

# ESSAI

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Volume 7

Article 13

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4-1-2010

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### Recommended Citation

Broda, Mary Beth (2009) "Multiple Intelligences," *ESSAI*: Vol. 7, Article 13.  
Available at: <http://dc.cod.edu/essai/vol7/iss1/13>

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## Multiple Intelligences

by Mary Beth Broda

(Education 1100)

“**F**or a long time, being smart has been determined by a score on a standardized intelligence test, not by how well students learn in a variety of ways” (Saban 72). Howard Gardner was one of the few who saw intelligence as more than just an IQ test. In his book, *Frames of Mind*, Gardner says, “an intelligence entails the ability to solve problems or fashion products that are of consequence in a particular cultural setting” (Gardner, *Frames of Mind*, 6). That book was undoubtedly the best known and most influential book Gardner ever produced. It included seven intelligences, which shocked a system that thought intelligence came only in the sense of math and reading. The multiple intelligences theory includes the following: logical-mathematical, linguistic, spatial, musical, bodily-kinesthetic, intrapersonal, and interpersonal (Guignon). Gardner’s work on Project Zero inspired him to write *Frames of Mind*, and in 1983 his published work would, at first, be praised by few and criticized by many. The professional world was quite unconvinced about Gardner’s findings; he would later say, “a few psychologists liked the theory; a somewhat large number did not like it; most ignored it” (Eberstadt 6) and psychologist James Bruner called his intelligences, “at best, useful fictions” (Eberstadt 6).

Despite the critics’ harshness, Gardner’s theory was not lost in the midst of an inhospitable society. When he would talk about multiple intelligences, he was unexpectedly greeted by large halls entirely filled with people, with administrators trying to shove their way past each other to get a seat. “Hundreds of schools now claim, in varying degrees, to have remade themselves in keeping with the multiple-intelligence theory...Howard is the guru, and *Frames of Mind* is the Bible” (Eberstadt 7). Multiple Intelligences had now become a new idea for shaping education, rather than just a psychological theory. It has provided more ways to educate outside the classroom, changed the way curriculums are taught, provided a way for students to change themselves as well as the world around them, and has provided better and more enjoyable homework assignments for children.

Gardner ironically had no intention of imposing the multiple intelligences idea on the education system. In his paper, “Audiences for the Theory of Multiple Intelligences,” he states, “I should underscore that I have never had a desire to impose MI ideas on any school or community. I want only enough flexibility so that educators who want to try out MI approaches have the space to do so” (Gardner, *Audiences for the Theory of Multiple Intelligences*, 215). Because of multiple intelligences, the colonial system we still have in place has been taken by storm. What was once a psychological theory is now a ground-breaking success in the education world, changing schools’ curriculums, current assessments and evaluations, the way teachers teach, and how students learn.

### *Gardner’s Multiple Intelligences*

- **Linguistic:** ability to understand and use spoken and written communication (ideal vocation: poet)
- **Logical-mathematical:** ability to understand and use logic and numerical symbols and operations (ideal vocation: computer programmer)
- **Musical:** ability to understand and use such concepts as rhythm, pitch, melody, and harmony (ideal vocation: composer)

- **Spatial:** ability to orient and manipulate three-dimensional space (ideal vocation: architect)
- **Bodily-kinesthetic:** ability to coordinate physical movement (ideal vocation: athlete)
- **Interpersonal:** ability to understand and interact well with other people (ideal vocation: salesperson)
- **Intrapersonal:** ability to understand and use one's thoughts, feelings, preferences, and interests (ideal vocation: autobiographer, entrepreneur)
- **Existential:** ability to contemplate phenomena or questions beyond sensory data, such as the infinite and infinitesimal (ideal vocation: cosmologist, philosopher)
- **Naturalistic:** ability to distinguish and categorize objects or phenomena in nature (ideal vocation: zoologist)  
(Moran 25)

*Frames of Mind* originally spoke of seven intelligences, excluding “naturalistic” and “existential.” For each of these intelligences, Gardner was able to see different career paths and talents for each of the students to obtain. Ranging from basketball players to poets, the talents within the intelligences provide a way to see a person's true abilities better than our blind society, where a test score seemingly provides a way to evaluate how smart we are, and what our future can hold.

“Everyone is born possessing the seven intelligences. Nevertheless, all students will come into the classroom with a different set of developed intelligences. This means that each child will have his own set of intellectual strengths and weaknesses” (U.S. Department of Education 14). Multiple intelligences is not just a theory, but it is being used in classrooms around the world as a way to enrich more students' education. Gardner states “I certainly believe that teaching should be systematic, but that does not mean that there is only one systematic way to teach history or biology...If students want to skip around or blend disciplines, let them do so; but our job as teacher is to help students be clear, systematic, and rigorous about consequential matters (Scherer 14).

In the education system, there is constant evaluation, monitoring, and accountability of both teachers and students. In order to evaluate multiple intelligences, two programs show the ability to assess the theory as it is put to action with education. The first is Project Spectrum, which is “an interactive assessment process for preschool children developed in the 1980s at Harvard Project Zero” (Moran 26). It evaluates each of the intelligences individually, instead of putting the theory to a pencil-and-paper examination. Manipulation tasks and spatial orientation are used to evaluate spatial intelligence, along with group tasks to evaluate interpersonal intelligence, and different factors that make up each intelligence are used in evaluation. In other words, the evaluators “set up situations in which a student can interact with rich materials-and teachers can observe these interactions - to see which intelligences come to the fore and which are relegated to the background” (Moran 26).

Another way Multiple Intelligences is being used is in Nordborg, Denmark at the Explorama at Danfoss University. The science park is designed with multiple intelligences as its main basis, and the museum is used by people from all different age groups. There are challenges, games and exhibits for each intelligence and combinations of intelligences. In one activity, people are asked to balance themselves, which integrates the bodily-kinesthetic intelligence, and in another they are asked to balance in a group, which integrates both the bodily-kinesthetic and interpersonal intelligences. There is also a computer program that shows how tone frequencies change by using addition, subtraction, or a combination of different musical qualities; this shows musical, logical-mathematical and spatial intelligences (Moran 26).

In mainstream academic testing, there are often innovations and intelligences that are neglected during the examination. There many activities and games used in the Explorama in which

Multiple Intelligences can shine and truly be investigated. One is a game where its participant manipulates a joystick to control a robot, which moves a cube to a designated area. If only one participant is used, it primarily shows spatial and bodily-kinesthetic intelligence. But if two or more people each control a different joystick (one may involve having the robot put the cube down, another controlling the wheel of the robot), it then involves logical-mathematical, linguistic, and interpersonal intelligences (Moran 26).

Another activity involves two people sitting opposite each other at a table and a ping pong ball is in the center. Each tries to move the ball towards their opponent by relaxing, for relaxation creates alpha brain waves that sensors pick to make the ball move. The game emphasizes self-control, showing the intrapersonal intelligence aspect, but it also involves interpersonal intelligence because each of the participants must be aware of their opponent in order to relax and move the ball (Moran 27). A third activity used at Explorama involves participants taking a computerized questionnaire before they enter the museum to look at their own intelligence profiles. Once they have all been through the museum and have participated in the activities and games, each person takes the questionnaire again, thus being able to assess their own intrapersonal intelligence (Moran 26).

In the classroom, multiple intelligences has taken even greater strides to enhance education than any museum. When multiple intelligence instruction is used at its best, “rich experiences and collaboration provide a context for students to become aware of their own intelligence profiles, to develop self-regulation, and to participate more actively in their own learning” (Moran 27). For teachers, the best way they can implement the theory into their classroom is by making intelligence profiles for each student, which will help them to adequately evaluate the student’s progress (U.S. Department of Education 14).

Take an elementary school on the Tulalip Indian reservation in Marysville, Washington for example. Here, students spend their time rotating through stations to learn about different subjects in school. “To learn about photosynthesis, students might act out the process at one station, read about it at another station, and at others, sing about photosynthesis, chart its processes, discuss plant and human life cycles, and, finally, reflect on events that have transformed their lives, just as chloroplasts transform the life cycles of plants” (Campbell 19). Or in Pittsburgh, a middle school’s art teachers organize their curriculums around student projects and look highly upon the process and the product. In classes like music, visual arts, dance and creative writing, students participate in activities that actual writers, artists and musicians partake in. Or in a visual arts class, a student might work on portraiture for a few weeks and study many well-known artists’ portraits, all with the ultimate goal of displaying, creating and reflecting upon a final work that implements all the skills they have learned from their previous tasks (Campbell 14).

In Konya, Turkey, Esentepe Elementary School has taken multiple intelligences and revolved their entire curriculum around it, taking the entire education process by storm. One second grade teacher explains:

“After I introduced my students to the multiple intelligences theory and started using it in my classroom, I was not surprised to hear, ‘Teacher, I learn best visually, so could you explain this information by drawing a picture on the blackboard?’...the student is saying, ‘I would understand the subject matter better if you taught it in the way in which I can best learn it.’ That level of self-understanding sends a powerful pedagogical message from students to teachers” (Saban 71).

The school realized that the best way to find out what students’ multiple intelligences are is with simple observation. Classroom and specialist teachers observed students for close to two months with a “Checklist for Assessing Students’ Intelligences,” and then came together to discuss their findings about each student’s special intelligences. By having classroom teachers compare their findings with specialist teachers, the school was able to accurately organize students into various age groups for multiple intelligences-linked exploratories (Saban 72).

Esentepe integrates the theory through three structures: core courses and activities,

exploratories, and projects. Core courses and activities give the guidelines that the school follows. Students are at school from 9 am to 5 pm and grades 1-3 take nine courses, which range from English and Turkish languages to computer science and art. Exploratories occur on Friday afternoons where all students participate in two sixty minute sessions of activities geared toward the diverse age groups. The students start first on the exploratories with their strongest intelligence, then spend the next hour working on an exploratory with one of their weaker intelligences. The second exploratory changes every week over a five-week period, so that students are able to not only strengthen their strongest intelligence but also to improve their weaker ones and developing their interpersonal skills (Saban 72-73).

Instead of using the typical homework approach and doing exercises from a book, students have the choice to pick how they want to learn and demonstrate their new knowledge in projects. These cause the students to come up with questions and ideas of at least three methods they have studied. Projects allow students to use apply their knowledge, while taking responsibility for their own learning (Saban 73). Less than one year after integrating multiple intelligences into their curriculum, Esentepe found incredible results in their students, along with receiving local recognition for their improvements, ranging from parents to the media. The School-wide Tree-Planting Festival came from the third grade students' naturalist intelligence project, and in May 2001, the school had more than one hundred applications for only sixty openings for the following year (Saban 73). People are hungry for change in the education system.

The work is never done, as teachers are constantly learning more about multiple intelligences each day. T.R. Hoerr, author of *Becoming a Multiple Intelligences School*, says: "the success of multiple intelligences school depends largely on teacher discussion, collaboration, and professional development. At Esentepe, teachers discuss their ideas, share their curricular plans, and assist one another in refining their professional practice" (Saban 73). Their goal is to influence the way all schools should be taught, and with the recognition they're receiving, they are most certainly stepping in the right direction.

Esentepe is one of the many schools that have incorporated multiple intelligences into their curriculum, and many teachers have debated over which curriculum is best. Because of the discrepancy, countless curriculums have developed surrounded by the theory, and though there are many more, five multiple intelligences curriculums include: lesson designs with a multiple intelligence base, interdisciplinary curriculums, student projects, assessments and apprenticeships (Campbell 15).

The curriculum of lesson designs is surrounded with the idea that multiple intelligences is the entry point of all lesson content. Eeva Reeder, a teacher at Mountlake Terrace High School in Edmonds, Washington, has her students plot X and Y coordinates in the pavement using the large dividing lines in the cement as axes. When they physically do this, she says they gain more about understanding the equations than doing exercises from a book could ever teach them. Reeder is teaching her students geometry and algebra using with the kinesthetic multiple intelligence. In this curriculum, teachers use all of the multiple intelligences as the center of their lesson, by using each intelligence to help children understand the concepts (Campbell 14).

The interdisciplinary curriculum involves teaching the individual disciplines of education and going deeper with them. For example, Montana's Framework for Aesthetic Literacy uses visual and performing arts to have its students think in with inquiry rather than thematically. They might ask questions like: "What is beauty? Who determines the standards for what is beautiful?" or "How do we use imagination to explore our world?" or "How do the arts reflect their cultures?" (Campbell 16-17). These open-ended questions allow students to go beyond the classroom and see a movie, or go to a museum, play or symphony. They are able to make connections and see the meaning of the curriculum on their own without the teacher's help (Campbell 17).

The project curriculum approach involves students doing just what it says in the name:

projects. They typically last from two weeks to two months, each relating to something that's going on around them. In Ithaca, New York, high school students became interested in studying cancer therapies because a fellow classmate was diagnosed with leukemia. Students interviewed doctors and visited hospitals in order to understand what the disease was and to learn about possible treatment options, whether traditional or non-traditional. Some teachers give students up to three projects a year, with the intent that the students will cover more information than normal in the typical classroom (Campbell 17).

In the assessments curriculum, students should “demonstrate their higher-order thinking skills, generalize what they learn, provide examples, connect the content to their personal experiences, and apply their knowledge to new situations” (Campbell 18). Teachers may set the standard for the quality of work, but it's up to the students to use whatever approach they would like in order to learn. Both students and parents are involved at Eleanor Roosevelt Elementary School in Vancouver, Washington. Students individually assess the skills and knowledge they have gained and provide the information in a portfolio format, but the parents also set goals and evaluate their children by looking at the curriculum, student videotapes, and visiting the student's classroom. This truly provides a greater opportunity for students to grow intellectually and also gives parents a greater chance to have their voices heard in schools (Campbell 18).

Gardner suggests different apprenticeships that would not track students at an early age, but rather would help the student achieve a good liberal arts education. Each student would be involved in three apprenticeships, one in an academic area, another in a physical discipline (dance or sports), and a third in an academic area, all while providing feedback of each of the apprenticeships they took part in (Campbell 18). This way, every student is able to evaluate themselves as to which intelligence they exhibit the best, and which intelligences need to be improved.

There are countless examples of how Gardner's theory has impacted the classroom. But his theory has opened up even more doors for students in the classroom today, providing advantages for those schools that use multiple intelligences. There are three main advantages, the first helping the student academically, the second helps students to overcome failures and challenges because they know “how they are smart,” and the third helps the student to have a sense of personal and overall value (Aborn 84).

When students have awareness of their own strengths and what they need to work on, they are able to learn strategies to improve their learning. Multiple intelligences provides that way for students, helping them to understand how to take notes more efficiently or to solve homework problems in the way they can comprehend, clearly helping the student academically. And since they know their strengths, they can overcome failures and challenges because they understand how their minds work in whatever academic situation they might be in, helping them to, once again, overcome academic letdowns (Aborn 84).

But what is most valuable about multiple intelligences is that it helps a student in ways that are found outside the classroom. Matt Aborn discusses how the theory can, in more ways than one, help a student in his article “An Intelligent Use for Belief”:

“Through an understanding of one's own learning needs – both challenges and successes – in the context of a classroom or community of learners, students begin to recognize what they have to offer to the collective group...the theory of multiple intelligences can thus be used as a tool to bring about an equating culture in a classroom, where students come to think of themselves as both successful in need of others, all in the context of a community of learners” (Aborn 84).

Gardner's theory can help a student in ways beyond the classroom, by helping them develop a sense of worth for themselves, and to feel successful. Just because little Jimmy isn't good at math

doesn't mean he isn't worth anything to this world, because he might have a great bodily-kinesthetic skill and be an amazing basketball player. In a society where children are constantly looking for achievement and self-worth, this is one step closer to helping kids to obtain both of those qualities and more.

Multiple intelligences is a real, working classroom tool that is changing the way we look at the education system today. True results are seen when the right curriculums are in place. Teachers are able to help a child improve dramatically in the learning process once they understand their students and have evaluated them. Museums are now accommodating to students to help them understand each of their intelligences. And, when implemented correctly, schools are able to get recognition for their miraculous achievements. It can help children to achieve self worth and accomplishment for themselves, showing them that no matter what intelligence they might have, they have something to offer this world. Just because Monet may not have been able to do a calculus problem doesn't mean he wasn't worth anything. He discovered his ability to paint, and he dramatically contributed to the word "beautiful" with his portraits of the world around him.

In the classroom, the teachers are the conductors, while the children are like the musicians in the orchestra, playing with their individual strengths, but working with those around them to create a masterpiece. And "just as the sounds of string, woodwind, and percussion instruments combine to create a symphony, the different intelligences intermix within a student to yield meaningful scholastic achievements or other accomplishments" (Moran 24). For years, we've been talking about making a change in the education system, and making it a better place for our children to grow intellectually, emotionally, and physically. We've been trying to find that solution to the ever-growing problem of our faulty education system. This is it.

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