

HPD Parking Garage Pass

Issues in Autism Conference

Saturday, April 6, 2019



8:00 A.M. – 4:00 P.M.

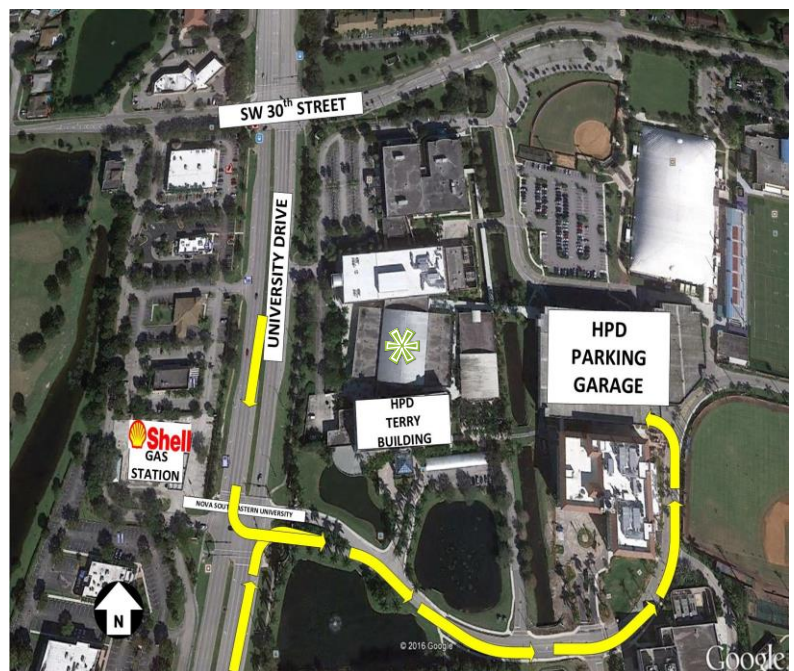
***DISPLAY THIS PASS ON THE DASHBOARD
OF YOUR CAR WHEN YOU PARK***

Directions to Parking Garage and the HPD Building:

From I-95, north or south, or Florida's Turnpike, north or south, take I-595 exit, westbound. Proceed on I-595 to University Drive; turn left and proceed southbound on University Drive to SW 30th Street; turn left onto SW 30th Street and proceed approximately 50 yards turn right and follow the road into the HPD Garage.

Place this pass on your dashboard to avoid being ticketed.

The HPD Building is west of the garage building.



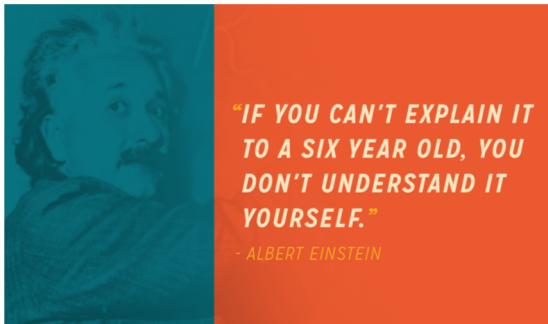
THE BRAIN AND ASD AND ITS IMPACT ON INSTRUCTION, ACADEMICS, AND CHALLENGING BEHAVIOR

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brenda_myles@mac.com

NOT ALL SLIDES ARE IN YOUR HANDOUTS



My Credo

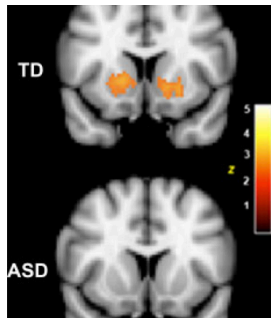


THERE IS NO SINGLE
FOCAL DIFFERENCE IN
THE AUTISTIC BRAIN

ASD IS A HETEROGENEOUS
DEVELOPMENTAL
DISORDER

REINFORCEMENT

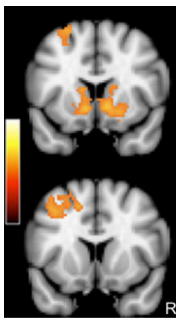
Reinforcement



- Reward center in the brain: mesocorticolimbic systems
- Brain activity associated with token reinforcement

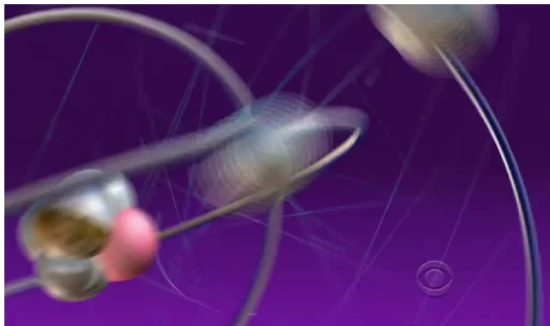
Kohls et al., 2013; Scott-VanZeeland et al., 2010

Reinforcement



- Brain activity associated with social reinforcement

Reinforcement



THE BEST REINFORCER

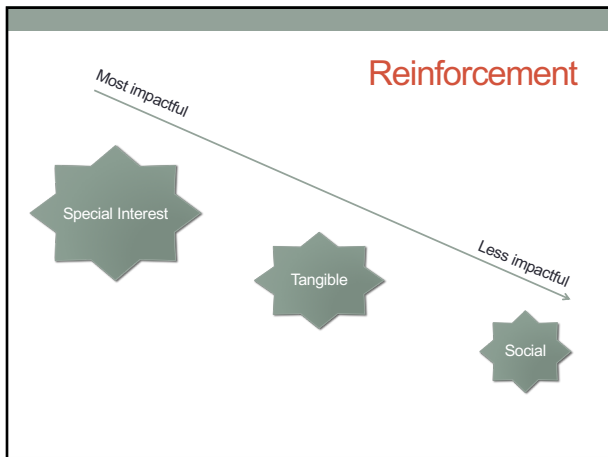
...

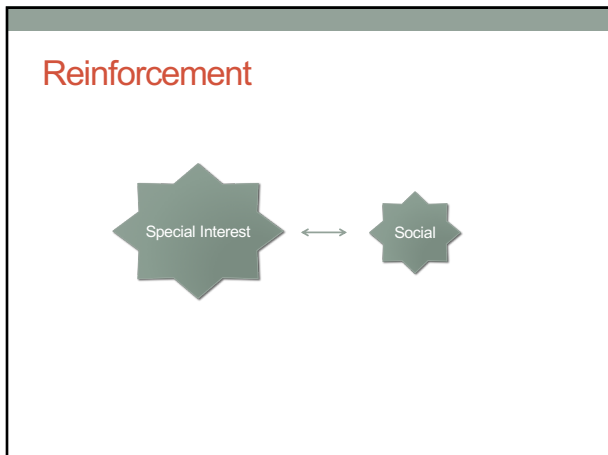
Special Interests

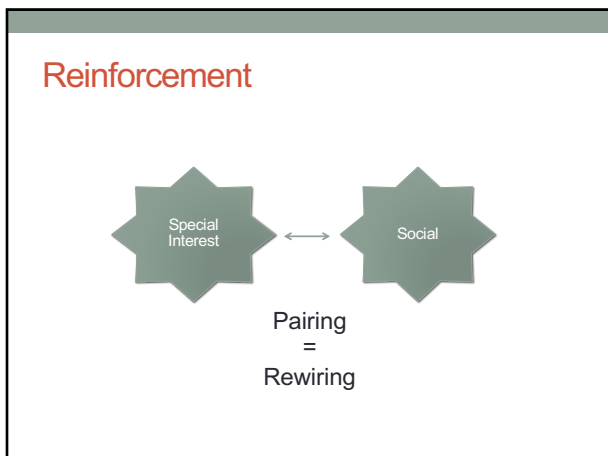


Special Interests









REGULATION

Regulation



Regulation Challenges

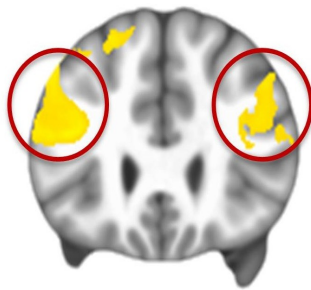
- Over 50% experience self-regulation challenges
- Difficulties
 - Recognizing emotions in self
 - Difficulty matching emotions to events
 - Staying calm or calming down when upset or overwhelmed

Regulation/Change

Individuals with ASD process small changes – such as a change in the schedule -- similar to the way another person would process a major change – such as being fired from a job (Gornot & Wicker, 2012).



Self-Regulation - Underactivity



• The yellow areas represent a composite of fMRI scans showing the areas of the prefrontal cortexes that are significantly less active in people with autism during emotion regulation.

Richey et al., 2015

Physical Aggression

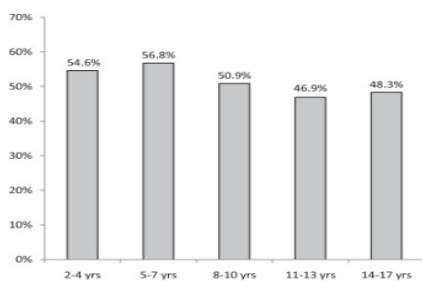


Fig. 1. Percentage demonstrating aggression across age groups.

Mazurek, M. O., Kanne, S. M., & Wodka, E. L. (2013). Physical aggression in children and adolescents with autism spectrum disorders. *Research in Autism Spectrum Disorders*, 7(3), 455-465.

Reactive Aggression

- Not planned in advance
- Occurs because the individual does not have the skills to problem solve, recognize feelings in self, match feelings to event, and calm self



Farmer et al., 2014

Aggressive Behavior

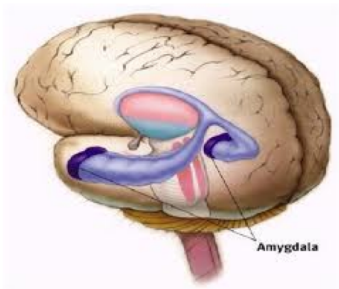


Higher adaptive behavior,
communication



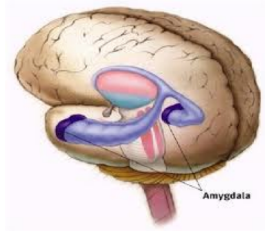
Lower levels of
aggressive behavior

Amygdala



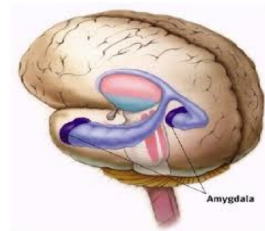
Regulation: Amygdala

- Detects danger
- Produces stress, fear, anxiety
- Related to eye contact and emotion recognition
- Key in behaviors, such as anxiety, meltdowns and aggression



Regulation: Amygdala

- Grows more quickly in children with ASD than those who are TD
- Develops over time until age 18 (at least – my emphasis)



Adolphs, 2013; Schumann & Amaral, 2006

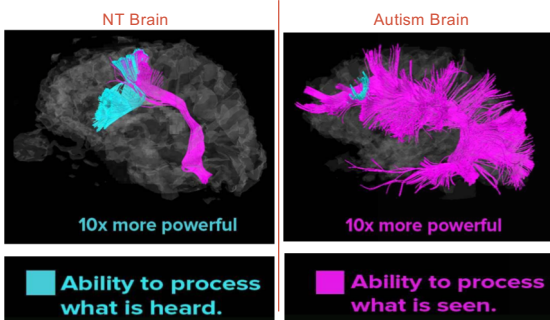
LEARNING

Learning

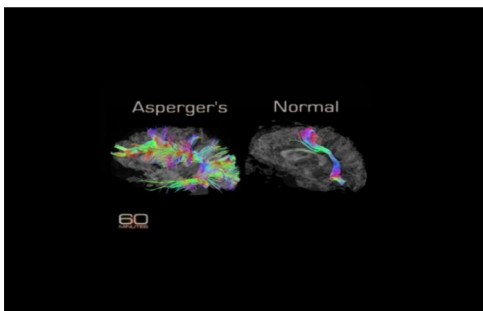


Academic Modifications

Visual and Auditory Processing



Brains of Individuals with ASD are 40% More Active than Those of NTs



Temple Grandin's brain

Pérez Velázquez & Galán 20

IMPLICIT LEARNING

Implicit Learning

- Learning without trying to do so
 - “Just picking it up”
 - “Automatically getting it”
 - “I don’t know how I learned it – I just did”

Stay with me – I have a point →

Schipul & Just, 2016

Implicit Learning

Social Interaction



Language



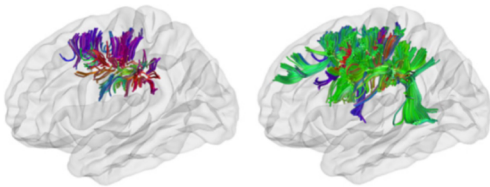
Implicit Learning

- Typically relies on the the different parts of the brain working together
- This is known as integration

Schipul & Just, 2016

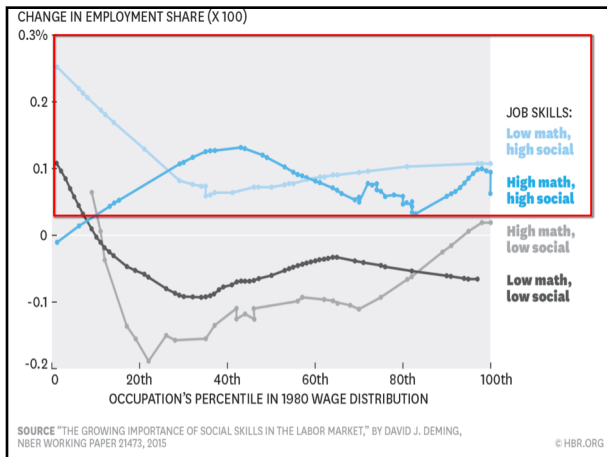
Implicit Learning

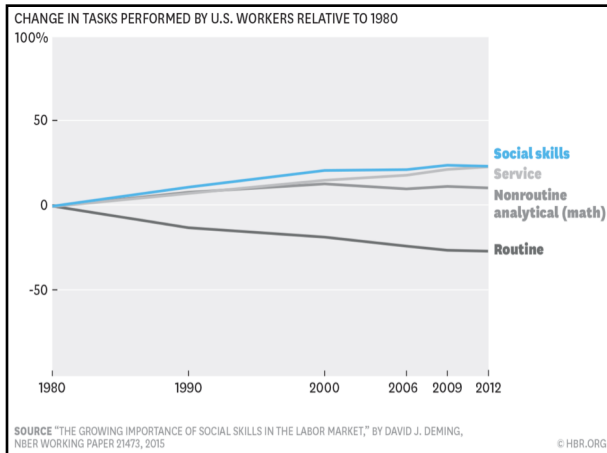
- Individuals with ASD have less and different integration across brain regions



Schipul & Just, 2016

**DOES THIS REALLY
MEAN ANYTHING IN
REAL LIFE?**





Implicit Learning

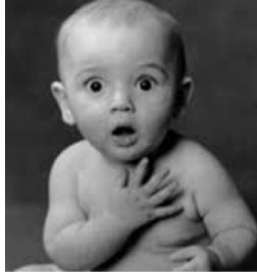
- So
- Individuals with ASD may require direct instruction on tasks that are implicitly learned and may take a longer time to learn them

Remember this when the Hidden Curriculum is introduced

Schipul & Just, 2016

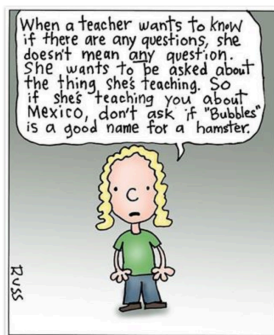
Hidden Curriculum

- The ultimate implicit learning task
-REALLY!!!!



Hidden Curriculum

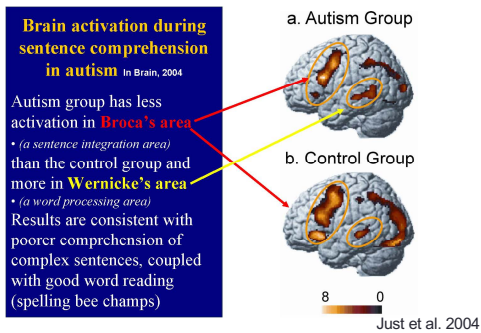
- The set of unwritten rules that no one has been directly taught, but everyone knows. Violations of these rules can make an individual a social outcast.
- Phrase associated with hidden curriculum:
 - "I shouldn't have to tell you but ... "
 - "Everyone knows that ... "
 - "It's obvious ... "



Idioms and Metaphors



Rote Memory/Comprehension



SENSORY

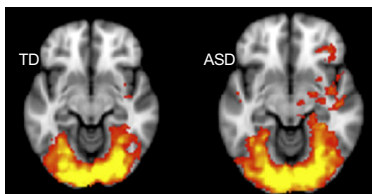
Sensory

*A walk in a
Neurotypical persons
shoes*

PEOPLE WITH AUTISM ARE
INUNDATED WITH A DELUGE OF
SENSORY INFORMATION THAT
CAN TURN EVERYDAY
ENVIRONMENTS INTO
DISTRESSING EXPERIENCES

Lurie, 2015

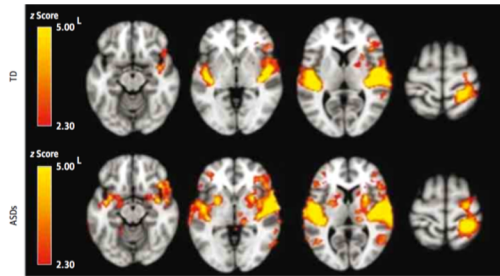
Sensory: Auditory



- For those with ASD, the brain regions that process emotions react more to noise than those who are TD

Green et al., 2013

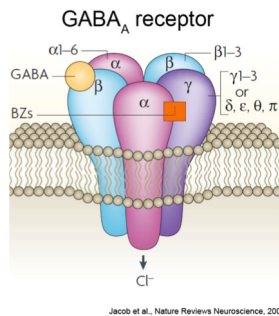
Sensory: Auditory and Tactile



Hyperresponsivity to mildly aversive tactile and auditory stimuli, particularly when multiple modalities presented simultaneously.

Green et al., 2015

GABA: Differences in Individuals with ASD



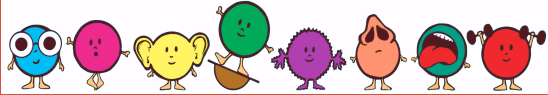
- An inhibitory neurotransmitter
- Stops brain cells from acting in response to information they receive from the senses
- Enables the brain to process digestible pieces of information rather than try to take in everything at once

Jacob et al., Nature Reviews Neuroscience, 200

Robertson et al., 2015

Sensory: Senseless





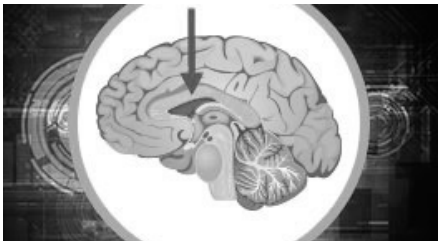
INTEROCEPTION: THE 8TH SENSE

Brenda Smith Myles, Kelly Mahler

Interoception

- The sensory system that pulls information regarding the internal state of our body

The Insula



The Interoception Center in the Brain

The Insula

Examples of Functions According to Brain Studies

- Thirst
 - Hunger
 - Temperature
 - Sexual arousal
 - Satiety
 - Emotional awareness
 - Empathy
 - Theory of mind
- Pain
 - Decision making
 - Sensing risk
 - Understanding norms
 - Maternal and romantic love
 - Reading social gestures
 - Intuition

cont

The Insula

Examples of Functions According to Brain Studies

- Motivation
- Response to flight or fight
- Heartbeat
- Air satiation
- Itch



The Insula and Autism

- Evidence:
 - DiMarino et. al (2009) looked at 24 studies all which used brain imaging during various social processing tasks. The region showing decreased activity across all studies was the Insula

WHY IS THIS IMPORTANT?

Potential Impacts

- Inability to recognize and respond to sensations of thirst
 - May present as excessive fluid intake and water intoxication
 - Water intoxication leads to seizures
 - 30% of individuals with ASD have seizures
- Difficulties in recognizing hunger and satiation may be related to eating disorders

Attraction to water?

Fiene & Brownlow, 2015

HOW DO DIFFERENCES IN THE INSULA IMPACT EVERYDAY LIFE FOR INDIVIDUALS ON THE SPECTRUM?

Preschool Child

- Reacts to minor and major events in a similar manner
- Does not report injuries or act hurt
- Has difficulty with potty training
- Recognizes hunger only as feeling to sick to stomach
- Startles easily
- Limited repertoire of interests

School Age

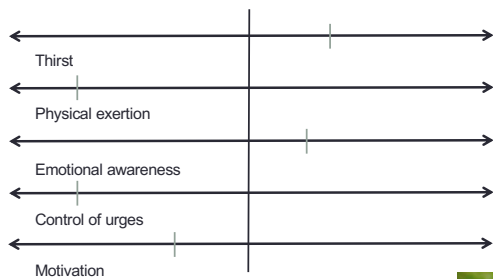
- May be under- or over-weight
- May not match clothes to weather
- Easily coerced into risky behavior
- Does not react when others are hurt
- Experiences meltdowns
- Difficulty understanding the thoughts of others
- Has few friends

Adult

- Delay going to the doctor
- Has difficulty empathizing with partner
- Makes hidden curriculum errors at work
- Has difficulty making decisions regarding finances
- Smokes and drinks
- Has a "short fuse"
- Makes some bad decisions

Variation Exists in Interoception Strengths and Needs

Interoception: A Sliding Scale



Interoception: A Sliding Scale

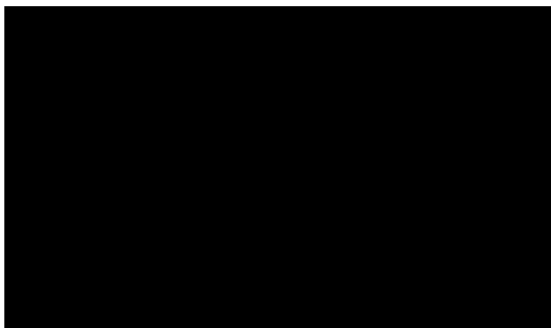


Interoception: A Sliding Scale

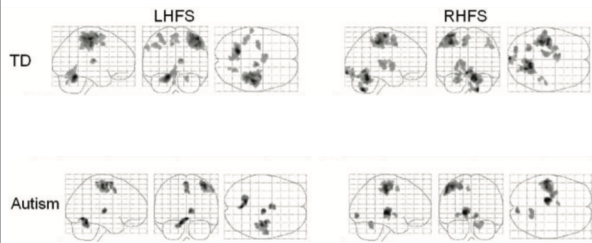


MOTOR

Motor



Motor



Mostofsky et al., 2005

Motor

- Difference and delayed acquisition of gestures
 - Key in socialization and communication
- Difficulty shifting executing motor actions, including those that should be automatic
- Delays in speech production

Motor - Handwriting

- Alignment, formation, size, and spacing significantly different than in same age peers
- No significant difference in these handwriting factors across age
- *IF YOU WANT THE STUDENT/CHILD TO SHOW YOU WHAT SHE KNOWS, DO **NOT** PUT A PENCIL IN HER HAND!*

1. Change in the size, shape, or state of matter
2. When matter gains heat, the particles of matter move faster.
It takes less particle movement in expansion and contraction than in the state of matter.

English

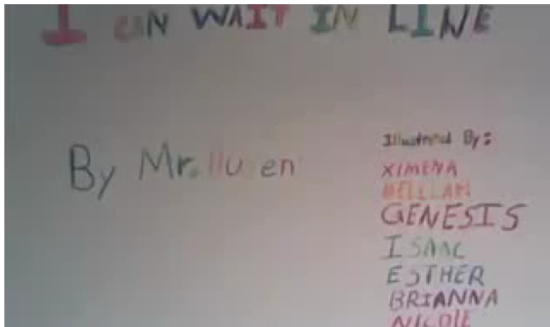
We played baseball yesterday. Judy threw three runs.

Like all pets are a chicken and a monkey. They live in her back yard and are a good dog and a good cat.

With an open mind
and a good heart
all things are possible
- Eli Roberts

**SOCIAL/
COMMUNICATION**

Social/Communication



Social/Communication



Language and Social Challenges

*You need to change your
behavior management system.*

**I wave my clothes on
the bathroom floor.**

**Can I wear
hooks?**

I have a fish in my knee.

*I'm going to knock your block off!
(you weasel-ly wabbit)*

Sound More Competent Than They Are

- Expressive language is most often more advanced than receptive language.
- Expressive language in children with AS, however, DOES NOT EQUAL comprehension.
- Many children with AS will say something without knowing what it means.

Sound More Competent Than They Are

How do you know when a baby is ready to be born?

Sound More Competent Than They Are

How do you know when a baby is ready to be born?

When his head is in the birth canal and is facing Virginia.

Sound More Competent Than They Are

What do you need to know for your Bar Mitzvah?

Sound More Competent Than They Are

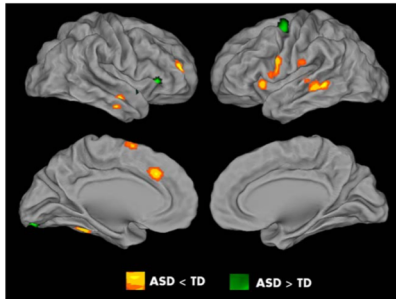
What do you need to know for your Bar Mitzvah?

I need to know about the Israelites and the genitals.

Whole Brain Structure Differences: Areas of the Social/Communication Brain



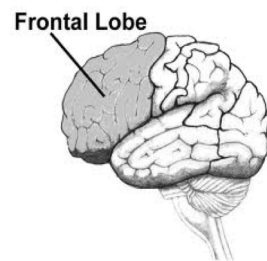
Social Communication: Language Differences



Herringshaw et al., 2016

Social/Communication

- Frontal lobe differences impact social understanding and actions



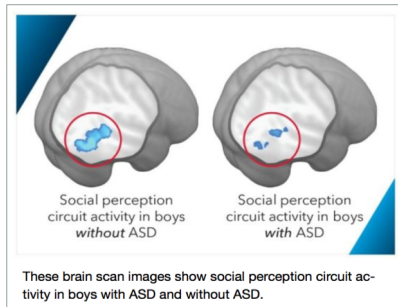
Hall et al., 2012

Social/Communication

- Individuals with ASD
 - May understand information in the abstract, but experience grave difficulties in responding to similar situations in real life
 - Can often state the correct response, but have difficulty changing their behavior to match environmental expectations
 - Often say things considered inappropriate; may appear disinhibited or "lack a filter"
 - Difficulty understanding others' perspectives

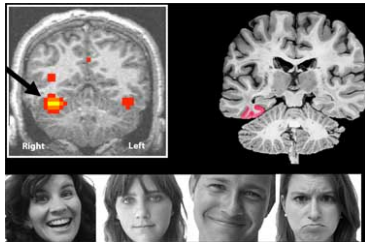


Social Perception



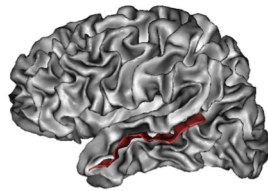
Björnsdóttir et al., 2016

Social/Communication: Cerebral Blood Flow and the Fusiform Gyrus



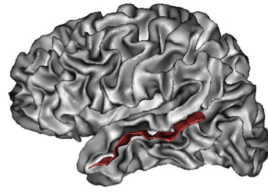
Social/Communication: Superior Temporal Sulcus

- Underactive
- Eye gaze
- Understanding facial expressions and body movements
- Understanding the interactions of two people



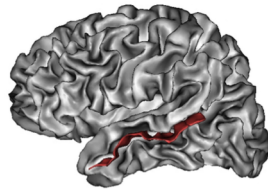
Social/Communication: Superior Temporal Sulcus

- Determining appropriateness or inappropriateness
- Using language to explain or ask about interactions



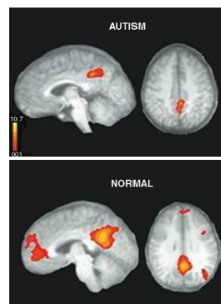
Social/Communication: Superior Temporal Sulcus

- Generalization of social interactions
- Flexible thought



Social/Communication

- Individuals with ASD process faces using that same areas that typically process objects



Courchesne & Pierce, 2005

PSEUDO-LOGIC

From Facebook

Pseudo-logic (and Implicit Learning)

- Is extremely logical, but the logic is very unique based on that student's perspective
- Is often misunderstood
- Assumes he is right
- Does not ask questions
- Assumes his logic is the same as others
- May be perceived as argumentative

Austin

Lost my phone at Blatt Field, if anyone is out there and happens to find it call or text me please.

Pierce

... so how will you find out if anyone finds your phone?

Austin

Unless they decide to keep it, hopefully they'll call me.

Pierce

It'll be real effective for them to call you if they're the one that has your phone ...

Austin

What do you mean?

Pierce

They'll find your phone. They'll pick it up. They'll call you. It will ring in their hand.

Austin

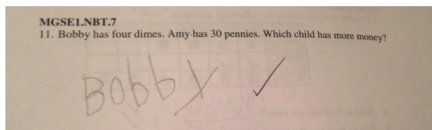
... um ... but it's my phone not theirs.

LITERALNESS

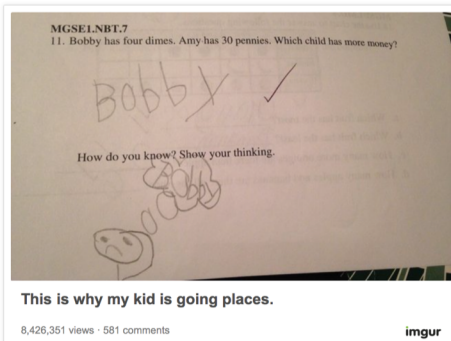
Literal Approach to Life

- People say exactly what they mean
- People mean exactly what they say
- There is no need to look for other meanings

Literalness



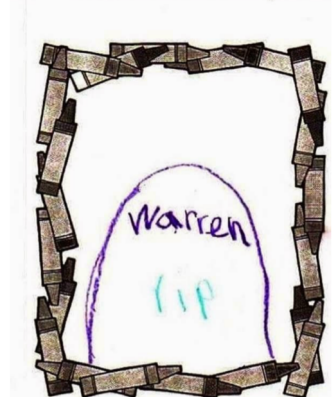
Literatness



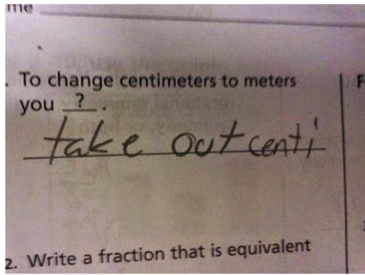


Literatness

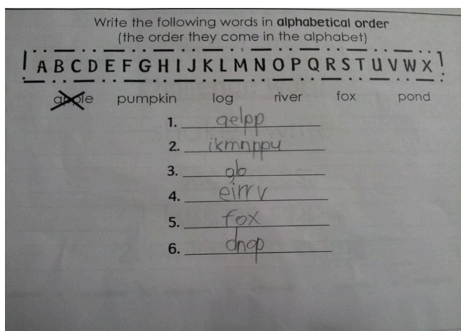
Draw a picture of what you will look like in 100 years. In 100 years I will be _____ years old!



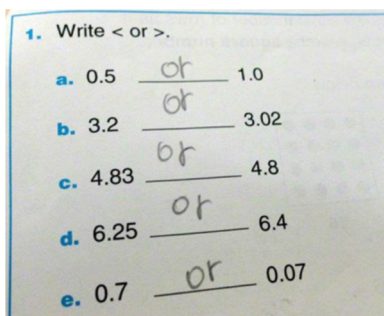
Literalness



Literalness

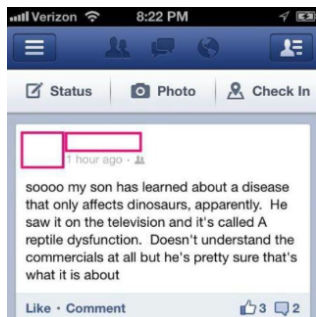


Literalness



Mathematics

- Expand?
- Is there more than one meaning?



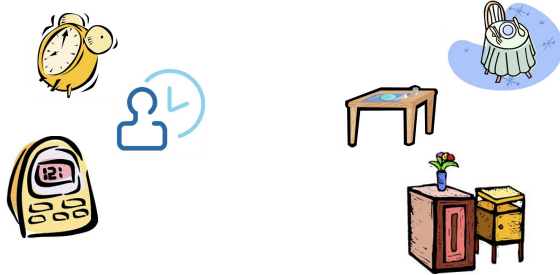
Science

(b) Sea salt is commercially obtained from sea water by the process of evaporation and crystallization. The main component of sea salt is sodium chloride.

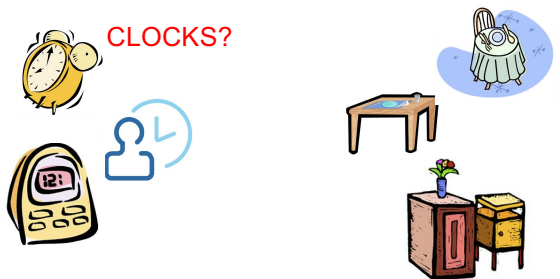
What type of attractive force or bond holds the sodium ions and chloride ions together in a crystal of sodium chloride?

Jane, 6:22

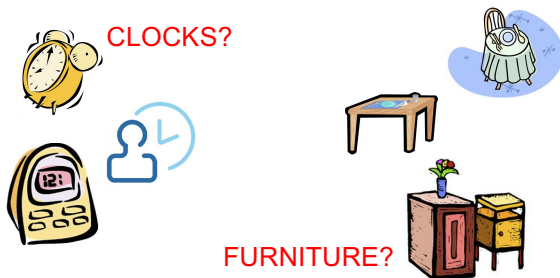
What do clocks and furniture have to do with math?



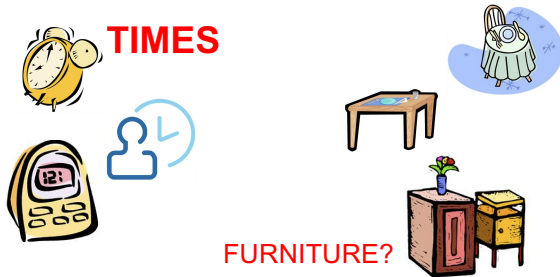
What do clocks and furniture have to do with math?



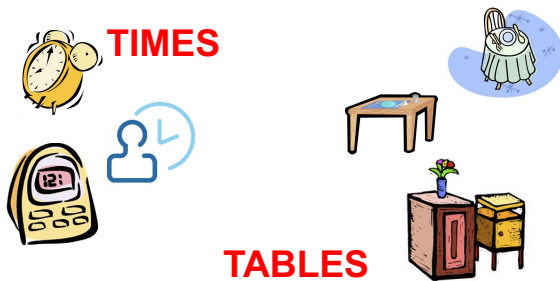
What do clocks and furniture have to do with math?



What do clocks and furniture have to do with math?



What do clocks and furniture have to do with math?



What do clocks and furniture have to do with math?

**TIMES
TABLES**

1	2	3	4	5	6	7	8	9	10
2	4	6	8	10	12	14	16	18	20
3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80
9	18	27	36	45	54	63	72	81	90
10	20	30	40	50	60	70	80	90	100

THEORY OF MIND

Theory of Mind

- Difficulty in ...
 - Predicting
 - Reading intentions
 - Understanding emotions
 - Explaining own behavior
 - Perspective or reference
 - Reading and reacting to others' interests
 - Understanding social interactions

This is often called THEORY OF MIND or MINDREADING.

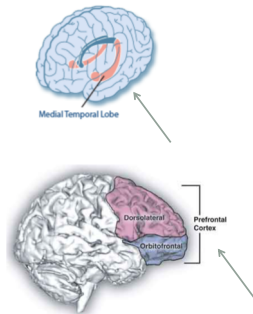


After lunch today, I had trouble concentrating because this kid kept tapping his pencil. I told him to stop but he just looked at me and kept tapping. He continued to tap his pencil even after the teacher told him to stop. When I couldn't stand the noise another second, I grabbed his pencil and broke it. It isn't fair that I'm the one in trouble now. This is Asperger Syndrome.

Theory of Mind

Theory of Mind: Part I

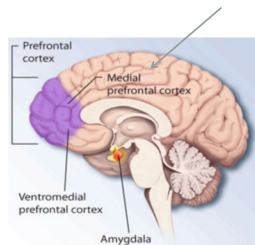
- Detecting mental states through immediately available observable information (i.e., eye gaze, body posture, gestures)



Sabbagh, 2000

Theory of Mind: Part II

- Understanding the perspective, thoughts, feelings of others
- Predicting what others will do
- Understanding what will happen next



Sabbagh, 2000

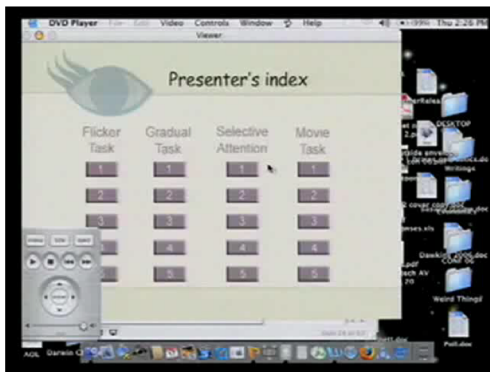
Sense of Social Justice

- The good guys always win.
- Rules are meant to be followed.

You can't bring food into the theater!

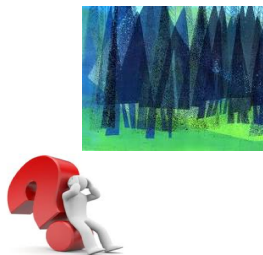
Moran, Young, Saxe, Le, O'Young, Mavros, & Gabrieli, 2011

CENTRAL COHERENCE



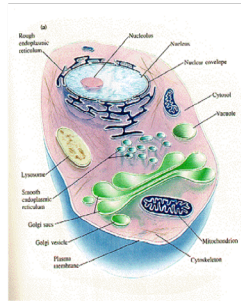
Central Coherence

- Seeing the forest and the trees
- Understanding the big ideas and the details
- Understanding what is important and important in any situation



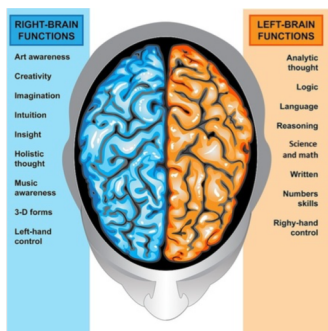
Central Coherence

- When learning this information, what is important?
- If you have good central coherence, you will memorize the names that match to the parts.
- If you do not, you memorize the words in order.
- Or memorize the colors.



Sondra

Right Hemisphere



Happe & Frith, 200

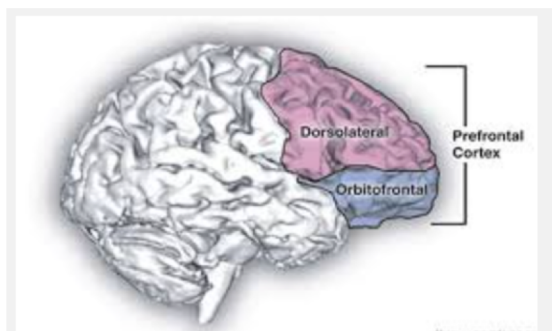
WHAT DOES THIS LOOK
LIKE FOR TASKS?





PROBLEM SOLVING

Problem Solving



Channon, 200

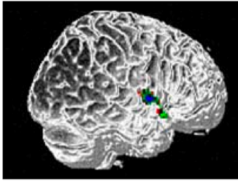
Problem-Solving Is Not Related to IQ



Problem Solving

- “One way of viewing a problem”
- Sees facts instead of a whole
- Problems with cause and effect
- Does not see problems as having more than one option
- Stuck thinking
- Problem solving is often literal

All Areas of Functioning are Impacted



- According to Nancy Minshew, a specialist in psychiatry and neurology at the University of Pittsburgh School of Medicine: “... you cannot compartmentalize ASD. They are [sic] much more complex.”

INSTRUCTIONAL STRATEGIES

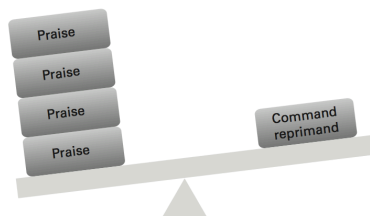
Brenda Smith Myles, Ph.D.
brenda_myles@mac.com

REINFORCEMENT

Guiding Principles

Break the Negative Cycle

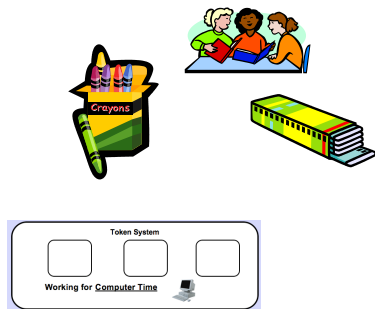
4 to 1



Kenworthy et al.

Types of Reinforcement

- Natural
- Social
- Activity
- Tangible
- Token



Coffin, 2006

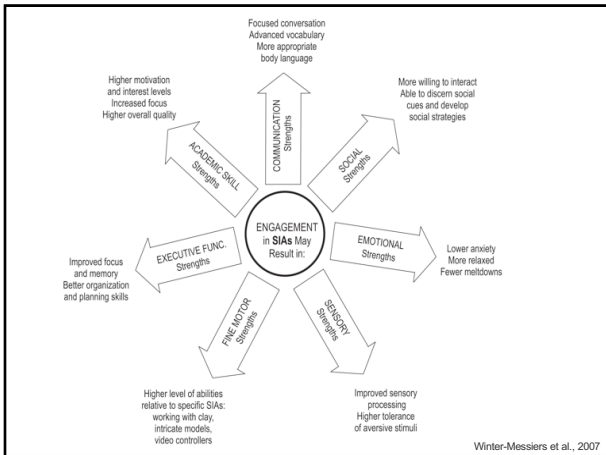
Incorporate Choice

- Improves communication
- Promotes independence
- Develops pointing and requesting skills
- Reduces excessive requesting and protesting behaviors
- Provides immediate reinforcement

THE MOST POWERFUL REINFORCERS ARE RELATED TO SPECIAL INTEREST AREAS (SIA)

Use of these as reinforcers does not increase the intensity of their use or focus!





Ways to Incorporate SIA

- SIA-designed stickers
- Color, cut, paste
- Write a report
- Make a speech
- Read book
- Design an art project
- Identify music that could match an SIA
- Conduct research using the Internet



Sample Activities Around Dinosaurs

Area	Activity
Reading	Read <i>The Complete Guide to Prehistoric Life</i> (Haines & Chambers, 2006)
Writing	Research and write a paper on the Apatosaurus
Spelling	Learn to spell names of dinosaurs or write words in a sentence about dinosaurs
Speech	Present life of paleontologist, George Simpson, Ph.D.
Math	Write math word problem about consumption of millions of tons of leaves by Triceratops
Science	Research the Asteroid Cretaceous Extinction Theory

Sample Activities Around Dinosaurs

Area	Activity
Art	Design and build a clay or paper mache model of the Stegosaurus
Internet Skills	Research the Smithsonian Paleontology Wing (Washington, DC) Consult with paleontologists online

Winter-Messiers et al., 2007

REGULATION

Temper Tantrums

- The child will look to see if behavior is getting a reaction
- The child can alter behavior to ensure that she does not get hurt
- The "temper tantrummer" will use a situation to his benefit
- The child has a goal and when the goal is met, the behavior returns to typical
- The child is in control

The Meltdown

- The child has no involvement in the social situation
- The child is not concerned for his own safety
- The child does not look to or care if others react to his behavior **during** the meltdown
- Meltdowns appear to be under their own power and have a cycle
- Are **not** manipulation – they are the only behavior the child has to react to the situation



Home Base or Cool Zone

- A place where the student can go to escape the over-stimulation of the classroom
 - Not time-out
 - Not a punishment
- Work goes with the student to Home Base
- May be scheduled or occur on an as-needed basis
- May be used for taking tests

Safe Person or Safety Net

- Relationships!
 - Interpret social situations
 - Teach social skills
 - Listen/emphasize
 - Aid in emotional readiness



Coping Cards

**Take 2 deep breaths
with your eyes closed**

**Press hands together
and count to 10 slowly**

Coffin, 2006

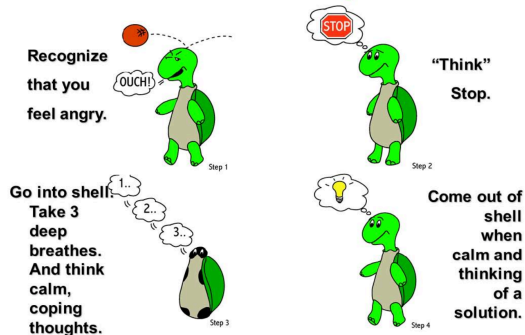
MY CALMING SEQUENCE



**When My
Worries Get
Too Big**

Buron

Turtle Technique



<http://www.pinterest.com/pin/159103799310771831/>

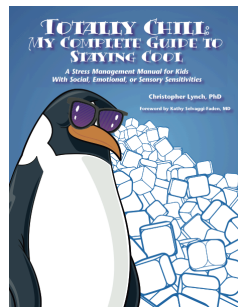
Photo Album

- Identify calming photos
- Place in album
- Review throughout the day with coaching about the calming effects of the photo album
- Prompt to use when upset
- Available to learner on an as-needed basis

Totally Chill

Table of Contents

- What Makes Me Stressed
- The Science of Stress
- Relaxing My Body
- Relaxing My Mind
- Flexible Thinking
- Problem Solving
- Getting Organized
- Being Healthy

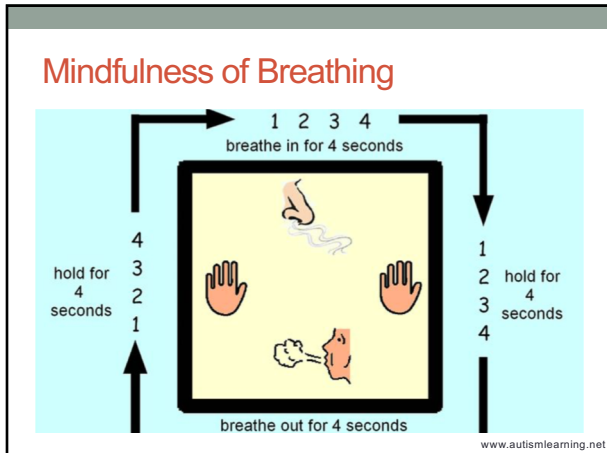


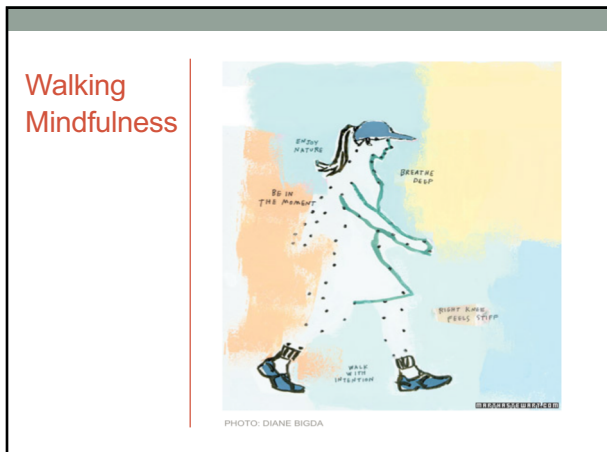
Lynch, 2012

THE INCREDIBLE 5-POINT SCALE

Buron & Curtis

	Rating	Feeling	What It Looks Like	What I Should Do	
1. Make a table	5	I have to leave; it is time to be alone	Fast rocking; loud voice	Use the secret signal with the adult you trust and leave the room when the adult acknowledges you.	5. Write down what each feeling looks like for you.
2. Label the top columns	4	I need to move to a different place in the room	Rocking back and forth; picking on my fingernails	Say, "Excuse me", if you can. If you can't, just walk to a quiet part of the room and put on your headphones. Think about using your secret signal with an adult.	
3. Write numbers down the side	3	I need to stop talking with this person or I might need help telling someone to be quiet	Feeling like I want to flap my hands and cover my ears	Think about saying one of these things: "I'll talk with you later", "I'm going to get a drink", "I need to get some work done". If that is not going to work, say "Gotta go!" And go stand by an adult you like and know. Ask the adult for help.	6. Write what you should do for each number.
4. Write in your feelings for each number.	2	I can do this by myself	Startling to tap my foot	Taking a deep breath and count to 10. Think about saying one of these things: "I'll talk with you later", "I'm going to get a drink", "I need to get some work done".	
	1	I am good. Nothing is really bothering me.	Smiling, talking	Keep doing what I am doing.	





Meditation on the Soles of the Feet for Anger Management

- Stand up and feel your feet, especially how they feel pressing against the floor
- Now walk slowly.
 - As you walk simply notice how your feet feel.
 - When your mind wanders, just feel your feet again.
 - Notice the changes in sensation as you lift your foot, step forward, and place your foot back down on the floor.
- Practice until you feel more relaxed

<http://centerformsc.org/sites/default/files/Soles%20of%20the%20Feet.pdf>, Singh, Singh, Singh & Winton (2011) by Fernleaf Publications

USING INTERVENTIONS NOT DEVELOPED SPECIFICALLY FOR THOSE ON THE SPECTRUM

Learning: What to Teach

- Research shows that ...
 - Individuals with "soft skills", including good social skills, sociability, good work habits, punctuality, conscientiousness and those who participated in extra curricular activities are more likely to make more money, be employed, and attain high levels of education than those with good grades and high standardized test scores.

University of Illinois at Urbana-Champaign (2009, March 26). Social Skills, Extracurricular Activities In High School Pay Off Later In Life.

Guiding Principles

- The same skill will have to be practiced many times

"Learning often occurs best ... through interactions in a practice field where it is safe to experiment and reflect."

SAFE PRACTICE
Peter Senge

Priming

- Preparing the student for daily activities
 - Can occur
 - At home for the next day
 - The morning of in school
 - At the end of the school day for the next day
- Overview of schedule changes, assignments and activities

Note. It is probably **NOT** in the student's best interest to go to the holding pen!

Sample Priming Activities

- Look at a worksheet
- Look through a book
- Overview a test
- Show the visual schedule
- Practice with art supplies
- Talk about and show a finished project
- Show a work sample

ROUTINES

Routines That Need to Be Directly Taught

- How to ask for help
- When and what to throw away and where
- How to obtain school supplies when the student forgets to bring them
- How and when to hand in work
- How to pass out papers
- How to organize materials so that they are accessible in desk, locker, backpack, cubby
- How to make up missed work
- How to line up for lunch, recess, music, etc ...
- How to walk down the hall with other students

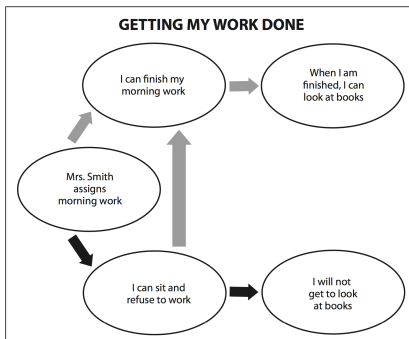
Routines That Need to Be Directly Taught

- How to get ready to move to another activity that is within the same class
- How to get ready to move to another activity that is in a different class
- How to get ready for recess
- How to get ready to go home
- What to do during free time
- How to navigate lunchtime
- What to do if you are bullied
- Where to go to take medication
- How to ask to go to the bathroom -- *BTW*

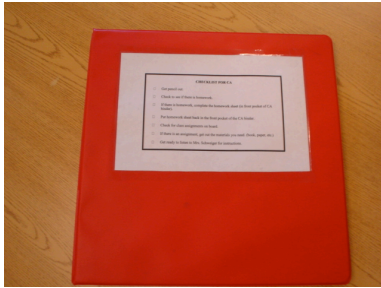
BEHAVIOR MAPPING

Amy Buie

GETTING MY WORK DONE



USE TASK ANALYSIS



Sample Academic Modifications

- Reduced number of problems
- Highlighting information to be read
- Providing a study guide
- e-books
- Additional time to complete projects
- Multiple choice instead of essay
- Keyboarding or answering verbally instead of written format
- Graphic organizer
- Working with a peer

Handwriting

- Alignment, formation, size, and spacing significantly different than in same age peers
- No significant difference in these handwriting factors across age
- *IF YOU WANT THE STUDENT/CHILD TO SHOW YOU WHAT SHE KNOWS, DO **NOT** PUT A PENCIL IN HER HAND!*

Sample Academic Modifications

- Accepting outlines instead of full text
- Using fill in the blank
- Providing a story starter
- Underlining directions
- Circling the problems that need to be done

Setting up Classroom Spaces That Support Students With Autism Spectrum Disorders

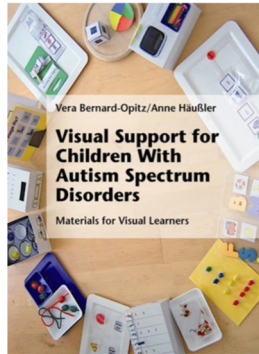
Susan Kolbert, Ed.D., CCC-SLP, and
Christine Reeve, Ph.D., BCBA-D
Foreword by Joanne



Vera Bernard-Opitz/Anne Häußler

Visual Support for Children With Autism Spectrum Disorders

Materials for Visual Learners



Organizational Supports

- To-do list
- Timeline
- Color coded folders
- Multi-compartment back-pack
- Backpack for each "block" day

Organizational Supports

- Supplies available on an as-needed basis
 - Textbooks, paper, pencils
 - *There should not be a penalty for needing these*
- Schedule a time and teach the student how to
 - Clean out his desk
 - Clean out his locker
 - Clean out his backpack
 - Identify what to keep and what to throw away

Changing Classes

- Show time class ends on a schedule
- Refer to a clock or watch to indicate
- Set a timer to signal how long the class will last
- Put a card on the student's desk that gives a five-minute warning
- Count down "5 ... 4 ... 3 ... 2 ... 1"

Class Schedule

- Understand the value of 'down time'
- Consider study hall classes
- Decide whether physical education is a meaningful class for the student
- Do not load with too many "high demand" classes
- Consider 'practical' courses, such as consumer math, even for college bound students

Assignment Modifications

- Give shorter assignments
 - Have student complete **only** problems that meet state assignment or school requirements
 - Circle items on test, worksheet to be completed
 - Hand out small portions of assignments
- Read directions to student
 - Highlight important words

continued

Assignment Modifications

- Highlighted texts
- Model of assignments
- Sample problem worked
- Directions provided a second time individually
- Help with the first problem
- Remove writing demands, if that is a challenge

continued

Assignment Modifications

- Reduce number of problems
- Provide quiet time or home base for completion
- Provide one direction at a time
- Incorporate student interests

continued

Assignment Modifications

- Modify written assignments
 - Create a timeline
 - Drawings
 - Using the computer
 - Multiple choice
 - Verbally explain what was learned

Lockers

- Consider which type of locker would best serve the student's needs
- Provide locker at the end of the row
- Provide a practice locker
- Consider having a second set of textbooks kept in the classroom

TRAVEL CARD

FROM THE WORK OF LAURA BOWDEN CARPENTER

Tracking Progress Across the Day When
Multiple Classes are Involved

Travel Card					
Student Name: _____					
Date: _____					
Key: <input type="checkbox"/> =Yes <input type="checkbox"/> =No <input type="checkbox"/> NA=Not Applicable					
	Did student follow class rules?	Did student participate in class?	Did student complete assignments?	Did student turn in homework?	Teacher's initials
Reading					
Science					
Social Studies					
Study Skills					
English					
Spanish					
Bonus Points				Has assignment book?	
Total	+				0
Teacher Comments/Suggestions/Announcements:					

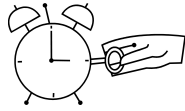
Specials

- Consider acting lessons, drama class
- Look at structure within specials
- Provide structure similar to classroom
- Examine social demands
- **TRAIN EDUCATORS WHO TEACH SPECIALS**

Specials

- More support, not less, is usually needed
- Prime for specials
- Create a visual support or list of the class routine
- Allow for early release
- Schedule home base for before or after, if the classes are high demand or stressful

TIME



Twice as much time, half
as much done!

Reciprocal Questioning

- After reading a paragraph, have the reader ask the teacher questions about the paragraph.
 - When the teacher responds, have him model clarifying the question. Provide reinforcement for questions.
- Then exchange roles and have the teacher question the reader. Provide reinforcement for answers.
 - Gradually extend to page, section, chapter.

Implicit Learning

- Learning without trying to do so
 - "Just picking it up"
 - "Automatically getting it"
 - "I don't know how I learned it – I just did"

Stay with me – I have a point



Schipul & Just, 2016

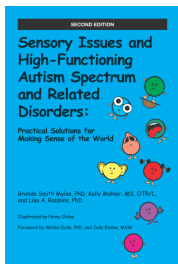
Hidden Curriculum

- The set of unwritten rules that no one has been directly taught, but everyone knows. Violations of these rules can make an individual a social outcast.
- Phrase associated with hidden curriculum:
 - "I shouldn't have to tell you but ... "
 - "Everyone knows that ... "
 - "It's obvious ... "

SENSORY

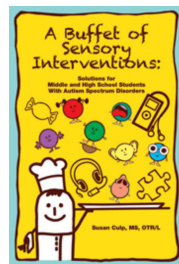
Regulation

Sensory Issues High Functioning
ASD: Practical Solutions ...



Myles, Mahler, & Robbins

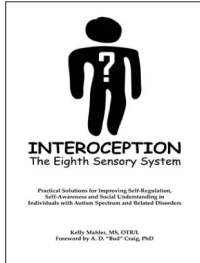
Sensory Buffet



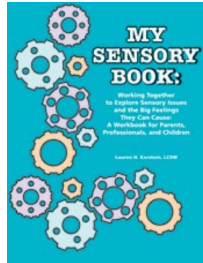
Culp

Sensory

Interoception

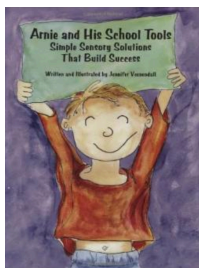


My Sensory Book



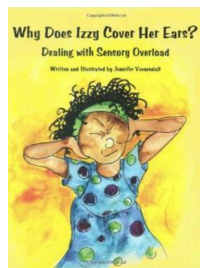
Sensory

Arnie and His School Tools



Veenendall

Why Does Izzy Cover Her Ears?



Veenendall

Sensory Diet

- A planned and scheduled set of activities designed to meet individual needs
- Incorporates naturally occurring opportunities for children to get the sensory stimulation they need

Miller & Robbins (2005); Willbarger (1995); Yack et al. (1998)

How Long Does it Last?



Tactile: 1 to 1 1/2 hours



Vestibular: 4 to 8 hours



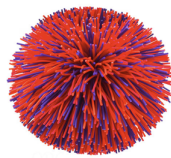
Proprioception: Up to 1 1/2 hours



+Auditory, Gustatory, Olfactory, Interoception: Transitory

Brack, 2007

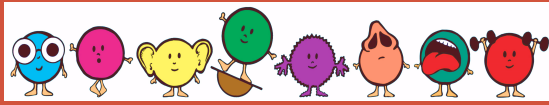
Sensory Supports: Disco Seat and Koosh Ball



Alternatives to Screaming and Yelling

When I am upset and feeling like screaming, I can:

- Use my break card to take a break
- Say, "Please leave me alone."
- Take a short walk and get a drink of water.
- Take three deep breaths and think about how do design a better washing machine.



INTEROCEPTION: THE 8TH SENSE

Brenda Smith Myles, Kelly Mahler

MOTOR

SOMETIMES IT IS HARD TO
OTHERS TO ACCEPT CHANGES
ARE NEEDED IN HANDWRITING

...

This is not new!

Handwriting Modifications

- Have the student write keywords to respond to a question instead of complete sentences
- Use multiple choice, true-false, one-word fill-in-the-blank instead of short answer or essay formats
- Allow student to answer tests or assignments orally

Notetaking Modifications

- Most students cannot listen and take notes at the same time
 - Provide a copy of teacher's notes
 - Make a copy of a student's notes
 - Have a student use carbon paper when he/she takes notes
 - Have student use Inspiration or other outlining software

Handwriting Modifications

- Allow the student to underline or highlight answers to questions in a text instead of writing them out
- Allow the student to use a iPad, PDA, laptop, or computer to respond to questions
- Provide a scribe

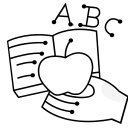
SOCIAL/ COMMUNICATION

EVERYONE NEEDS A WAY TO COMMUNICATE!!!

Simplify the Language

- Students with ASD often appear to understand than they actually do
- Many students can repeat back what they hear without understanding
- Verbalization does not equal comprehension
- The answer to "Do you understand what you are supposed to do?" is almost always, "Yes". The meaning may be "No".

IF THE LEARNER UNDERSTANDS
INDIVIDUAL WORDS THIS DOES
NOT MEAN THAT SHE
UNDERSTANDS THOSE WORDS IN
A SENTENCE.



Simplify the Language

- Use student's name to obtain attention
- Ask questions in different ways
- Have student paraphrase
- Tape gently on the desk prior to asking a question
- Have student demonstrate understanding



Simplify the Language

- Communicate clearly
 - Use simple and concise language
 - Use visuals
 - Use environmental cues

A Friendship Scale		
Rating	Ways I Have Tried to Meet Other People and Make Friends	Affirming or Rethinking My Thoughts
5	I will go to a frat party to find friends. I will drink some beer to be one of the guys.	You are under 21, so drinking is against the law. This is not a good way to meet people. Rethink: Stay away from parties where people are drinking. It isn't worth the risk.
4	I see two people standing together chatting, so I walk up and put my arms around their shoulders so that I am included.	This would be considered strange or even scary behavior. Rethink: Approach two people slowly and wait for them to stop talking. Then say "hi." If they do not seem happy to see you, just walk on.
3	I go to the food court and sit down at a table where other students are eating and say something really funny like, "Nobody expects the Spanish Inquisition."	This will most likely seem very strange to the other students at the table. They likely don't know the context of the quote. Rethink: Maybe just walk up to the table. If there is an empty seat, ask if they mind if you join them.
2	I approach other students in the library or the dorm lounge to see if we have something in common.	This is a pretty good way to meet friends. Affirmed, but be sure not to overdo your welcome. If the person does not seem happy to talk with you, just say "It was nice meeting you" and walk away.
1	I want to make friends at college, so I look up some activity clubs on campus that interest me. I plan to attend one.	This is a really good idea. Affirmed!

Buron et al., 2013

Scale to Guide a Conversation About Social Thinking		
Rating	These Are My First Thoughts	This Is How I Might Re-Think the Situation
5	Since we live in the same room, I will eat my roommate's food when I am out of snacks. I can borrow her clothes when mine are dirty.	This is actually a violation of the college's conduct code. I can be kicked out of the dorm for this behavior.
4	On my Facebook page, I write that my roommate and I live together and go to school together.	Talking about someone without their permission on Facebook can be considered a privacy violation. This is not OK.
3	My roommate is going home this weekend. I will pack and be ready to go with her.	If my roommate has not specifically invited me to go with her, then I am not invited. I could ask her if she would like me to water her plants or pick up her mail while she is gone.
2	We are roommates, so I will eat meals when my roommate does so that we are on the same schedule. I will follow her to the dining hall for every meal.	Following the same schedule as my roommate is not necessary. I should ask my roommate if I can join her for meals when we are both back at the dorm at the same time.
1	My roommate and I are sharing space. It would be nice to be friends too, but this might not happen.	I can try to be polite and respectful of differences. I can ask my residential life advisor for some tips on getting to know my roommate better.

Buron et al., 2013

The Power Card

- A visual aid that incorporates student interests to teach appropriate behavior in social situations, routines, interactions, behavior expectations

...

Gagnon & Myles, 2016

Components of the Strategy

- A short scenario describing how the hero solves a problem similar to the one experienced by the child (reader)
- The Power Card that recaps the strategy



The Purpose of the Hero

- The hero
 - ... serves as a motivator
 - ... is nonthreatening
 - ... has a “relationship” with the child (reader)

NARRATION AND COACHING

Prompting

- Providing the subtle “nudge” to help the learner get started or to provide direction
 - Verbal
 - Nonverbal

The Set-up

- Providing a brief introduction to help the learner get started
 - “John has something to say.”
 - “We are going to the store and there is something that John would like to ask you before we go.”

Narration

Her mouth is turned down and her arms are crossed. I think she is mad and is waiting for the students to stop talking.

SOCIAL NARRATIVES

An Analysis of a Social Event

Example Social Narrative – Birthday Party at the Bowling Alley

I am going to a bowling alley tonight for a birthday party. When I arrive, I may see many children from my school. I will also see Devon, because it is his birthday. While I am at the birthday party, we will eat cake, watch Devon open his presents, and bowl a few games. The bowling alley will probably be loud because of the bowling balls crashing into the pins. If I feel overwhelmed because of the noise, I can tell Devon's mom and then go to the quiet room for a little while. When the party is almost over, my mom will come inside to get me. She will watch me bowl and wait for me to finish so I don't have to leave before the end. I will be sure to tell Devon "Happy Birthday!" and thank him for inviting me to his party.



Myles & Hudson, 2010

DRAWINGS

Combines words with simple drawings in order to explain a simple concept

Cartooning
Comic Strip Conversations™ (Gray)
Pragmaticism (Arwood)



Video Modeling

- Video self-modeling
- Peer video modeling
 - Commercial
 - Model Me Kids
 - VideoJug
 - Manners for the Real World
 - eHow
 - Mansome
 - Home made

Things I Can Say to Friends

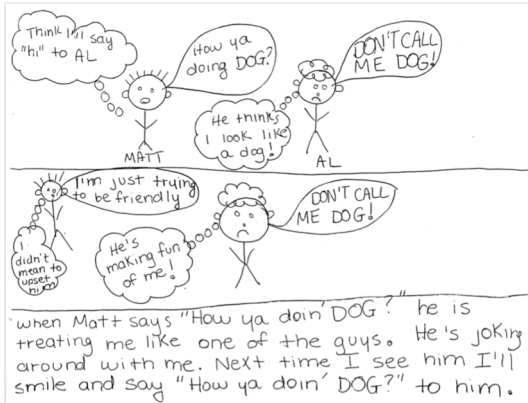
Leave me alone	That's cool
Stay away	Come here
Bug off	Hey
Cut it out	How's it going?

Things I Can Say to Adults

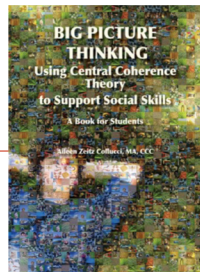
Yes	Thank you
Please	No thank you
Hello or hi	How are you?

Jennifer Levinson

THEORY OF MIND



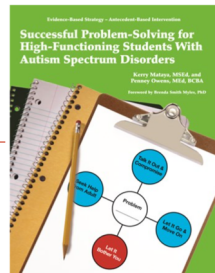
CENTRAL COHERENCE

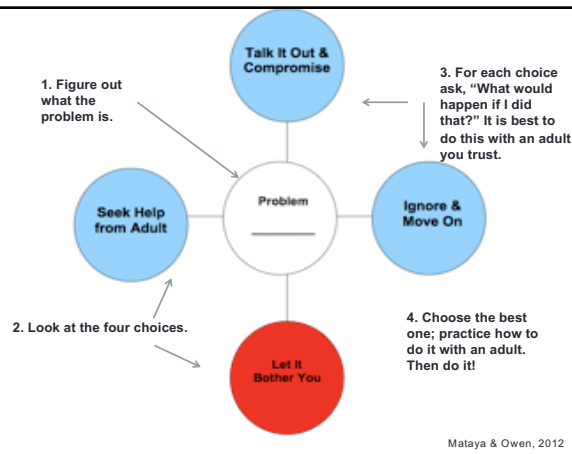


Central Coherence: The “Big Picture”

- Idiosyncratic focus
- Preference for the known
- Difficulty in choosing and prioritizing
- Difficulty seeing connections
- Don’t follow directions that don’t make sense

PROBLEM SOLVING





	Looks Like	Feels Like	What to Do
5	Screaming Stomping feet	Very Embarrassed Very Frustrated	
4	Getting quiet Saying "bad" words	Little Bit Embarrassed Little Bit Frustrated	
3	Folding arms Refusing to work	Confused	
2	Making Excuses "I don't want to..."	Uncomfortable	
1	Trying Things Good Attitude	Happy	Be Proud of Myself

The best teacher
for a
student with
autism
is the best
teacher!

The Best Educators Who ...

- Understand autism
- Demonstrate respect for and a positive attitude toward everyone
- Serve as a mentor/safety net

(cf. Chu, 2016; Dew & Alan, 2007; Hagner & Cooney, 2004; Hurlbutt & Chalmers, 2004; Muller, 2003)

THE PLAN

Comprehensive Autism Planning System (CAPS)

Child/Student: _____

Comprehensive Autism Planning System (CAPS)

Time	Activity	Targeted Skills to Teach	Strategies/Modifications	Reinforcement	Sensory Strategies	Communication Social Skills	Data Collection	Generalization Plan

Child/Student: _____

Comprehensive Autism Planning System (CAPS)

Time	Activity	Targeted Skills to Teach	Strategies/Modifications	Reinforcement	Sensory Strategies	Communication Social Skills	Data Collection	Generalization Plan
8:00	Reading	<ul style="list-style-type: none"> Activities <ul style="list-style-type: none"> Academic classes Nonacademic activities Transitions that require supports Any scheduled down time 						
8:50	Math							
8:50-9:00	Transition to Music	<ul style="list-style-type: none"> From the special educator and general educator 						
9:00-9:35	Music							

Comprehensive Autism Planning System (CAPS)


Child/Student:

Time	Activity	Targeted Skills to Teach	Structure/Modifications	Reinforcement	Sensory Strategies	Communication Social Skills	Data Collection	Generalization Plan
8:00	Reading	Common Core						
8:50	Math	Common Core	<ul style="list-style-type: none"> • IEP goals • Common core standards • Curriculum elements • And so forth 					
8:50-9:00	Transition to Music	Indep. Transition						
9:00-9:35	Music	Following Directions	<ul style="list-style-type: none"> • From the special educator and general educator 					

Comprehensive Autism Planning System (CAPS)

Child/Student:

Time	Activity	Targeted Skills to Teach	Structure/Modifications	Reinforcement	Sensory Strategies	Communication Social Skills	Data Collection	Generalization Plan
8:00	Reading	Common Core	Vocabulary cards Bookmark					
8:50	Math	Common Core	1/2 problems Timer Test in resource room					
			<ul style="list-style-type: none"> • Visual supports • Modification to assignments • Boundary markers • And so forth 					
			<ul style="list-style-type: none"> • From the special educator 					


Time Timer
(Visual)

Start Reading Page


Stop


Page

Comprehensive Autism Planning System (CAPS)

Child/Student:


Time	Activity	Targeted Skills to Teach	Structure/Modifications	Reinforcement	Sensory Strategies	Communication Social Skills	Data Collection	Generalization Plan
8:00	Reading	Common Core	Vocabulary cards Bookmark	Verbal Book on apes (interest)				
8:50	Math	Common Core	1/2 problems Timer Test in resource room	Verbal Computer when done				
			<ul style="list-style-type: none"> • Verbal • Points • Free time • And so forth 					
			<ul style="list-style-type: none"> • From all 					






Comprehensive Autism Planning System (CAPS)

Child/Student: +

Time	Activity	Targeted Skills to Teach	Strategies/Modifications	Reinforcement	Sensory Strategies	Communication Social Skills	Data Collection	Generalization Plan
8:00	Reading	Common Core	Vocabulary cards Bookmark	Verbal Book on apes (interest)	None			
8:50	Math	Common Core	1/2 problems Timer Test in resource room	Verbal Computer when done	Earbuds for indep work Breaks			
<ul style="list-style-type: none"> Headphones Brief break Baseball caps And so forth 								
<ul style="list-style-type: none"> From the occupational therapist 								

Comprehensive Autism Planning System (CAPS)

Child/Student: +

Time	Activity	Targeted Skills to Teach	Strategies/Modifications	Reinforcement	Sensory Strategies	Communication Social Skills	Data Collection	Generalization Plan
8:00	Reading	Common Core	Vocabulary cards Bookmark	Verbal Book on apes (interest)	None	"Raise your hand" card		
8:50	Math	Common Core	1/2 problems Timer Test in resource room	Verbal Computer when done	Earbuds for indep work Breaks	Break card "Ask your neighbor"		
<ul style="list-style-type: none"> Social narratives Written directions Scripts And so forth 								
<ul style="list-style-type: none"> From the speech language pathologist 				<div style="border: 1px solid black; padding: 5px; display: inline-block;">Ask your neighbor</div>				

Comprehensive Autism Planning System (CAPS)

Child/Student: +

Time	Activity	Targeted Skills to Teach	Strategies/Modifications	Reinforcement	Sensory Strategies	Communication Social Skills	Data Collection	Generalization Plan
8:00	Reading	Common Core	Vocabulary cards Bookmark	Verbal Book on apes (interest)	None	"Raise your hand" card	Grades	
8:50	Math	Common Core	1/2 problems Timer Test in resource room	Verbal Computer when done	Earbuds for indep work Breaks	Break card "Ask your neighbor" (MW #)	Grades Breaks needed	
				<ul style="list-style-type: none"> Days of the week Type of data Length of time to collect And so forth 				
				<ul style="list-style-type: none"> From the special educator 				

Comprehensive Autism Planning System (CAPS)

Child/Student:
+

Time	Activity	Targeted Skills to Teach	Strategies/Modifications	Reinforcement	Sensory Strategies	Communication Social Skills	Plan Collection	Communication Plan
8:00	Reading	Common Core	Vocabulary cards Bookmark	Verbal Book on aces (interest)	None	"Raise your hand" card	Grades	Bookmark for homework
8:50	Math	Common Core room	1/2 problems Timer Test in resource done	Verbal Computer when Breaks card	Earbuds for indep work	Break card "Ask your neighbor" needed (MW, #)	Grades Breaks needed	Earbuds in pocket as
		• Supports to be used in other environments: home, community, other school activities						
		• From the special educator						

Critical Mass

BRENDA SMITH MYLES
BRENDA_MYLES@MAC.COM

Full-time Employment



<https://www.forbes.com/sites/karenhigginbottom/2018/05/31/the-benefits-of-employing-people-with-autism/#2736ecc0773c>



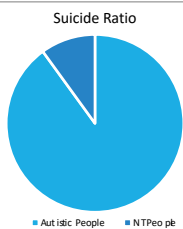
Independent Living: 20%

Newman et al. (N1752), 2013

SOCIAL INCLUSION

- 54% not invited to activities with friends
- 69% never saw friends
- 65% never talked with friends on the phone

Longevity



- Life Expectancy
- NT = 72
 - Autistic with ID = 39.5
 - Autistic without ID = 58
- Leading causes of death
- Heart disease
 - Suicide
 - Epilepsy

Guan & Guohua, 2017; Hirvikoski et al., 2018

Critical Mass

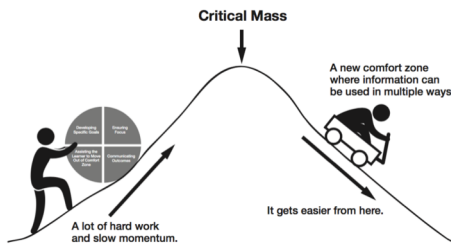
The tipping point

The place where momentum takes over and information can be applied in multiple ways – even in situations and under conditions instruction has not occurred

Critical Mass

A socio-dynamic term that is used to describe the existence of sufficient momentum such that momentum becomes self-sustaining and creates further growth.

Oliver, Marshall, & Tenebris (2001)



Adapted from Munch, 2010

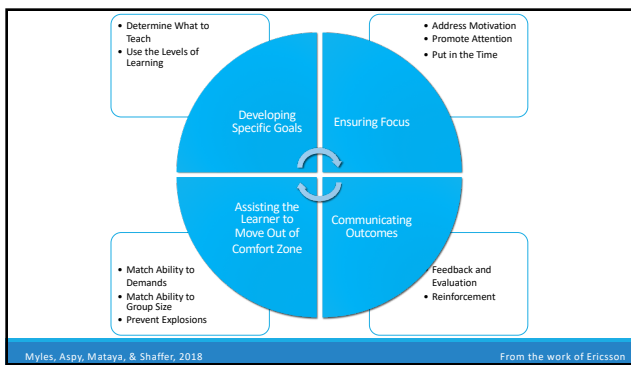
The Steps of Deliberate Practice

1. Develop specific goals
2. Ensure focus
3. Assist the learner to move out of the comfort zone
4. Communicate outcomes

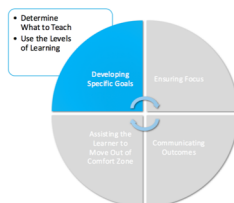


Deliberate Practice Overview





Teach skills that are implicitly learned by others



Implicit Learning

Learning without trying to do so

"Just picking it up"

"Automatically getting it"

"I don't know how I learned it – I just did"

Stay with me – I have a point →

Schipul & Just, 2016

Example: Instruction Needed for Skills Implicitly Learned by Others

WORKING IN A GROUP

If we don't teach group instruction skills, our student with ASD would ...

If we don't teach group instruction behaviors ...

Gets upset when his role is changed from timekeeper to notetaker.
 Cannot accept ideas other than his own.
 Reports minor rules that other students have learned to ignore to the teacher.
 Takes over any responsibilities that he perceives other group members are not competent to do.

If we don't teach group instruction behaviors ...

Becomes distressed if someone writes too firmly on his paper making a scraping noise.
 Cannot agree with group members in selecting a topic.
 Interrupts others without the awareness that someone else is talking.
 Cannot acknowledge that others have good ideas.
 Spends an inordinate amount of time on a minor detail, such as selecting a computer font for a report.

Is it important to teach how to participate in a group?

Most students learn this implicitly –
our students do not.

Other Skills to Teach (just a sample)

Central coherence	Prioritizing
Problem solving	Conflict resolution
Time management	Emotional understanding
Self-regulation	Flexibility
Executive function	Cause and effect
Collaboration	Asking for help
Conversation	Daily living skills

Implicit Learning

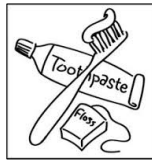
SOCIAL INTERACTION



COMMUNICATION



Daily Living Skills

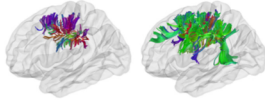


Implicit Learning

Typically relies on the the different parts of the brain working together

This is known as integration

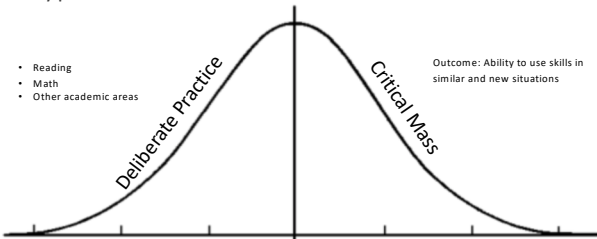
Individuals with ASD have less and different integration across brain regions



Reynold & Jan, 2010

Typical School Instruction

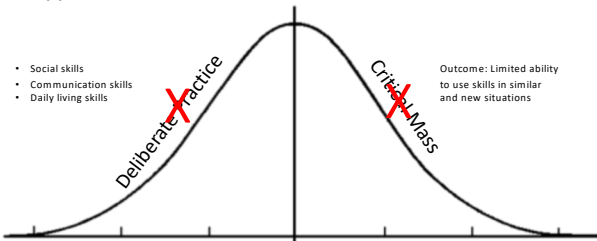
- Reading
- Math
- Other academic areas



Outcome: Ability to use skills in similar and new situations

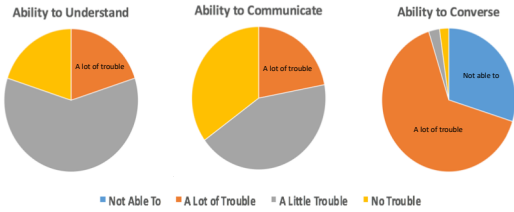
Typical School Instruction Albeit Limited

- Social skills
- Communication skills
- Daily living skills



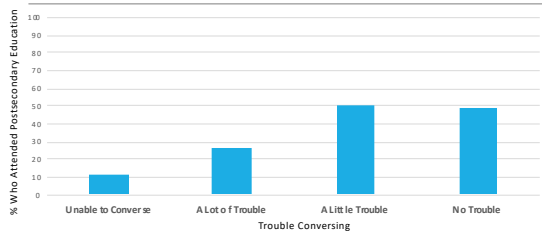
Outcome: Limited ability to use skills in similar and new situations

ASD and Young Adults: Comprehension, Communication, and Conversation Skills



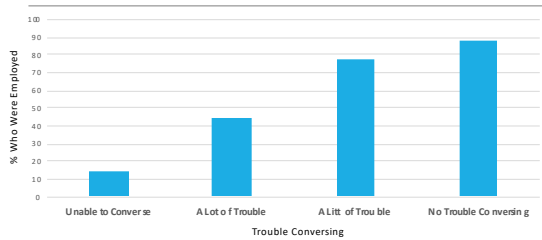
NLTS, 2015

ASD: Postsecondary Education and Conversation Skills



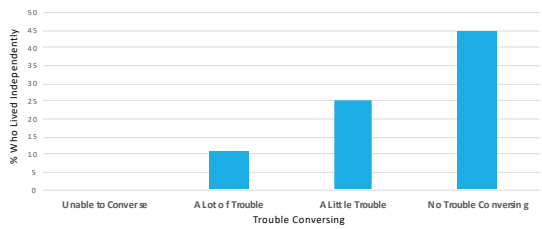
NLTS, 2015

ASD: Employment and Conversation Skills



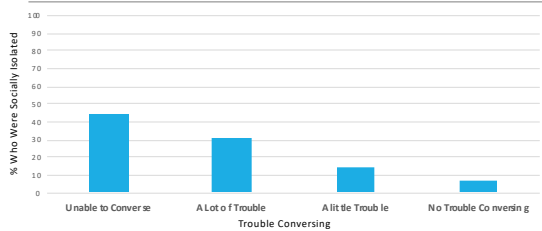
NLTS, 2015

ASD: Independent Living and Conversation Skills

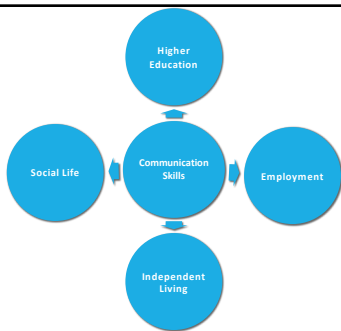


NLTS, 2015

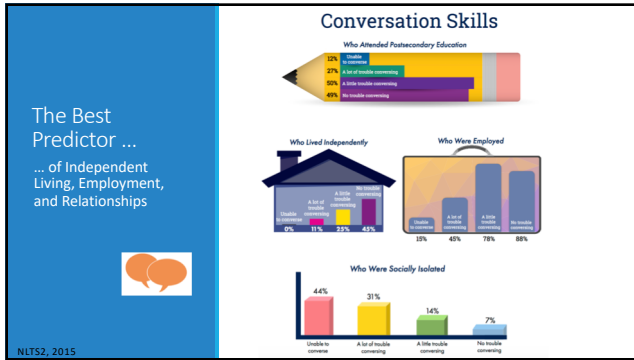
ASD: Social Isolation and Conversation Skills



NLTS, 2015



NLTS, 2015



Do we directly teach conversation skills?

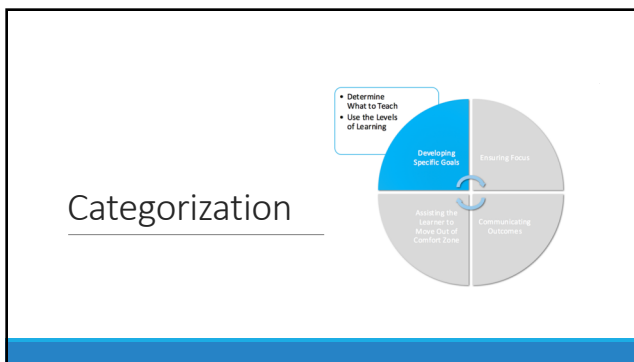
WE SHOULD ...

Talk With Me

MATAYA, ASPY, & SHAFFER, 2017

CONVERSATION STEPS	
STEP 1: Identify the Topic	
Topic: _____	
STEP 2: Balance - Ask Questions, Tell Stories, and Make Comments Within 0-2 Seconds	
Q	Asking Questions
S	Telling Stories
C	Making Comments
STEP 3: Bridge the Topic	

Mataya, Aspy, & Shaffer 2017



Benefits of Categorization

Allows new information to be integrated with existing information

Organizes information to reduce memory demands

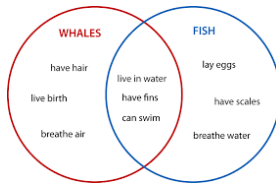
Helps us to determine relevant from irrelevant aspects

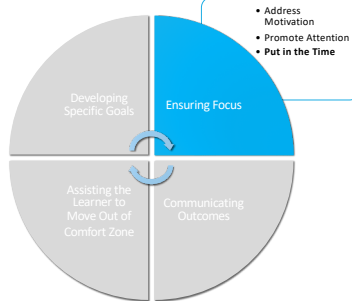
Helps with re-identification of objects over time

Picnic Grid

LOCATION	TIME OF DAY	COMPANIONS
TRANSPORT	FOOD	ACTIVITIES

Mary Buck, personal communication





Myles, Aspy, Matays, & Shaffer, 2018

From the work of Ericsson

Put in the Time

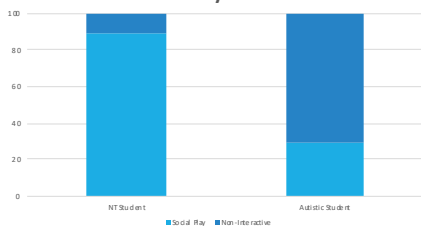
Regularly scheduled instruction and practice

Intense, but not always rote (use levels of learning)

- Sessions may be short
- Increase time, as needed

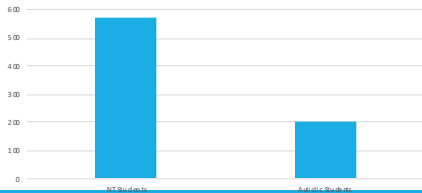
Have children and adolescents with ASD had the opportunity to put in the time?

**Percent of Engagement Time for
Preschool Students During One Hour
of Play Time**

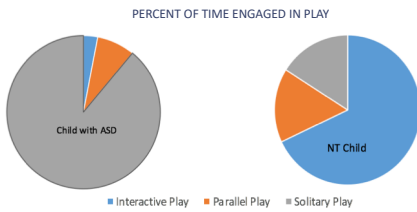


Let's Apply This ...

1st - 5th Grade: Hours of Interacting With Others



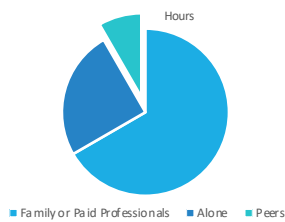
A Comparison of Play Formats for Preschool Children with ASD and Their NT Peers (Estimated)



Gunn, Trembath, and Hudry (2014)

Hestenes & Carroll (2000)

Companionship During Free-Time Activities for Adolescents with ASD



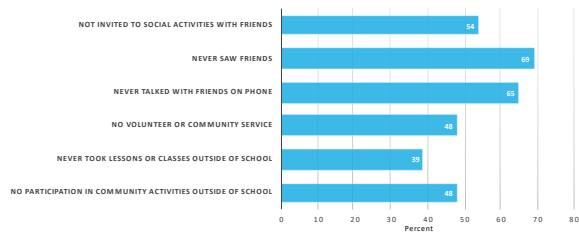
Orsmond & Kuo (2011)

Percent of Adolescents with ASD Who Engage in Free-Time Activities

Watching television	86%	Visiting with friends or relatives	20%
Using computer	53%	Napping	15%
Physical activity	47%	Having a conversation	15%
Listen to music	45%		
Shopping	44%		
Relaxing (unoccupied)	36%		
Reading	36%		

Ormond & Kuo (2011)

Social Participation of Young Adults with ASD



Roux et al., 2015

