

"Ask not what your brain can do for you--Ask what you can do for your brain"
Essay by Cynthia Shidner

My Lifelong Learning Goal:

My goal is to live to age 102 or beyond, actively learning along the way. I decided on a career in teaching because I knew that I could enjoy "aha" learning moments every day thanks to my students, guest teachers, fellow teachers, and experts in the field. Several times a week, I say the following to my students and fellow teachers:

"Good question...I'm not quite sure. Let's research it." "Wow, that's a great idea. Tell me more about what you're thinking..." "Can you help me with a project I'm working on? I would love to know your thoughts about....."

Currently, as the gifted and talented coordinator/teacher for grades 1--12, I teach in SIX classrooms during the course of every day--two at the high school, three at the middle school and one at the elementary school. This "helter-skelter" schedule has been a challenge, to say the least, yet it is keeping my brain very active. My administrators encourage me to be creative and innovative, which is why I have stretched beyond my comfort zone to teach courses such as LEGO robotics, iMovie and World Mythology. I find myself in a continuous loop of learning, trying to master concepts and skills with the help of mentors before I work with students on these concepts and skills. My main concern is how to increase the "healthy stresses" related to challenging my brain while reducing or eliminating the "deadly stresses" related to being overwhelmed and overworked. If I want to reach my goal of celebrating my 102th year of learning, I need to follow the "rules" for brain care based on recent research.

My "Brain Care" Concerns:

In a recent [eschoolnews.com](#) article about "game mechanics" and education, the author poses an essential question about our students: "According to '[Futurework: Trends and Challenges for Work in the 21st Century](#)' (from the U.S. Department of Labor) 65 percent of today's grade-school kids will end up in jobs that haven't been created yet. How do we cultivate an empowered workforce, one that is capable of interacting with multiple forms of technology that permeate and transform our lives, while the technology continues to evolve at such a rapid pace?" (quote from [eschoolnews.com](#) article by [Daniel Rabone](#))

As a teacher and as a lifelong learner, I feel as if the ground is constantly shifting beneath my feet. My goal is to chart a course that allows me to teach and learn about new technologies while maintaining the health of my brain and the brains of my students.

My two sons and my students might think that I am a "techno-peasant", yet here are a few of my concerns about the impacts of our modern "virtual world" on our slowly changing brains....

- "screenagers" who seem incapable of communicating without their smartphone or computer screens
- "gamers" of all ages who are sacrificing sleep and connections with real people
- highly distracted students texting under the tables, focused on instant gratification and their internet "memes", ignoring their teachers who are trying to find common ground to teach the Common Core standards

As a mother and teacher, I want to shift from "concerned" mode to communication mode. I want to know how to communicate with students, their parents and fellow teachers about how to maintain their health in this rapidly changing, interconnected, increasingly "virtual" world.

The book [Brain Rules](#) by John Medina is helping me to chart this course towards healthy brain functioning in myself and my students. I can use John Medina's twelve principles for "surviving and thriving at work, home and school" as a framework for my future goals as a teacher, student, parent and caretaker of a healthy brain.

[Brain Rules](#) first principle, EXERCISE: "Exercise boosts brain power."

As an over-worked teacher and full-time mother, I know the importance of at least an hour of daily exercise. As a caretaker of my students' brains, I am very concerned about the trend away from daily exercise in school, due to an increase in time devoted to "core subjects" and high-stakes test preparation. Brain research includes findings about the positive effects of exercise on oxygenation, increased blood flow, and increased brain growth factors. My goal: Advocate for daily exercise in our schools as much as (or more than) I advocate for teaching that follows the [TPACK](#) model. I believe that all educators and administrators should read [Spark: The Revolutionary New Science of Exercise and the Brain](#) by Dr. John Ratey with Eric Hagerman to learn more about how exercise can boost students' academic performance, creativity and overall health.

[Brain Rules](#) second principle, SURVIVAL: "The human brain evolved, too."

John Medina summarized the research on our brain evolution in the following sentence: "The brain appears to be designed to solve problems related to surviving in a unstable outdoor environment, and to do so in nearly constant motion." I plan to do more research on the "gamification" of education, which taps into students' motivation to solve problems to keep their avatars alive in a challenging, ever-changing environment. The book [Reality is Broken](#) and [the TED talk by Jane McGonigal](#) transformed my thinking on gaming and education. I look forward to collaborating with fellow teachers and parents on discussions with students about the negative and positive aspects of gaming and how to achieve a balance between our virtual and real-world lives.

[Brain Rules](#) third principle, WIRING: "Every brain is wired differently."

For the last two years, I have been responsible for the "gifted and talented" program for grades K--12 in Valdez, Alaska. Most importantly, for the last seventeen years, I have been the mother of two "gifted and talented" sons. One turning point for me as an educator was my introduction to "TED Talks" with [Sir Ken Robinson's brilliant lecture](#) entitled, "Do schools kill creativity?" My sons and my G/T students are intelligent in ways valued by our traditional school systems, yet what happens to those students who have a type of intelligence, such as kinesthetic or musical, which doesn't factor into their "IQ" scores? My goal is to engage more students in creative, open-ended work so that they can demonstrate their different intelligences.

[Brain Rules](#) fourth principle, ATTENTION: "We don't pay attention to boring things."

In the book, [Made to Stick by Chip and Dan Heath](#), educators can learn how to design their presentations in ways that are more likely to "stick" in their students' memories. I plan to use this book as well as the Heath brothers article, ["Teaching that Sticks"](#), to present information to students and to teach students how to present information (in speeches, powerpoint presentations, essays, etc.) using these powerful design

techniques.

[Brain Rules](#) fifth principle, SHORT-TERM MEMORY: "Repeat to remember."

In the [Brain Rules](#) chapter about research findings about short-term memory, John Medina explains how more "elaborately encoded" information stays longer in our brains. When I researched Chris Jordan's thought-provoking artwork in his show "[Running the Numbers](#)" and his [TED talk](#), I was struck by Jordan's ability to translate statistics into images on a scale that is memorable to his viewers. Using his artwork as a model, my goal is to teach students how to use images to "elaborately encode" information for their viewers.

[Brain Rules](#) sixth principle, LONG-TERM MEMORY: "Remember to repeat."

One of the first books that changed my outlook on literacy and culturally appropriate teaching is [Teacher by Sylvia Ashton-Warner](#). In the 1950's, the author taught in Maori schools using revolutionary techniques that based literacy lessons on the children's authentic stories. When I worked in the Alaska Native village of Teller with kindergarten students, I helped students to make their own books in which they illustrated and dictated short stories about Inupiaq cultural values such as "love of family" and "hunter success." In this way, students were strengthening these personal memories at the same time that they were working on transferring literacy skills into long-term memory. My goal is to continue using creative writing as well as video projects to transfer literacy and technology skills into student's long-term memories.

[Brain Rules](#) seventh principle, SLEEP: "Sleep well, think well."

In the book [iDisorder by Larry Rosen, Ph.D.](#), the author discusses ways to understand and overcome our obsessive behaviors related to technology. In my role as one of the technology teacher-leaders in my school district, I plan to collaborate with other concerned adults to organize parent/student/teacher discussions on the topics of unhealthy impacts of obsessive technology use, especially sleep deprivation. I will share the [Brain Rules](#) chapter on the research findings about the importance of adequate sleep for learning, nutrition and overall health.

[Brain Rules](#) eighth principle, STRESS: "Stressed brains don't learn the same way."

The book, [How Children Succeed, by Paul Tough](#) has a wonderful sub-title: "Grit, Curiosity and the Hidden Power of Character." In Tough's book as well as Medina's book, I read about the powerful negative impacts of stress, especially in young children. As a teacher, I need to create an environment that builds resiliency and perseverance in students, since these strengths will help them to overcome stresses in their homes and communities.

[Brain Rules](#) ninth principle, SENSORY INTEGRATION: "Stimulate more of the senses."

At a technology conference last year, I heard [Richard Gerver](#) speak about his award-winning work with the [transformation of Grange Primary school](#) in England. In [an interview](#) with a Pagosa Springs reporter, Richard Gerver summarized his vision of 21st century educational goals: "We need to develop innovators, leaders and creative thinkers, not trivia experts. We need a curriculum that works toward that goal...to apply knowledge in contexts that fire the imagination and stimulate a desire to explore further." Grange Primary School was transformed into a virtual town in which students applied their knowledge and greatly increased their motivation to explore and learn more. I would love to find opportunities to create learning environments inspired by Richard Gerver's work and research on the design of "tomorrow's schools."

[Brain Rules](#) tenth principle, VISION: "Vision trumps all other senses."

The brain research findings about the retention of information support the wisdom of the adage, "a picture is worth a thousand words." Too often, teachers stick to the traditional means of presenting information in written form, when graphical form can be much more powerful. The graphic novel [Persepolis by Marjane Satrapi](#) is an excellent example of [this type of curriculum resource](#). My goal is to teach students to design their own graphic novels to synthesize their learning and communicate this learning with others.

[Brain Rules](#) eleventh principle, GENDER: "Male and female brains are different."

In this chapter of [Brain Rules](#), John Medina describes the "typical" gender differences in communication. One of the essential 21st century skills for our students is communication and understanding how to overcome cultural, gender and other differences when communicating. I am very excited about using [QuadBlogging](#) in my future classrooms to develop communication skills in this real-world context.

[Brain Rules](#) twelfth principle, EXPLORATION: "We are powerful and natural explorers."

Teachers and parents of young children have observed how these young minds are geared towards curiosity and systematic explorations of their surroundings. Critics of our traditional school system such as Sir Ken Robinson claim that schools squash this curiosity and intellectual exploration. In [Nicholas Carr's book, The Shallows](#), he warns against the ways that the internet can limit our abilities to think deeply and thoughtfully. When we live in a world filled with "information overload" and multiple distractions, we need to find ways to prioritize our attention in order to learn and communicate. While keeping the spirit of curiosity alive, I plan to help students balance their online explorations with "real world" research and discoveries.