Max Brain Power
Multiple Intelligences Re-Imagined

7-1-20

Imagination is more important than knowledge. For knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution. Albert Einstein

Several times a day I give command performances to captive audiences. I have my lines memorized and manage the clock wisely. But I cannot control the response or outcome. Will the homework assignment come back with signs of effort and care? If it comes back at all . . . Two bits of wisdom echo from my mentors: Know your audience and it is my relationship with each student that matters. They need to trust me if they will follow me into unknown tasks requiring their best efforts. Igniting the power of learning is a two-way street.

What makes these particular students tick? What can I do to grab their attention, engage thinking and spark their caring about today's topic? These are difficult questions in an age when standardized tests loom large and drain away classroom hours. It is easy to forget that every brain in my classroom is processing the topic in its own unique way. What can advances in neuroscience do for me and my students today? Is there a bridge from the laboratory to my lesson plan? How can I use imagination to recognize and release each student's unique cognitive powers?

When Howard Gardner introduced the theory of multiple intelligences (MI; *Frames of Mind*, 1983) it was a breath of fresh air that simply made sense to teachers around the globe (see Table 1). It cut through the psycho-babble of IQ scores, standard deviations and percentile ranking. I know that a student is more than a number on a graph of smartness. It makes sense to design lessons that are multi-faceted and authentic. Students are excited and enthused by projects that are *real* and important and tap their strengths. Thinking about lessons in this powerful way is both fun and challenging but then came the deluge of online tests. I lose a week here and another week there. How to keep up? I want to engage students love of music (singing, instruments, and active listening) but there are lists to be memorized for the test. Students are natural movers and performers (kinesthetic gesture, dance, athletics and fine motor skills) but there is no time in the class period for the disruption of games, role playing or charades.

The naturalists seem uncomfortable and out of place in the box of my classroom. I wonder if a pet or some plants might encourage enthusiasm, kindness and a "growth attitude"? What is my classroom ecology that will nurture and sustain their engagement? I am amazed at some student's delightful imaginations and enthusiasm for art, but this is beyond me. I know there are future carpenters, auto mechanics and hair stylists in my classroom who find my wordy lectures tedious.

In fact, I have heard this is the number one complaint by students all around the world- *school is boring*. That's sad and a mystery. Every day at school for me was a new adventure in learning. Some students are only here to socialize—for better or worse. So much emotional turbulence and turmoil! If only I could direct those interpersonal concerns into my subject. How can I activate their empathy, teamwork and leadership skills and not neglect test preparation drills? Such a dilemma.

My administrator gently but persistently reminds us there is no time for the "frills" of multiple intelligences when test scores will be published on the front page of the newspaper. W are all in favor of promoting intrinsic motivation, creativity and developing so-called "soft skills" but those box scores on the front page speak loudest to voters and board members. I am pulled by the force of my students' unique brain waves that light their eyes and empower their young lives. I am cornered by the powers-that-be counting the right answers on testing day. What news from neuroscience can alleviate this tug of war? Are there new tricks for teaching young dogs to love jumping through the hoops of school?

Recent neuroscience evidence compiled from over 500 studies has affirmed coherent neural architectures for the eight multiple intelligences and that each student has a unique profile of processing power (Shearer & Karanian, 2017). It is good to know that science is supportive of common sense. It is obvious that each student has his or her own constellation of abilities and we should not minimize the importance of these differences. The first task of science is to accurately describe what is real and MI theory is a young science of the mind.

What really matters is that practical question we ask ourselves everyday- *So what can I do?* This is where it gets interesting and paying attention to Albert Einstein is helpful (see opening quote). If we are to guide students' evolution, we need to use imagination to bridge between each student's MI strengths and academic skills / knowledge. Neuroscience now teaches us that it is a mistake to think we must choose between rote learning and MI because MI *includes* IQ skills. Of course, logical thinking and reading are important!

We need to create bridges. With the power of imagination we can guide students to use their MI strengths to leverage achievement and empower their drive for success. We can build students' self-knowledge everyday by embedding Intrapersonal skills such as reflection, self-regulation, correction and goal setting into our daily routine. Even the ancient Greeks knew that to Know Thyself was the foundation for success.

How can I do all this without going crazy? Two things. First, we must teach students how their unique brain works so they can use their strengths *on their own*. This is their responsibility, but it is our job to teach and show them how. Second, I need to use MI language to describe those invisible forces of *thinking*. This makes it real to them. When I value their strengths as part of their *intelligence* this empowers them to create bridges into my curriculum.

This is a new way of thinking for students so it will take some time and experimentation to get it right. This creative process will harness Einstein's power of imagination to spark thoughtful and engaged learning. Together we can bring metacognition, drama, Sesame Street and School House Rock into all those difficult topics that students complain are too boring or too hard. This is not a magic wand but when we place self-knowledge and the MI tools at the center of our instruction students will develop the confidence to take creative risks—for the right reasons.

Lastly, neuroscience is teaching us that deep learning is all about *relationships.* Life long learning is not about electronic touch screens and quick fix solutions. Without empathy, understanding and commitment students will not trust us to lead them into the future. When we show them the value of their cognitive and caring power tools then they will be ready to build a life for themselves and a meaningful and sustainable future for us all.

References

Gardner, H. (1983,1993). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.

Shearer, B. (2018). Multiple intelligences in teaching and education: Lessons learned from neuroscience. *Journal of Intelligence, 6*(3), 38. doi:10.3390/jintelligence6030038

Shearer, C. B., & Karanian, J. M. (2017). The neuroscience of intelligence: Empirical support for the theory of multiple intelligences? *Trends in Neuroscience and Education* 6, 211–223.

Table 1. MI Tools for Teaching and Learning

Intrapersonal: *"Know Thyself and to Thine Own Self Be True"*
1) Reflect on your teaching strategies. Which MI tools are missing? Where to expand?
2) Teach students different study strategies based on MI strengths.
3) Connect new information to what students already know.
4) How each student (and you, too!) feels about a topic matters.
5) Use regular goal setting, progress reports and reflection times during class.

Interpersonal: *"Please Understand Me!"*
1) Recognize, empathize, challenge and support each students' MI strengths / limitations.
2) Create respectful classroom culture. Values, rules, respect & conflict solutions.
3) Community service learning action projects.
4) Mentoring, apprenticeships and peer tutoring.

Logical-mathematical: *"Why? Because it's Only Logical."*
1) Tests of calculation, problem-solving and step-by-step critical thinking.
2) Describe, quantify, classify, analyze and synthesize. Create explanatory time-lines.
3) Why ask Why? Promote intellectual curiosity, hypothetical and predictive thinking.
4) Link mathematical and verbal-logical thinking in symbols, words, designs and actions.

Linguistic: *"Tell Me in Words: Written or Spoken and I will Understand."*
1) Explain in words. Have students write out information. Memorize vocabulary.
2) Use Socratic questioning.
3) Create a debate with point-counter point or convincing sales speeches.
4) Tell a story or read a poem.

Musical: *"Sounds Good to Me!"*
1) Use sounds, voice and songs for enhancing presentations, projects & environment.
2) Who are the musically strong students? Involve them often in topic investigations.
3) Teach rhymes, chants and songs as powerful means of memorizing
4) What song best introduces or captures something special about this topic?

Kinesthetic: *"Movement is FUNdamental!"*
1) Use drama, skits, role-playing to embody concepts, ideas and information.
2) Use movement breaks and gestures to enliven math, reading and other academics.
3) Roll up your sleeves and make hands-on learning happen. Constructions and models.
4) Invent a coordination or athletic game.

Spatial: *"What You See Is What You Get. Imagine That!"*
1) Engage metaphorical thinking, "I see what you mean".
2) Use memorable images to communicate. Movies, photographs and performances.
3) Teach mind-mapping and other visual organizers. "Color my world with learning".
4) Beyond the chalkboard: Models, CAD, finger-paints, laser printers and video.

Naturalist: *"It's Alive! Investigations of Life in The Natural World"*
1) Observe carefully and record data of life in a particular environment.
2) Describe relationships among living things and the world.
3) Consider, What is necessary for life to thrive?
4) Capture the essential nature of life in a work of art.

Source: www.MIResarch.org