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## **Looking Through a Kaleidoscope: Four Perspectives of Eric Jensen**

Lynda Northern

Norfolk (Va.) Public Schools

*Editor's Note:* Brain research has expanded incredibly since educators were presented with Howard Gardner's (1983) new theory of multiple intelligences in the early eighties. Since that time his idea that learning occurs in multiple ways has gone beyond being a fad to where teachers and teacher preparation programs have recognized the benefits of facilitating learning through various media. Visual aids, creative presentations, and movement have surfaced in classrooms that used to focus mainly on the verbal, linguistic and mathematical lines of thinking, allowing learners to access information on subjects in countless ways (Gardner, 1983; Hyerle, 2004).

Of course success with teaching across the multiple intelligences relies on the gifted teacher, who is trained in development theory and understands the need to guide children to make links between information learned in more than one media. The schools of Reggio Emilia, Italy, have provided educators a vision of schools that help children to represent, revisit, and continuously re-represent concepts. It is a process in which elaboration emerges with each new representation allowing the learner to deepen his or her understanding of a concept over time (Edwards, Gandini, Forman, 1998).

To constructivist educators these ideas make sense. When looking at development we recognize learners within one classroom are all engaged in their processes of understanding content at different points along a continuum of understanding. As constructivists, our process oriented approaches align with Gardner's theory. We believe learning takes place within the context of assimilating and accommodating ideas with practical application experiences. This grounds our practices in the context of concrete examples that lead up to abstract ideas. Therefore, it may be difficult for many of us to appreciate the many new teaching strategies that are being presented to us based on the abstract ideas of brain research; ideas that are not grounded first in practical application contexts.

I have been teaching a Body-Brain Based Learning course for a number of years now, at East Tennessee State University and have been using Eric Jensen's (2005) book,

*Teaching with the Brain in Mind.* I have found this class to be a learning ground for me as well, for it has forced me in my first few years of teaching at the university level, to hone my teaching skills in a manner that allows me to incorporate many of the brain compatible strategies Jensen presents. What I have learned is that these work for my students. Breaking lectures into small segments that are supplemented with small group discussions in which students have time to revisit and re-represent the content (discussions; making charts; games that involve movement, rhymes or music) has kept the students interested and awake, unlike other courses where my planned lectures are generally longer. This has forced me to look at those lectures and adapt them with the brain and body in mind. As Jane Healy (1990) theorized in the nineties, with the onset of media that today's learners now face, we may have a very different brain we are teaching to. We may have learners who are not moving much at home, who spend a lot of their time in front of computers or TV.

Jensen's (2005) book is filled with information on what we now know about how the brain works based on current brain research. Many of the applications for teaching that he presents have been used with success, and in fact many are found to have been researched earlier than the brain research he cites (Bower, 1981; Berg, Blair, and Benson, 1996; Carraher, Carrahar, and Schliemann, 1985; Palmer, L., 2003; Schroth, M. L., 1992; Walberg, H., 1999; Weinstein, C. & Mayer, R., 1986. Susan Kovalik developed her Integrated Thematic Instruction with brain theory in mind. She has found a great deal of success with academic achievement in schools implementing this approach (1994).

The ideas presented in the following piece are written by a student at Old Dominion who attended a lecture by Eric Jensen. Our journal values reports on learning and teaching by students of education as well as educators in the field. Our editorial introduction is meant to assure readers that Jensen's work is theoretically grounded in education and brain research. *Co-Editor JTB*

*"You are only as great as your greatest thought."*

*- Eric Jensen*

As I entered the auditorium for the opening session of the Common Wealth in Education Conference, the glare from the lighting made it difficult for me to see. Even with that hindrance, I immediately spotted the keynote speaker. I had been forewarned by one of his colleagues that he would be the tallest in the room and one of the nicest people I could meet. Both proved to be true. Eric Jensen, author and brain-based education guru was talking with colleagues and handling the last minute details to his presentation. I sat back and reflected on the synchronicity of the past few weeks. My graduate course required a presentation on the work of an eminent leader in the educational field. Since, I am very interested in brain research and its educational implications; Eric Jensen was the obvious choice.

Initially, I came to know Eric Jensen as an author. Instead of reading one book for the class, I read four. From the parts of the brain to brain-based reform, information popped out at me that I wish I had learned during college almost forty years ago. I poured through *Brain-Based Learning* (2000) and *Super Teaching* (1995) highlighting pertinent information that could be used immediately. I looked for opportunities to share his ideas with the teachers I mentored; and even got a colleague on board to co-present brain-based workshops to teachers and parents.

After over twenty-five years of working in the field, Eric's message to educators is finally getting heard. Not only did I learn about the parts and the function of the brain, I gleaned specific strategies to address some of the major difficulties in most classrooms: behavior management, enrichment, attention, and memory. His reader friendly books discuss research findings and their implications, which were then translated into practical strategies that are in harmony with the way brains naturally learn. The visual layout of the book embodies the very principles that were being presented in the text. Graphics, charts, tables, and bolded text allow the reader to easily absorb relevant information. Reading these books is not a one-time experience, the more I went back, the more I wanted.

Amidst the welcoming applause, Eric began his keynote presentation. It did not take long before the audience joined much the same journey as Miss Frizzle takes her students on in her magical yellow school bus. Our bus was called HOPE and our destination was Changed Brains. Prior to boarding, we learned the relevance and purpose of our trip. Our stops would show us ways in which to alter environmental influences and change the brain. First stop: 'Empowerment Opp'. The choice is ours; brain studies reveal that many factors affect the actual brain structure. Stress, bad moods, nutrition, exercise, playing an instrument, trauma, medication, hands on science, boredom, yoga are just a few. Teachers can't control many of these factors but they can target environmental input in the classroom. Now, that's an opportunity that can be empowering. The charts and visuals were attention grabbing. Dendrites and cell structures that showed increased growth before and after learning experiences cultivated the seed of hope, as we reflected on those hard to reach students.

"Circulation Boost" came as no surprise. Eric's reputation preceded his presentation. Get those kids moving. Increase the circulation and the level of brain function and cognition increases. Exercise can affect the production

of new brain cells or neurogenesis, which certainly is optimal in any classroom. The days of prolonged sitting may be coming to end.

“Warm and Fuzzy” reminded us that the emotional climate in our classroom is very powerful to the learning process. Emotional states affect brain chemistry, which once again can change the brain structure. Music, positive social status, safety, validation, positive feedback, drama, and cooperative learning can make the difference in success or failure. Make those affirmations a part of your everyday routine. “I am glad you are part of my outstanding day!”

The time was flying by and we kept wondering about “Skill Station”. Yes, direct, intense, skill building can change the mass of the hippocampus area of the brain quickly. Good news for the advocates of the arts: music instruction, instrument playing, drama, and visual arts can influence memory, creativity, writing skills, cognition, and emotional intelligence to name a few.

The bus became quiet. From everyone’s expressions, it was easy to tell that they were deep in thought. The bright lights and colorful billboards interrupted our personal reflections. Suggestions for a Great Physical Classroom Environment further expanded our thinking: Add a New Strategy a Week, Consistency and Positive Experience-Keep Those Brain Changes Happening, Hope is the Key. To our surprise and disappointment, there wasn’t a “Changed Brains” stop awaiting us. How does one let go of an expectation, to celebrate the process? Then like wildfire, the noise level began to increase. Were people talking about the rest of their weekend? No. The teachers were sharing; their animated faces were revealing the changes that would be made next week. Personal and professional connections seemed to be exploding on all levels. The energy was contagious and as we disembarked the bus driver slowly smiled. He *was* the content master and just like clockwork, we had reached our destination, “Changed Brains”.

I was changed and ready for the interview that I would have in the morning. Traffic detours did not dampen my enthusiasm, but did increase my frustration level, as I just managed to get to our predetermined meeting place on time. I only had a short window of time before the keynote, and I didn’t want to lose it sitting at a blocked tunnel. Colleagues inspired by the keynote greeted me when I got there. They were still in awe that I was granted the opportunity to interview Eric Jensen. I credit Ron Nash, Eric’s wife for the

logistical planning and Eric's generosity to share a portion of his packed day.

I brought a tape recorder, which I practiced with several times the night before. He would have never known it with all my fumbling. He waited patiently and then began as I dealt with the tape recorder, the question sheet, and the copious notes I was taking just in case the technology sabotaged me again. Oh, only to have known what was going on in his brain!

LN: Tell me about Eric Jensen the man.

EJ: I was born in southern California; my father was a marriage counselor and my mother left when I was about two years old. So my dad remarried once, twice, three times. So my dad remarried four times. I came from a family of educators. My mom taught, my dad taught. I always loved boating. Went from school to school. I went to nine schools had 154 teachers. It was a pretty disruptive time growing up. I met my wife Diane when I was in my 40's so I married late in life. It was my first marriage for both her and me. . We have no kids and live in San Diego. My wife is also an educator so a lot education runs in the family.

LN: Is there an experience in your own childhood that set the stage for your life's work?

EJ: It is hard to say in retrospect because you don't know if you are putting the pieces to fit the puzzle I know as a kid and much of the time in school if I liked the teacher or if it was a really engaging talk I did it. My dad couldn't figure out why in middle school I would get A's and D's. He couldn't figure out why that would happen. It didn't occur to him how disruptive my life was. One thing I have is an enormous appreciation for kids who don't have a place at home to study, kids from different backgrounds of abuse that helps me a great deal in having empathy for kids.

LN: You are a mentor for many people in the field right now. Who is mentoring or inspiring you to move your work forward?

EJ: It is hard to say because it changes. It will be someone for a while and then my hero may be for six months or a year and then somebody else does, and then somebody else does. I love to read and I always have three books in my briefcase. I travel and I am sort of a bookaholic. My heroes are the

authors that I read. It is sort of a book of the month club...just what the person is inspiring me right now. My doctoral work is in psychology and that is pretty broad. But in the terms of brain-based teaching, it is actually very wide because it includes things such as nutrition, and how that affects your brain. It includes things like stress because that affects your body and the brain. It includes physical activity because that affects your body and your brain. It includes a lot of good stuff. In other words, I see things as a connection to my work just because how can it not?

LN: You have been promoting working in brain-based education for over twenty-five years. Is that correct?

EJ: Pretty much so.

LN: So many classrooms are still using the stand, deliver and complete the worksheet model. Newton states, "There is one thing that is stronger than all the armies in the world; and that is an idea whose time has come." Do you think the time has finally come for brain-based education to be an integral part of teacher training at the university level?

EJ: I think this is very clear that this is not a fad and that it is not going away. That it is essential understandings and that what's happened is that initially there is a huge amount of resistance as though there is nothing here, or it's new, or it's a fad and over time what has happened at the university level is slowly people are getting things here and there and bits and pieces and the point at which at the university level many will say, "Oh, that brain stuff, we've always been doing that." In other words, nobody likes to admit that they need a revelation in what they do. Nobody likes to admit that they are doing things wrong and no one wants to get their neck too far out because it might get I chopped off and no one wants to look like a fool. So many of the more conservative institutions have been hesitant to endorse anything like this but I can tell you that many of the critics of brain based teaching over the years have very much softened their tune and have backed off as they've seen that there's more and more evidence of what I have been putting out for a long time. The truth is that early on there wasn't a lot of evidence because that is the nature of a shift in a paradigm. All shifts in paradigms mean that at the beginning of it when they shift the curve it gets updated. If it weren't updated there wouldn't be a paradigm shift.

LN: What impact has the increase of technology in all aspects of life had on the brain's development and functioning?

EJ: That's a mixed bag, technology, in terms of kids using technology. A quarter of the brain is devoted to visual processing. In other words, visual processing gets a huge priority in our brain because of safety issues. For example, if there's a brick flying towards your head, we're really good at noticing it and ducking. But that same brain is also the one that is addicted to movement, it's addicted to visual information and it's addicted to emotions and storytelling. So, if you combine movement, storytelling, visual images, guess what? You've got video, you've got television, you've got U-Tube and our brain is designed for social connectedness and now you've got text messaging. In other words, the kinds of technology that kids are using work so well for a good reason and that is, brains are designed not for technology but for how it hooks into our brain. So it's not going away at all. And most of us who are adults use technology as basically a backup, in other words, for most of us our laptops are a backup for our working memory. In other words, we sketch out ideas on our laptop or for our long-term memory, which is to store files, that's what we store them on.

LN: Well...does technology change the brain?

EJ: Of course it does, because all experiences change the brain. So if you use any technology for long enough, it will make changes in your brain. That doesn't mean it's all bad. You know, if you expose yourself to violence, that's a different thing.

LN: What is research revealing about the gifted person's brain? Is there something significant or dominant that makes that different?

EJ: Well, there are many differences. There is no one single difference but there are many differences that you can generalize about the gifted student's brain. One is that there is far better cross-connectivity, as in left to right, right to left hemisphere, than there is in a typical person's brain. Second, there are different baselines for chemicals. For example, you typically have higher levels of chemicals that are needed to encode new learning, or dopamine, which is necessary for working memory. You also have better frontal lobe function, which is necessary to set up our processing capacity. So there are pieces that are part of the gifted brain that are built in, but there's not one characteristic that's a guarantee. In general, those who are

gifted have slightly more mass in their brain, that is, a little bit larger brains. And I've written about this in my book, *Enriching the Brain*, if you want more details.

LN: What has the research shown regarding the use of drama, skits and role-plays in changing the brain? Are they strong strategies to help increase neural connections and grow dendrites?

EJ: First of all, if you look at the end result of drama, kids who are involved with drama at the high school level are among the highest scorers on the SATs. In fact, they score higher than those who play music, than those who are in the visual and technology arts, so something about dramatic arts is good. So, the question is what sub skills do dramatic arts develop? And the ones that get developed include people skills, which is reading emotions and expressing emotions, so it's probably good for things like stress reduction. It develops a sense of coherence and timing, as in, "When do I jump in? When do I start? How many seconds before this? How many seconds before that?" It certainly develops patience and camaraderie, among others. And it certainly is very vitalizing and revitalizing for kids. It's hard to say if all of those sub skills add up. It also requires memory skills, for verbal memory, the memorization skills, and those are very helpful when it comes to taking tests. So, there are a lot of sub skills that would make sense for it to help out kids on tests.

LN: In the interview with Terri Reuter in 2001, you mentioned that you were interested in neurogenesis and mirror neurons. What have you learned that is capturing your attention now?

EJ: Wow. I think I'm always intrigued by the study of the month. It never quits. So, I've been looking a lot at emotional states this month, as in, what does the research tell us on emotional states in the class, like how much of the time our kids are in emotional states that are good for learning versus bad for learning. So, this month, my sort of "flavor for the month" is that, and I think I'm interested in ideas that stick in our head, like things we can't get out of our head, that's another thing I'm interested in. That's this month. Next month it'll be something different.

LN: Do you have something right now that you consider your unfinished work, which is on the back burner?



EJ: Everything. It's a little bit like being on a moving walkway and I'm both observing some type of a landscape or a garden and at the same time I'm one of the gardeners in it. Like, there's a whole lot of cool science going on and at the same time I can stop and pull weeds and plant seeds and things like that. But it's a moving walkway, so there's not an end to it.

LN: What do you envision the educational classroom 10 or 15 years from now to look like?

EJ: It depends on the grade level. So I think with each grade level, whether it's elementary, secondary or the collegiate level, it will be very different. Right now there's such a juggernaut for technology, but much of it is untested, invalidated, and much of the technology that's used in education is more like a convenience and it's driven by cost. It's not driven by quality of learning experience, and that's a real challenge to solve. I'm hoping that in 10 or 15 years that we get closer to solving that problem, as in, for example, a college classroom, how can you use technology to create simulations for learning like for example, someone to be able to learn a virtual small business as opposed to getting a lecture in business. So those types of things are going to be available to a professor where a professor can plug in a CD or whatever's going to be there 10 or 15 years from now and students can have an experience of doing something instead of having somebody tell them. Still, today, most of how technology is used at the university level is, they think they're using technology if they're using PowerPoint in the classroom. That's just a statement about where we are. We've got a long ways to go. At the elementary level, I certainly hope that we continue to do a lot of the smart things, as in emotional intelligence and motor intelligence, social intelligence and that people come to their senses that cramming reading and math down their throats, if it's overdone, becomes counterproductive. Nothing works better for the brain than balance. Everything works together. Nobody wants to go on record as saying we're focusing too much on reading, but the fact of the matter is that you can only get X amount of improvement from your brain every day. You don't have unlimited resources in your brain for change. So, if you're using quality reading programs or skill development in reading, and you use that with a kid for say, 60 minutes a day, there's no evidence that doing it for an extra hour that day will turn anyone into a better reader. The best use of the time might be arts or PE for the other hour. And yet there are schools that are like, drill, drill, drill, because they're terrified.

LN: What is one piece of advice you can offer teachers when they feel hopeless?

EJ: I think the primary message for teachers is that no matter where a kid is at, no matter what their circumstances, that if you know how to make changes in the brain, you can make it happen. In other words, that teachers need to have hope for themselves, as in, they can do it, but they also have to hope that in their own life they can make a difference. So, I think hope is very powerful and the difference is that instead of hope backed by fantasy, it is hope backed by science. That's the message I want teachers to hear, that science supports your reason not only to have hope for every kid but also for yourself, that you can make changes. I wanted teachers to get that message. Teachers are the change agents. Teachers shape brains. They need to hear that over and over and over again. And they need the skills to pull it off. You can change brains through trauma, but that's not a good teaching tool!

Eric's passion for his work was obvious. The warmth that came over him as he mentioned his wife and personal life was instantaneous. Eric's responses to my questions were candid and insightful making it difficult to stay with my agenda. I wanted to mind walk and see where we would go. As the auditorium started to fill up in preparation for Rich Allen's keynote address, the interview drew to a close. With much appreciation, I put the tape recorder away with the knowledge that I still had one more experience with Eric Jensen.

One more time the kaleidoscope changed revealing a different perspective of Eric. He facilitated "Managing Mood and Mischief," based on his work, *Tools of Engagement*. Once again, the topic resonated with me. Behavior management is an integral part of the classroom; it has the potential of undermining the whole learning experience for the students. Eric kept the audience actively engaged as he connected brain research to learner behavior. We learned how to M-O-V-E L-E-S-S R-I-C-E or methods to address three types of students: systemizers, those with overactive/impulsive or those with oppositional brains. Each letter stands for a different strategy that will foster success for the particular type of student. For example, oppositional brains need L-low nonverbals, E-equality, S-serotonin, S-stress management for optimal success. Unfortunately, teachers are often not trained to deal with these students in methods that will correlate to educated He described the characteristics and behavioral interventions. We experienced suggested strategies to change mental states. The workshop

demonstrated that any content can be fun to learn and remembered when presented with brain compatible strategies.

Hope is an intangible essence that is entwined with confidence that an expectation will be fulfilled. Classroom teachers start each day with the hope that the students will grow and flourish academically, socially, and emotionally. Prolonged frustration with external factors can diminish hope and the positive outlook of even the most dedicated teacher. However, hope is not enough to bring about the changes warranted. Eric Jensen not only inspires his audience, he empowers them with concrete strategies and information that can be the catalyst for rich learning environments that will positively impact our students' futures.

Sometimes, external events in life manifest synchronously. I never would have expected the series of events that I have shared in this paper. I never would have expected that 'hope' would be the underlying foundation to present scientific research and its educational implications. At this point, I don't think Eric Jensen could have utilized a better vehicle than one that touches the heart and mind.

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