to do challenging work at the time when it is most possible (Miguel Guiterrez).

Designing an Interactive Environment: Spaces for Observing and Keeping Track

Miguel’s classroom space and organization reflect his philosophy of teaching and learning as a sociocultural process based on
Multiple Intelligences and Portfolios

Figure 2–6: The Process of Building Portfolios into Your Classroom

interaction. Since his goal is to create a community of learners, he believes that the spaces that children occupy allow for work in small groups in which individual possessions and boundaries do not curtail their interactions. As Miguel explains:

I want to create a community in this room and a sense that the work we do is done together. I am trying to design this into the physical space in the classroom.

When each child has a separate desk, he or she cannot help but worry about their own property instead of shared property. If I had my choice, I would have no desks, and use tables and chairs, adult chairs, too, so they can feel big.
My observations in this classroom suggest that the physical environment helps create a setting in which Miguel can observe and interact frequently with each child, allowing him to create an MI profile of each individual. In his classroom, individual and group work takes place in smaller sectioned areas. There are strategically placed teacher observation chairs where Miguel can observe a single child and keep track of six others. Both he and his reading assistant become strategic observers and informal assessors of children as an integral part of their daily.

Each morning, Miguel rotates around the desks as part of his process of checking in on each child’s reading and journal writing. His morning schedule every day begins with forty-five minutes of journal writing and drawing. After journal time, he has students write answers to open-ended questions that he draws from ideas expressed in student journals. These classroom conversations, built into independent writing time, allows Miguel “to size up” each child’s daily written work. When he stops to look at student work, Miguel questions students about the piece they are working on.

These student-teacher interactions allow time for personalized or differentiated teaching where, as Miguel suggests, he identifies what he needs to teach to improve their writing. In essence, he is scaffolding the children’s learning process by constantly asking questions, asking for revisions, and observing their responses:

As I watch six children doing journals, I see they are confused about the words there, their, and they’re. I stopped the whole group and asked them to tell me when each of these words is used. Then I do a mini-lesson on the board.

They edit their journals and promise me that they understand this now. I ask them in their work to show me they understand specific spellings, meanings, and usage of the words their, there, and they’re.
Multiple Intelligences and Portfolios

Miguel has developed a system for observing, keeping track, and documenting the work of his students that is built into his daily schedule and routine. Using the theory of multiple intelligences, Miguel does specific thinking and planning about the physical space of his classroom. Centers, he suggests, are built into the classroom to combine at least two or three intelligences—offering activities with multiple formats of expression—in words, in pictures, in art, in graphic format, in charts, or in audiotapes. As a reflective tool, Miguel uses a checklist to track his efforts to apply multiple intelligences, as illustrated in Figure 2–7.

Miguel’s classroom includes observation areas and centers designed so that he can actively assess students by sitting beside them. He uses his classroom assessments to offer his students personalized opportunities for learning, and helping him plan MI-based activities. As he plans activities for his learners, he finds that creating focused activities that draw on linguistic or logical-mathematical intelligences is simple, but incorporating music, art, and exploration of nature is more difficult. In his classroom design, Miguel strategically works to include all the intelligences, which are often represented more concretely in specific activity areas:

- **Linguistic, Interpersonal, and Visual-Spatial**—Demonstrated in group meetings, shared reading areas
- **Logical-Mathematical, Interpersonal, and Bodily-Kinesthetic**—Demonstrated in games, math manipulatives
- **Musical and Bodily-Kinesthetic**—Demonstrated in group meetings, cassette area, and literacy chants
- **Visual-Spatial, Bodily-Kinesthetic, and Interpersonal**—Demonstrated in art center, LEGO area
- **Naturalistic, Interpersonal, and Bodily-Kinesthetic**—Demonstrated in group meetings, science center
Miguel is constantly observing children and their preferences in the classroom. For Miguel, the portfolio system and the physical layout of the classroom invite both teacher and learners to use MI theory to reflect on their personal learning experience during daily instruction.

### Table: Reflections on Using Activities Based on MI Theory

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<thead>
<tr>
<th>Multiple Intelligences</th>
<th>Examples of how I target intelligence Area(s)</th>
<th>Areas where I can emphasize this intelligence more</th>
<th>Ideas for portfolio implementation</th>
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<tr>
<td>Logical/Mathematical</td>
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<td>Naturalistic/Nature</td>
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Figure 2–7: *Reflections on Using Activities Based on MI Theory*

Miguel is constantly observing children and their preferences in the classroom. For Miguel, the portfolio system and the physical layout of the classroom invite both teacher and learners to use MI theory to reflect on their personal learning experience during daily instruction.

### Applying MI Theory to the Classroom

**Suggested Next Steps**

- Enrich your classroom with manipulatives, art supplies, musical instruments, hands-on math activities, computers, book making materials to enrich the 8 intelligences.

- Survey students and parents to determine student interests and strengths. Learn what students do outside of school to learn. Invite parents to become a resource to bring their expertise to the classroom.

- Interview specialists—PE, Art, Music, Computers to find student interests and alternative strengths.

Figure 2–8: *Applying MI Theory to the Classroom—Suggested Next Steps*
Multiple Intelligences and Portfolios

Suggested Next Steps

- Provide students with self-directed learning opportunities and independent project work so they can pursue interests in areas of study.

- Try to add activities that involve movement, music, visual arts, cooperative learning and self reflection.

- Use strengths as a bridge to weaknesses. If a student is strong mechanically and challenged linguistically, ask her to write a book explaining how to put together a clock.

Figure 2–9: Suggested Next Steps
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