

Neural Education – Equity at a Cellular Level

Make no mistake—inequity in race and/or gender identity is both an outcome and a process. Too often, inequity determines socioeconomic outcome so that children never get what it takes to thrive in life. But social inequity is way more than race and gender identity. Every child will inherit genes that determine their social hierarchy and life journey. For instance, a child can be born with a short-short expression of the Serotonin Transporter Gene, which will determine his/her life trajectory. Seventy percent of these children will end up in Juvenile Court, detention, gangs, drugs and more. Neuroscience tells us that short-short (as opposed to long-long) expressions of some genes will cause children to become reactive (act out, drop out) in a rewards/punishments two-dimensional educational system. It's not their fault—it's ours (parents and teachers). Ten years ago, we didn't know about Transporter Gene connections to prisons and homelessness. There is no excuse today. As 'upstream' interventionists, **Neural Educators** focus on solving inequity at the source. We recognize that education is critical; teachers are key. Our thesis is simple—to impact inequity, Neural educators level the intellectual playing field; eliminate labeling and stratification; and advance each child (regardless of race or gender) to reach their true potential. It works immediately and forever.



Level Educational Field – No Labeling – Every Child's Potential

Teachers are the first to know when something works and is 'real' for their students. Typically, we are reticent to accept the latest change *du jour*. But when we can solve classroom crises immediately and see a long-term impact, by adopting a set of simple principles that are neuro-centric and accessible, teachers are the greatest proponents. Our explosive growth these past three years has been word of mouth. Following is evidence of a groundswell of support and engagement from teachers as a result of conferences and mini-institutes – many teachers joined Dr. O'Mahony (2017-18 - 19) at NCEE, NSTA, and other in-house course dissemination. As a result, we have organic growth with emergent hubs in WA, OR, TX, PA, UK, and Africa.

- I learned more this week than an entire semester in some classes! -Melissa S
- All educators, students, parents and community members should have this information so that we can help our society grow, develop and get on a healthy path. This is bigger than just the classroom, although that's where it starts! -Laurie Donati
- We lose our orchids every day! -Gayle C
- Finally, a real understanding of what is actually happening with our students -Bruce Leonardy
- Education as process is stuck in the dark ages! This is information we should have received at the beginning of our careers - for kids! -Gayle C.
- This knowledge is priceless and it's FREE! I've paid hundreds for classes and thousands on my degrees. This should be taught in college education programs and at university!
- This the most valuable course I have every taken in education!
- This course is life changing impact on teachers and students
- In order to understand and help our students we must understand what is happening in their brains to help them grow!
- It changes the way I teach!
- We can reach all kids and help them learn how to help themselves -Dawn Pringle
- I am a new teacher and developing my toolbox and philosophy, and I know my students will benefit from what I have learned. -Mark Hanson
- For the first time ever, I was absolutely engaged in a weeklong teacher training!
- If we expect students to know the how and why of content, then we should know the how and why of teaching
- When a student knows how they learn, they see life differently. Teachers need to understand amygdala hijack too! -M. Widmann

Neuro NOT Discipline

Disciplinary incidents are the bane of every teacher's life. Every school collects data to monitor progress in this most vital statistic. Increasingly, disciplinary incidents are responsible for time off-task, and for time



spent in managing classrooms instead of teaching. These incidents increase stress levels for all concerned. Stress is anathema to learning. When a teacher has to stop what she is doing to manage an unruly kid, protect a kid from him/her-self, or indeed protect all kids from unsafe or scary behavior the classroom is disrupted. All children suffer. National trends with regard to disciplinary incidents are dismal. And sadly, incidents are on the rise in most districts countrywide. Disruptive behaviors injure the children involved and impact everyone's capacity to reach their true potential.

Neural Education is solving these issues where teachers are able to get on with the business of teaching in learning environments that are meaningful and productive.

Disciplinary incidents were up 13.5 percent in public schools year over year since 2014
Most of the incidents took place in high schools

Most common infractions are

- willful disobedience
- habitual tardiness
- skipping class
- leaving school without permission

Each of these incidents typically results in a stressful encounter between at least one adult and at least one child. From a **Neuroscience of Learning** standpoint this is anathema to education. These encounters are dangerous amygdala hijack events; reactive freeze, fight, or flight outcomes, producing negative consequences that exacerbate the problem. Behavioral fixes that are normative in k12, and are implemented under the auspices of 'positive' discipline do not, and cannot, work. Behavioral modification 'sometimes' appears to work for **dandelions** (in fact these kids are just gaming the system - what Skinner admitted was 'not learning' but figuring out 'how to avoid' negative consequences), but never works for **orchids**.

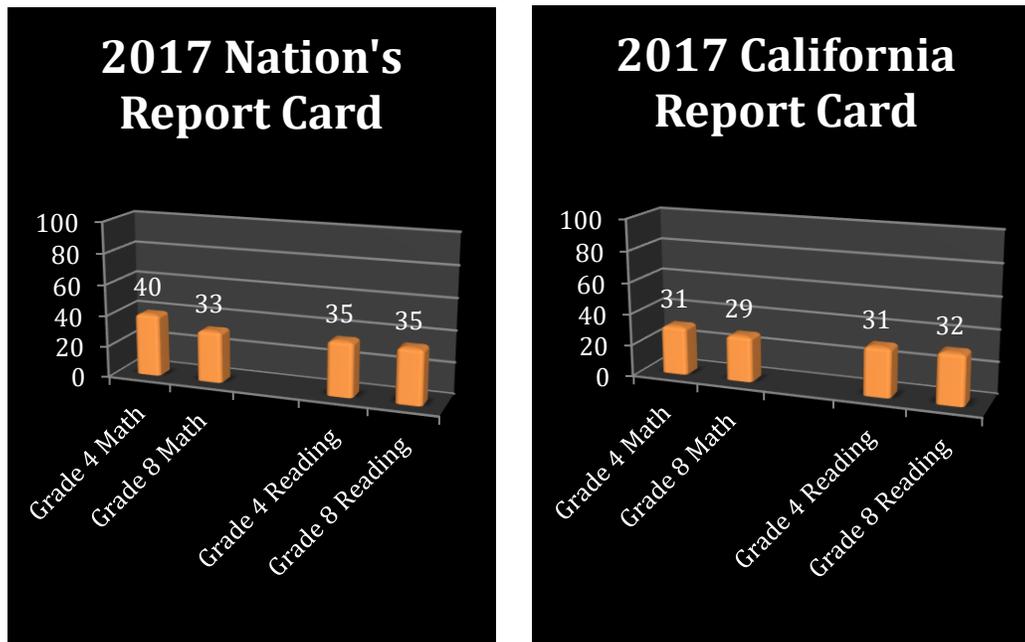


Figure 1. Dismal Report Cards are Normalized (NAEP)

Teachers Write

The following 10 papers from different sites are in progress 2019 for publication early 2020. Purpose is two-fold and serves teachers, students while advancing the field by introducing neuroscience to teaching and learning.

- 1. Neural Strategies that foster Self-Regulation through Co-Regulation and Social Narrative co-construction**
Authors: Mary Snyder M Ed, Coleman Fanin M ED, Kathi Weight PhD, Suzanne Beauchaine, PhD. Steilacoom Historical #1 SD, WA
- 2. Social Narratives and Safe Choices optimize Learning and Student Engagement: A case study**
Author: Tabitha Ellison. Saltar Point Elementary, Steilacoom, WA
- 3. Last Change: the Neuroscience of Engagement through Safety and Identity for at-risk Youth**
Author: Melissa (Missy) Widmann, MA. (Doctoral Candidate) Bethel SD
- 4. Neural Classroom maximizes Word Engagement in Elementary Reading: The Trampoline Experiment**
Author: Karen Colignon-Foley, Christine Colignon-Ray, Ellensburg, WA
- 5. Neuroscience Office by the Bathroom changes an entire School: Power of one teacher**
Author: Jeannine Medvedich, M Ed, Hunt Elementary, Puyallup
- 6. Middle School Boys Club makes visible the fallacy of Extrinsic Motivation**
Author: Jerome Hunter, M Ed, Ballard High School, Seattle
- 7. Impact of Neural ED in a High School Health and Physical Science Classroom**
Author: Teri Farrar, PhD, Physical Education, Pacific Lutheran University, WA
- 8. Teacher Growth in Neural Education Strategies: A longitudinal Study**
Authors: Tony Lyman M. Ed, Katie Stiles, M Ed., Springfield, OR
- 9. Improved Mathematical performance with Neural Learning methodologies: A fun afterschool Program of Robotics**
Author: Tiffany Brafford, M Ed., McCLeary School, Seattle WA
- 10. The Design Help Desk: A Collaborative Approach to Design Education for Scientists and Engineers (2019)**
Authors: Kieran O'Mahony, PhD, John Petz, Jon Cook, Karen Cheng, PhD, Marco Rolandi, PhD., Institute for Connecting Neuroscience with Teaching and Learning, University of Washington, University of Santa Cruz, PLOS ONE, 2019

Teacher Talk

School year 2018-2019 began September four. Since then, many teachers have shared on Twitter, Facebook and email with their cohort and with others how their new information has changed what they do every day. Here is a small sample of this OER behavior (Open Education Resource) sharing.

Karey Richardson

September 21, 2018



So... first period today I had a kiddo all jacked up today (over something that would seem trivial to most) and my usual convo was not working- I picked up two of my lacrosse balls, stood, and started bouncing them. I bounced one to him eventually and (while seated) started to bounce it. We kept talking, but the conversation started to shift. We kept talking and bouncing and I slid “stand up and try it on one foot” into the conversation (he did) we kept bouncing-to one another, switching feet, each with two then exchanging, all while talking. During that 15 minutes we covered why football was frustrating him, how he disappoints his

mom, a girl he likes, and playing football in college 😊🙄❤️❤️
😊🙄❤️❤️ then all of a sudden he looked down at the balls he was bouncing and said, “I don’t understand why this is working” he totally realized what was happening and kept bouncing! I explained the Amygdala hi-jack and a few minutes later he was headed to class and had a great rest of the day [#nueraled](#) [#raftingup](#)

September 19, 2018

Laurie Hanson Donati

Can I just share how proud of my kids I am for the billionth time?



Also... how about the “Floss” for Dominic - I mean... we are 51 weeks post stroke

(not that we are counting 🙄🙄😊). Woot! Woot!

[Laurie Hansen Donati](#) [Missy Morrison Widmann](#) and [Kieran O'Mahony](#) - check out one of the newest neural pathways my ten-year-old stroke survivor has made. Today he’s even faster and moves more fluidly. Myelination!

[Missy Morrison](#) example of a child’s

intentional about myelination!!! Can you share in group??

Jackson McG

Synesthete and processor extraordinaire. Jackson strides in school and at home since he learned amazing processing powers. He sees himself not as a happy, social kid with enormous potential. To expressive colors is a gift that many of us will punish children who are so willing to share that day.



[Widmann](#) The perfect potential when we are the Neural Education

is making amazing more about his as a troublemaker but see the world in all its never share – yet we insight with us every



Beth Trautman Atkerson

I am working with a young man who in the past has been physically aggressive towards me and has rebuked any attempt I had made at connection. This last week, during my prep, he was very obviously in a hijack outside the library. I grabbed four lacrosse balls, took a deep breath and walked out for another attempt at connection. We bounced balls together. Sat cross cross bouncing a ball back and fourth while counting by 2’s,3’s, 5’s and 7’s. I walked away from our ball bouncing in tears. After school he brought his mom to show her what he had learned with the balls. Honestly, one of the best moments of my teaching career as I have been trying to forge this bond for two years. I am the librarian so I will see him for all six years of his elementary career and I am so so thankful for this first step in making connection! Thank you from the bottom of my heart for this framework and these tools! ❤️

Discipline Goes Away

What if it were easy to solve a perennial discipline problem that has dogged American Education for generations! What if we were embarked on a journey – heading to the desired destination (educated, critical thinking populace) but were on the wrong vessel? What if behaviorism were not the panacea that we have accepted all these years! What if teachers had even the most rudimentary knowledge about how the human brain works and how children learn! What if we listened to learning scientists who broke from behaviorism more than 30 years ago to forge a Science of Learning that far transcends what k12 is implementing today. What would such a system look like? The following graphs speak volumes.

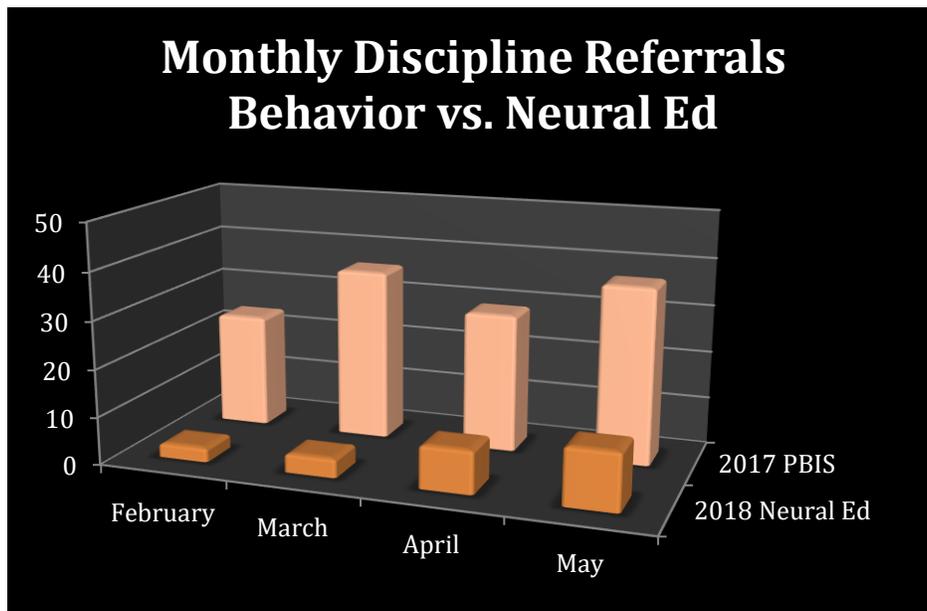
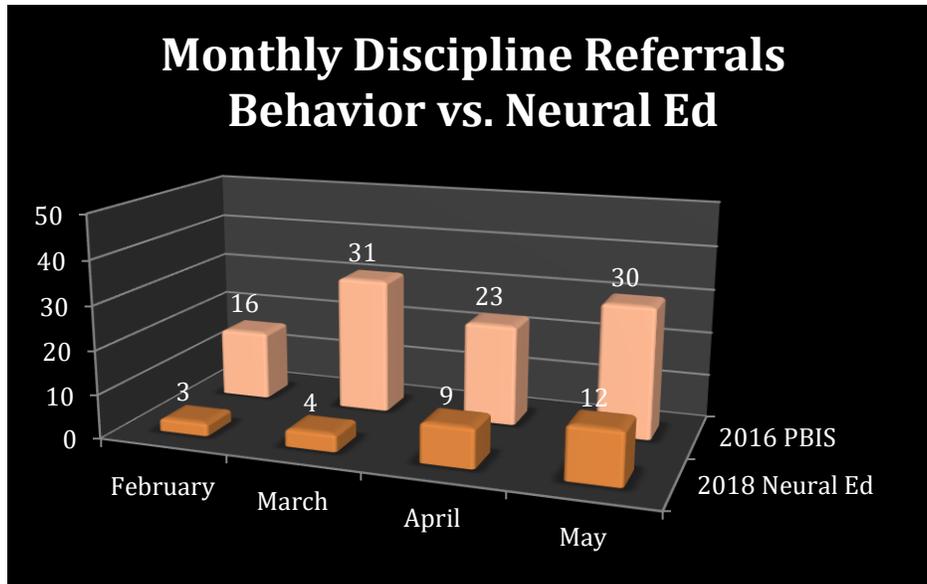


Figure 2. Discipline goes away when Behaviorism goes away

Change doesn't have to be disruptive

Neural Education Course Catalogue

Neurobiology and Social Context (Required)

Neuroscience of Learning (Required)

Impact of Stress on Learning

Addressing Working Memory in the Classroom

Plasticity and Executive Function

Impact of Exercise on Neural Connections

Growth Mindset, Fixed Mindset, and Grit

Creating Agency to support Orchid Child Teaching

Multitasking and the Impact of Technology on the Brain

Co-creating Safe Spaces for Students

Impact of Sleep on Memory and Learning

Impact of Choices on the Teen Brain

Backward Design in a Neuroscience Model

Challenge Mosaic for Personalized Learning

Creating a Kinesthetic Classroom

Keystone Project (Required for Neural Educator Distinction)

