Can Neuroscience and a Behavioral Approach Peacefully Co-Exist?

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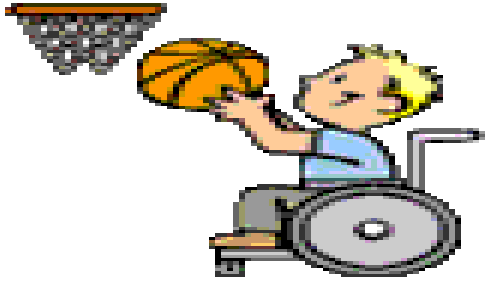
Welcome Message

Can Neuroscience and a Behavioral Approach Peacefully Co-Exist?

Please share with the people around you if you agree or disagree that this is possible? Why or why not?

Agenda for Today



- Celebrate Neurodiversity Brains
- Environments Conducive for Learning
- Relationships
- Social Emotional Climate
- Autism, ADHD, Behaviors
- Neurodiversity and Trauma

Robert Sylwester

- Emotion

- Attention

- Learning

What's important to understand?

- A clean, safe, and clutter free **environment** is conducive to learning.
- Everyone deserves **respect**.
- Brain Research is about how children/adults **learn**.
- **Emotions** determine how much attention a person pays to something.
- Some code of **behavior** is necessary for any community of people to live and work together.
- If we know what the **expectations** are we are more likely to follow them.
- Children are **intelligent** in different ways.
- Many **processing strategies** can help children learn and remember.

Elements of Brain Learning

- Creating a safe learning environment, treating students with caring and respect
- Building a community of learners that help each other succeed, using collaboration techniques
- Pattern seeking device is brain-make it a pattern
- Looking for strategies that improve memory and understanding

Elements of Brain Learning for ALL Learners

- Creating a safe learning environment.
- Know your students
- Provide adequate wait time.
- Give student choices.
- Building a community of learners that help each other succeed.
- Pair physical movement to learning tasks.
- Pattern seeking device is brain-make it a pattern.

Create A Safe Learning Environment

- Relationship, Relationship, Relationship
- Clutter
- Compatible colors
- Tone it down
- Location of learning clubs
- Materials

Behavior Procedures

- Rules are behaviors usually written as negative statements. *No jumping out of swings.* The brain creates a visual image of the behavior being done incorrectly.
- Procedures are personal and social behaviors required to do a task or assignment that is repeated over and over throughout the year. Procedures are the step by step expectations for how something is done. *Playground procedure*

Some Possible Procedures

- restroom
- recess
- assignment
- homework
- entering the room
- leaving the room
- small group work
- audience
- library checkout
- getting lunch
- table clean up
- guest teacher
- medication
- bus arrival
- study room
- file management

“I believe the most important single factor in the learning process is the relationship between teacher and pupil…that provides the basis for effective instruction.” Bender

Emotional Connections

Brain Rules, 2008 John Medina, www.brainrules.net/dvd

"If someone does not feel safe with a teacher or boss, he or she may not be able to perform well. If a student feels misunderstood because the teacher cannot connect with the way the student learns, the student may become isolated."

Emotional Connections with Teachers

Brain Rules, 2008 John Medina, www.brainrules.net/dvd

- Our learning performance may be deeply affected by the emotional environment in which the learning takes place. There is surprising empirical data to support this. The quality of education may in part depend on the relationship between the student and the teacher."

Relationship with Teacher

Robert Marzano, 2010

- "If the relationship is strong, instructional strategies seem to more effective. Conversely, a weak or negative relationship will mute or even negate the benefits of even the more effective instructional strategies."

Dr. James Comer, 2004

- No Significant learning takes place without the presence of a positive adult relationship."

“We have to check our own emotions to see how they are relating to the student”

Thinking about Teaching

- “Three principles from brain research: Emotional safety, appropriate challenges and self-constructed meaning suggest that a one-size-fits-all approach to classroom instruction teaching is ineffective for most students and harmful to some.” Carol Ann Tomlinson

Multiple Intelligences

linguistic/ verbal	word smart
logical / mathematical	number smart
visual / spatial	art smart
musical / rhythmic	music smart
bodily kinesthetic	body smart
naturalistic	nature smart
intrapersonal	self smart
interpersonal	people smart

Adaptations

- Size
- Time
- Level of Suppor
- Input
- Difficulty
- Output
- Participation

Indiana IEP Resource Center

- http:/www.indianaieprc.org/
- https://www.indianaieprc.org/images/lcmats/iepprocess/S11-1DevelopingEffectiveBehaviorInterventionPlan.pdf
- https://www.indianaieprc.org/images/lcmats/iepprocess/S11-3PlanningYourProcess.pdf
- Learner Needs
- What is the behavior telling us?
- Concise, Direct, Specific

Resources for FBA/BIP

- Indiana Resource Center for Autism www.iidc.indiana.edu/pages/irca
- Insource-http://insource.org/resources/special-education-in-
- Patins-indiana/http://www.patinsproject.org/
- DOE https://www.doe.in.gov/specialed/indiana-resource-network

Decide WHAT behavior you most want to target.

1. To start with, you'll want to narrow your focus to one particular behavior to analyze and change.
2. Although it's tempting, don't just choose the thing that most annoys you.
3. Give the child a list of two or three things that they need to improve to succeed in school.
4. Then choose one and create a plan with the child.
5. Set goals.
6. While you're working on one behavior, you may need to let others slide, unless it's a matter of safety.
7. Don't try to change everything all at once.

Keep track of WHEN the behaviors occur.

1. Keep a journal – you need a way to get your emotions out!
2. Use a chart -- for noting every incidence of the targeted behavior.
3. Include the time of day the behavior occurred, and what happened before, during and after.
4. Think of what might have happened directly *before* the behavior, and also earlier in the day.
5. Think, too, of what happened directly *after* the behavior, and whether it offered the child any reward (even negative attention can be rewarding if the alternative is no attention at all).
6. Ask yourself: Does the behavior tend to be more frequent during a certain time of day? After a certain event? When something happens or doesn't happen? In anticipation of something happening? Around transitions? When routine is disrupted? When things are very noisy or very busy? Keep track over the course of a few weeks and look for patterns.

When the brain is threatened it:

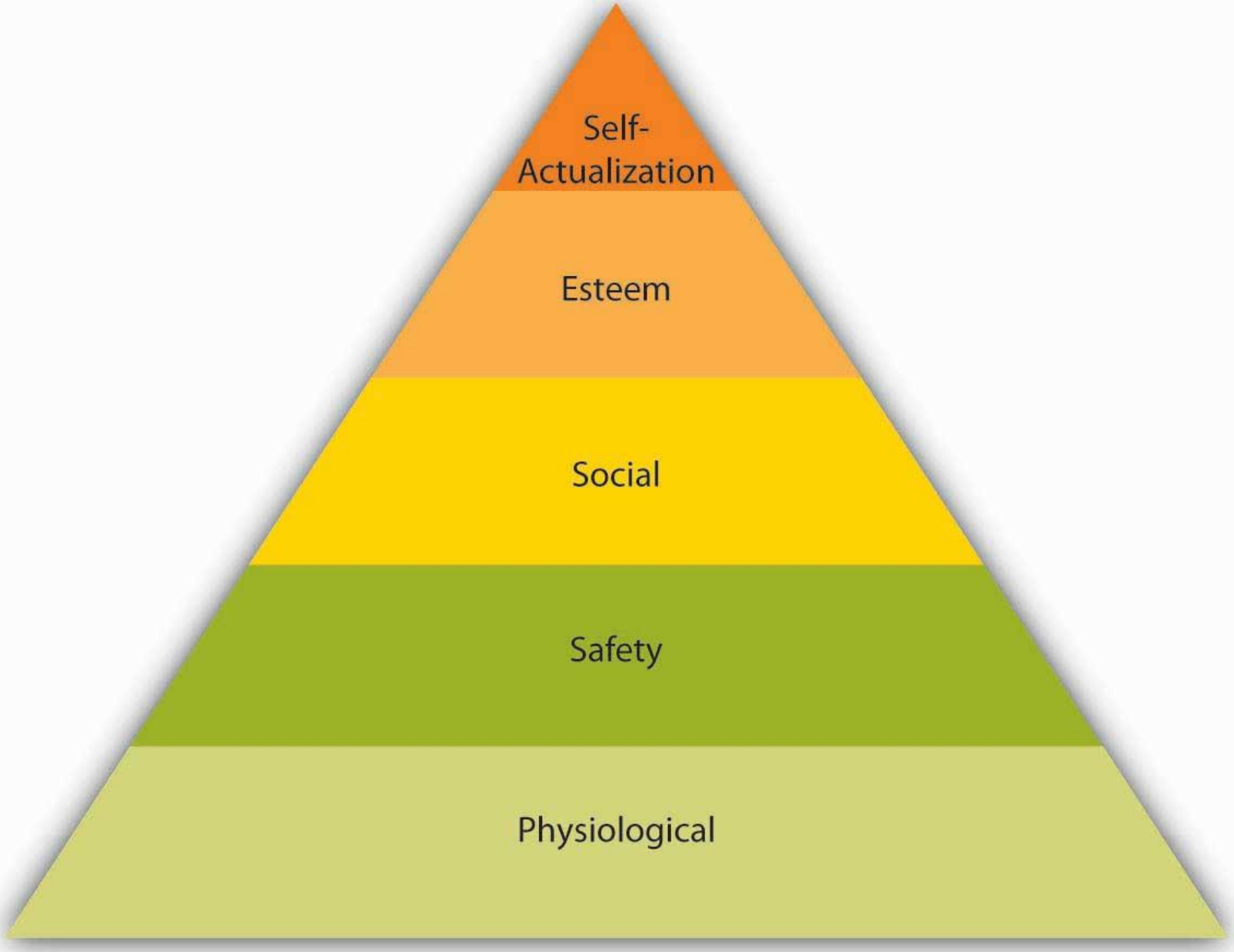
- reverts to familiar “tried and true’ behaviors (temper tantrums, flight or fight, inappropriate words)
- is less able to do “higher order’ thinking
- loses some memory capacity

Threat can be reduced by:

- building an atmosphere of trust and belonging
- using a calm voice
- being kind and encouraging
- developing a positive about children and their ability to learn
- setting clear expectations and procedures

Reflective-Reflexive Response System

Reflective Response	Reflexive Response
A slow analytic reflective system that ▢ compares past experiences and related memories ▢ responds rationally ▢ uses cognitive problem-solving skills ▢ is best suited to non-threatening situations	A fast system automatic system that ▢ leads us to respond fearfully, angrily, or inappropriately ▢ results in memory loss ▢ over-rides the reflective response 


Self-
Actualization
Esteem
Social
Safety
Physiological

Emphasizing Effort

Children who do not see themselves as capable attribute success to ability and not to effort. Many students who fail simply do not try. Encourage each student to improve one little thing every day.

Creating Hope

Children who do not believe they cannot master the curriculum will not improve. Create tasks that can be mastered to build confidence. Start small and work up to more difficult tasks.

Respecting Power

Challenge students refusal to work respectfully. Encourage them to tell you how to help them. Include students in making decisions or creating procedures. Give students responsibilities.

Expressing Enthusiasm

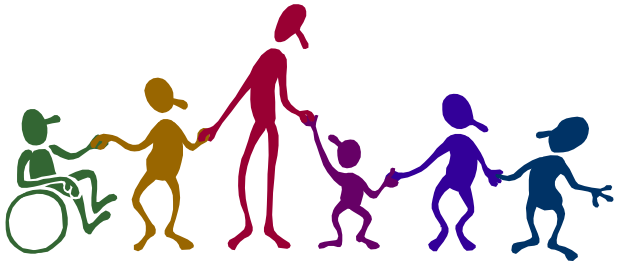
Children like being around people who are positive and enthusiastic. Greet students with a smile and a warm greeting.

Building Relationships

Children need to know that they are more important than their behaviors.

Tips for Behavior Supports

- Build Relationships
- Teach What Is Expected
- Encourage Self Control
- What is the Right Thing to Do-Teach/Model
- Develop Procedures
- Use Solutions rather than Consequences
- Avoid Power Struggles
- Provide Choices
- Use Genuine Praise



Strategies for All Learners "How the Special Education Brain Learns"

- Autism
- Attention Disorder Hyperactivity
- Behavioral Needs

ADHD Strategies to Consider

"How the Special Education Brain Learns-Sousa

- Teach procedures and make sure they are clear
- Post daily schedule and assignments in a clear way.
- Call attention to schedule changes.
- Set specific times for specific tasks.
- Design quiet workspace
- Chunk assignments
- Seat positive peer models around someone with ADHD

More ADHD Strategies to Consider

- Plan academic subjects in morning hours.
- Provide regularly scheduled breaks.
- Do a count down for last several minutes of activity.
- Sincerely praise students for constructive things done.
- Focus on contribution, enjoyment, and satisfaction (away from competition).
- Teach organization and study skills.

Few More ADHD Strategies to Consider

- Mix high and low interest activities
- Seatwork or inactivity for less than 20 min
- Simplify and increase visual presentations.
- Use Memory strategies
- Give visual references for auditory instruction.
- Less is more
- Brain Intervals/Brain Breaks
- Use humor, eye contact, story telling, color

Resources for ADHD/ADD

- SOAR Learning https://studyskills.com/clp/video-the-adhdcircuit/
- TED talk-Jessica McCabe -How to ADHD https://www.youtube.com/watch?v=JiwZQNYlGQI
- add.com
- Understood.org
- ADDitudemag.com
- https://www.edutopia.org/article/emotional-regulation-kids-adhd-lori-desautels
- http://www.chadd.org/NRC.aspx
- http://www.aacap.org/aacap/Families_and_Youth/Resource_Centers/ADHD_Resource_Center/Home.aspx

Videos/Resources ADHD

- http://www.huffingtonpost.com/2011/12/30/adhd-brain_n_1175627.html
- https://www.youtube.com/watch?v=uU6o2_UFSEY
- http://www.healthline.com/health-slideshow/best-videos-adhd#12
- https://video.search.yahoo.com/search/video?fr=mcafee&p=attention+deficit+hyperactivity+disorder+videos#id=3&vid=35e1c33453039c7f8b280074341e0b0a&action=view
- https://video.search.yahoo.com/search/video?fr=mcafee&p=attention+deficit+hyperactivity+disorder+videos#id=47&vid=6797b0243b
- https://www.youtube.com/watch?annotation_id=annotation_3888610771&feature=iv&src_vid=NL483G4xKu0&v=VIcGRffuMLg
- https://video.search.yahoo.com/search/video?fr=mcafee&p=attention+deficit+hyperactivity+disorder+videos#id=47&vid=6797b0243bc

- Please take a look at these videos and add to your learning for ADHD

Strategies to Consider-Autism

"How the Special Education Brain Learns"

- State expectations clearly.
- Concentrate on changing unacceptable behaviors and do not worry about "odd" ones.
- Break tasks into manageable segments.
- Do not rely on emotional appeals by assuming students want to please you.
- Don't confuse lack of tact with rudeness.
- Teach appropriate social responses and social conduct.
- Avoid abstract language (metaphors and irony).

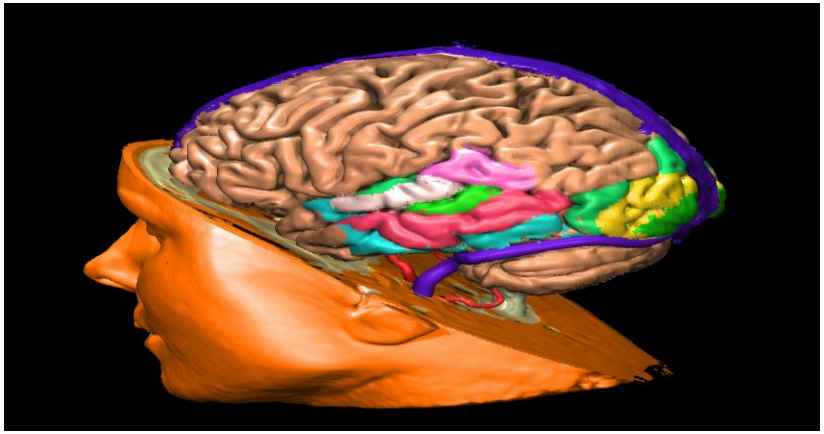
Strategies to Consider-Autism

- Use visual aids whenever possible and support verbal information with blank graphic organizers.
- Need structure-organize materials, clear instructions, establish patterns, provide consistency, stability, and predictability.
- No surprises-prepare students for upcoming changes and have plan for unexpected ones. (yellow dot).
- Lots of repetition.
- Predictable environment and routine-schedule.
- Process time to take in expectations.

Strategies to Consider-Autism

- Have strategy ready in case the student cannot cope due to overstimulation or confusion.
- Look for stressors in their environment and try to reduce or eliminate them.
- Give students space and time.
- Use an unemotional tone of voice when giving directions.
- Give sincere praise.

Sensory



- “In a groundbreaking new study from UC San Francisco, researchers have found that children affected with Sensory Processing Disorder (SPD) have quantifiable differences in brain structure, for the first time showing biological basis for the disease that sets it apart form other neurodevelopmental disorders (Bunim, 2013)

Sensory and DSM 5

- Sensory criteria has been added to the diagnostic criteria for Autism Spectrum Disorder
- Sensory Integration is the “process of organizing sensory inputs so the that the brain produces a useful body responses and also useful perceptions, emotions, and thoughts. Sensory integration sorts, orders, and eventually puts all individual sensory inputs together into a whole brain function. When the functions of the brain are whole and balanced, body movements are highly adaptive, learning is easy, and good behavior is a natural outcome.” (Ayres, 2005)

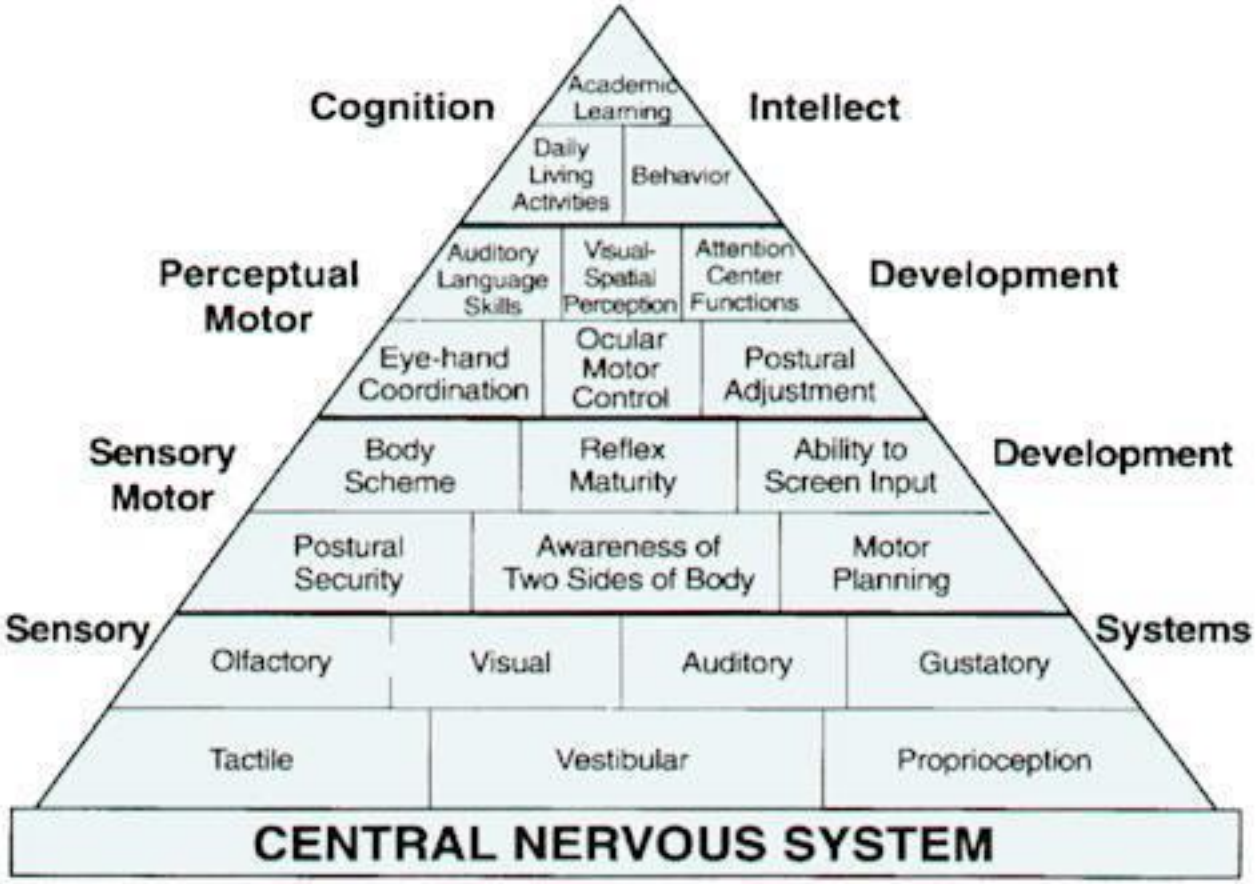


Figure 5. Pyramid of Learning. (Williams & Shellenberger, 1-4)

Table 3.1
Location and Functions of the Sensory Systems

System	Location	Function
Tactile (touch) 	**Skin** – density of cell distribution varies throughout the body. Areas of greatest density include mouth, hands, and genitals.	Provides information about the environment and object qualities (touch, pressure, texture, hard, soft, sharp, dull, heat, cold, pain).
Vestibular (balance) 	**Inner ear** – stimulated by head movements and input from other senses, especially visual.	Provides information about where our body is in space, and whether or not we or our surroundings are moving. Tells about speed and direction of movement.
Proprioception (body awareness) 	**Muscles and joints** – activated by muscle contractions and movement.	Provides information about where a certain body part is and how it is moving.
Visual (sight) 	**Retina of the eye** – stimulated by light.	Provides information about objects and persons. Helps us define boundaries as we move through time and space.
Auditory (hearing) 	**Inner ear** – stimulated by air/sound waves.	Provides information about sounds in the environment (loud, soft, high, low, near, far).
Gustatory (taste) 	**Chemical receptors in the tongue** – closely entwined with the olfactory (smell) system.	Provides information about different types of taste (sweet, sour, bitter, salty, spicy).
Olfactory (smell) 	**Chemical receptors in the nasal structure** – closely associated with the gustatory system.	Provides information about different types of smell (musty, acrid, putrid, flowery, pungent).

From: Asperger Syndrome and Sensory Issues – Practical Solutions for Making Sense of the World by B. S. Myles, K. T. Cook, N. E. Miller, L. Rinner, and L. A. Robbins, 2000, Shawnee Mission, KS: Autism Asperger Publishing Company. Used with permission.

Resources on Autism and Sensory

- Indiana Resource Center for Autismwww.iidc.indiana.edu/pages/irca
- Special Services of Johnson County and Surrounding
- SSJCSS Pinterest Page
- Kris Baker Pinterest Pagekbaker@ssjcs.k12.in.us
- 317-738-5459•SSJCSS
- •Kris Baker Sensory Board on Pinterest
- •Sensory Integration Ideas for Teens –Middle/High School Students
- •SensorySmarts.com
- •Pocket Full of Therapy
- •PATINS Lending Library (Indiana Only)


MY SENSORY BOOK:
Working Together to Explore Sensory Issues and the Big Feelings They Can Cause: A Workbook for Parents, Professionals, and Children
Lauren H. Korstein, LCSW
SECOND EDITION
Sensory Issues and High-Functioning Autism Spectrum and Related Disorders:
Practical Solutions for Making Sense of the World
Brenda Smith Myles, PhD, Kelly Mahler, MS, OTR/L,
Arnie and His School Tools
Simple Sensory Solutions That Build Success
Written and Illustrated by Jennifer Veenendall
Why Does Izzy Cover Her Ears?
Dealing with Sensory Overload
Written and Illustrated by Jennifer Veenendall
Revised and Updated Edition
The Out-of-Sync Child
Recognizing and Coping with Sensory Processing Disorder
"The Out-of-Sync Child has become the parents' bible to [Sensory Processing Disorder]."
—The New York Times
Carol Stock Kranowitz, M.A.
New Preface by Lucy Jane Miller, Ph.D., OTR
CAROL STOCK KRANOWITZ, M.A.
Author of The Out-of-Sync Child
The Out-of-Sync Child Grows Up
Coping with Sensory Processing Disorder in the Adolescent and Young Adult Years
Foreword by LUCY JANE MILLER, PhD, OTR
Author of Sensational Kids
REVISED EDITION—INCLUDES NEW ACTIVITIES AND UPDATED INFORMATION
the Out-of-Sync Child Has Fun
Activities for Kids with Sensory Processing Disorder
Carol Stock Kranowitz, M.A.
Foreword by Trude Tuersquist, PhD, OTR/L

Resources

SSJCSS Sensory Resources

- •Sensory Accommodations Suggestions
- •IRCA Sensory Integration: Tips to Consider
- •Sensory Processing Disorder Resource Center
- •50 Heavy Work Activities for Kids
- •Sensory Smarts Checklist
- •Developmental Pathways for Kids Sensory Processing Checklist
- •When in Doubt Heavy Work
- •Sensory Integration Treatment Ideas Dinosaur PT

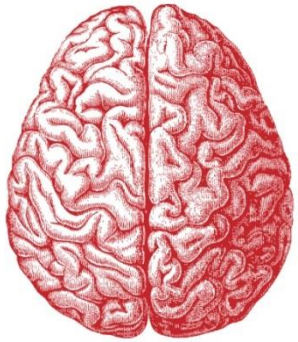
Trauma and the Brain

- Judy Willis MD, M.Ed
- Dr. Lori Desautels-Butler University
- Michael McKnight-UnWritten
- Dr. Allan Schore
- Gabor Mate MD
- John R. Seita/Larry Brendtro

Thinking Thoughts

- “Inappropriate Behaviors Are Driven by Old Traumas, Neurological Limitations, and the Appropriate Urge to Survive”

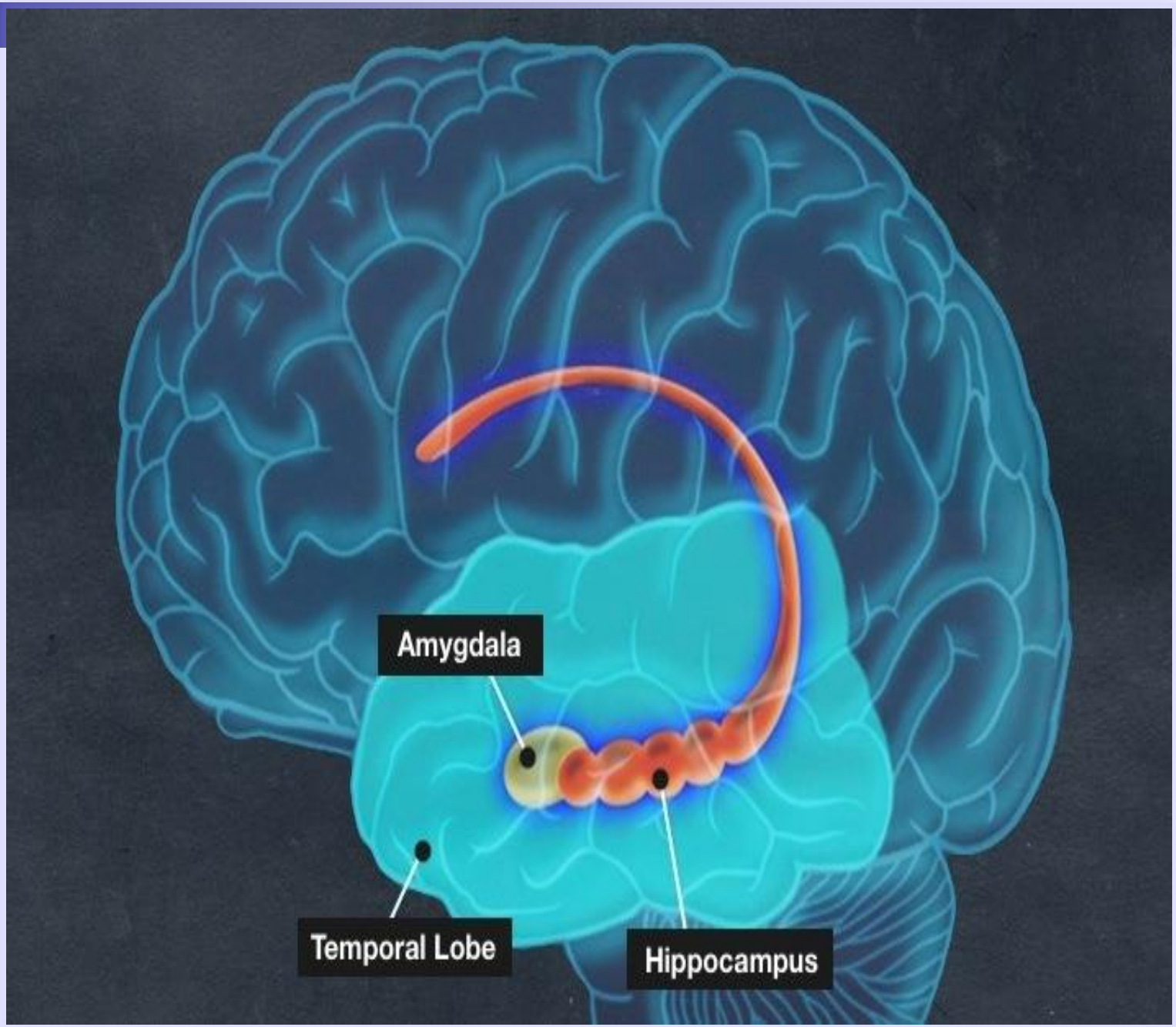
Connected Child



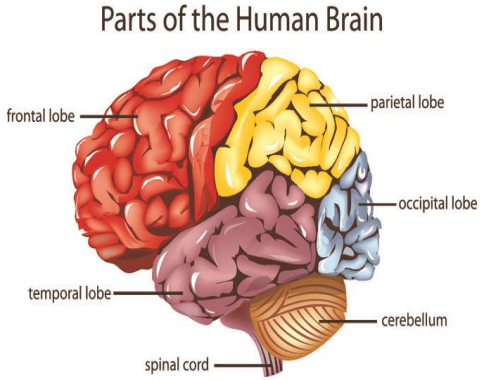
"What do I do?"

Trauma-Informed Support for Children

ECHO PARENTING & EDUCATION
www.echoparenting.org


Amygdala
Temporal Lobe
Hippocampus

“Attached to the amygdala is the seahorse-shaped hippocampus, essential to memory consolidation. Stress interferes with hippocampus processes involved in memory making (Sprenger, 2007), so ensuring a safe and caring environment is well advised. We may want to share with our students that our awareness of the proximity of the flight-or-fight structure of the amygdala to the memory-making structure of the hippocampus helps us appreciate the importance of creating and sustaining safe and positive environments that help make their learning experiences indeed memorable.” (Roberson)



Concerning a Teacher's Influence:

"I have come to the frightening conclusion that I am the decisive element in the classroom. It is my personal approach that creates the weather. As a teacher, I possess a tremendous power to make a child's life miserable or joyous. I can be a tool of torture or an instrument of inspiration…In all situations it is my response that decides whether a crisis will be escalated or de-escalated and a child humanized or dehumanized." (Haim Ganott)

What Questions?

Individuals who engage in problematic behaviors present a tremendous challenge to those who live and work with them. As practitioners learn more about the role of neurology in behavior, there may be an inclination to shift away from a behavior-based approach. However, the two are not mutually exclusive. Conducting a functional behavior assessment thru the lens of neuroscience requires us to take a deeper look into what is driving behavior. Moreover, many of the strategies used in a neuroscience approach are consistent with those used in both ABA and positive behavior supports. Examples will be presented and a case study used illustrate.