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WHO ARE OUR STUDENTS AND WHAT DO THEY NEED

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Overview

Exercise: The empty chair

Neuroscience of the high IQ brain

Common characteristics

Exercise: What characteristics do you recognize?

Who are the twice exceptional (2e)?

Ten flavors of 2e & how to help

Exercise: Problem solving with student profiles

The bright student dilemma

Exercise: Takeaways & wonderings

AGENDA









				ASYNC	HRONY			
			10 Years					
		8 Years		6 Years		7 Years		_
A 5	Year	Old			4 Years		5 Years	
		Math	Reading	Writing	Emotional	Social	Social Skills	
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NEUROSCIENCE ABOUT HIGH IQ

- Regional brain volume is BIGGER in some areas (left hemisphere, bilateral frontal cortex, phonological loop, working memory, sensory, anxiety, amygdala ← emotional regulation)
 - And smaller in others (lateral-parietal junction)
- DENSER connectivity between some areas (arcuate fasciculus, corpus callosum - "information highways")
 - And sparser connectivity in others
- Development happens on a different timeline
- High IQ brains are physically different

















YOUR BRAIN MATURES BACK TO FRONT

"Grey matter thickens in childhood but then thins in a wave that **begins at the back of the brain** and reaches the front by early adulthood" (Powell, 2006)

"The **prefrontal cortex** is the decision-making part of the brain,

Atention Atention Behavior and Deferintal Cortex

responsible for [the] ability to plan and think about the consequences of actions, solve problems and control impulses."

"Executive Function"









10 WAYS TO SUPPORT EF

- Make time visible (schedules, calendars, timers, tech)
- 2. Visible cues, charts, checklists for EVERYTHING
- 3. Folders, not binders
- 4. Keep a "master binder" of all handouts/homework/worksheets
- 5. Have extra pencils/markers/rulers/etc available
- 6. Pre-planning to break down big projects
- 7. Graphic organizers, sticky notes & highlighters
- 8. Homework reminders; flexible late/missing policies
- 9. Class time to update the planner & organize backpacks/folders/desks SMART + easy
- 10. Follow students' Student Learning Plans (IEP & 504)



THE GIFTED BRAIN IS LIKE

A Ferrari... Neuroscience Common Link: with a tiny Lack of Inhibition! steering wheel SMART + easy

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PERFECTIONISM

- Erase a hole in the paper
- Impatient with others who aren't "doing it right"
- Meltdown at the first sign of trouble
- Can't make a decision
- Reach for impossible goals
- Hate criticism, Dwell on mistakes
- Trouble accepting compliments
- Unwilling to start, afraid to try, "I don't want to"
- "Challenge Cards" in the corner of the classroom may not work...

SENSITIVITY

- Too loud: fireworks, movies, toilets
- Too scary: movies, even Disney ones!
- Crying when another kid gets hurt
- Concern about the tigers going extinct
- Scratchy tags in clothing, buttons, sock seams...
- Low pain tolerance
- Bathing/swimming: water in my eyes/nose!
- Picky eater foods touching, textures, smells
- Food sensitivities/allergies
- Big reactions to minor setbacks, discipline
- Sensory seeking loves snuggling, soft fabrics...
 - Or, hates to be touched...

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INTENSITY

- Tears of joy at a beautiful sunset
- So focused they don't "hear" you
- Obsessions about a topic of interest
- Difficulty with transitions
- Big focus on fairness
- Competitive: most, best, fastest, highest
- Intense nightmares, fears
- Sleep issues, hard to settle down, stay asleep
- Major meltdowns
- Mood swings: higher highs, lower lows
- Stubborn, strong-willed, inflexible

OVEREXCITABILITIES - OES

- Dabrowski's 5 "super-stimulatibilities"
 - Psychomotor Sensual Imaginational Intellectual Emotional
- Hard wired fMRI shows "Brains on Fire" (Eide, 2004)
 - Experience a more intense reaction
 - For a longer period than normal
 - To a stimulus that may be very small
- Honor it! Coach how to <u>cope</u> with it, not <u>change</u> it



TAMING THE WORRY MONSTER

From Dr. Dan Peters, Summit Center

- Amygdala is the seat of emotion & worry
 - Tries to trick you, exaggerates, lies, "takes over"
- Big brain surrounds the tiny amygdala
- Use your big brain to keep your amygdala from taking over
 - Keep your brain fed and strong nutrition matters!
 - "Boss it back!"









WHO ARE THE TWICE-EXCEPTIONAL (2e)?

Bright, gifted, talented, highly capable, and/or high IQ

Neurodiversity, disability, learning difference, mental health concern, and/or other challenge

"Their gifts may mask their disabilities and their disabilities may mask their gifts."

(Reis et al., 2014, p. 222)



NEURODIVERSITY, ANOTHER LENS ON 2E

- Neurodiversity is not just about autism
- Different brain "operating system," patterns of strengths and challenges
- **Careful**: neurodiverse brains are not "worse" (or "better")
 - They are **DIFFERENT**
- Many common diagnoses are better understood as neurodiversity
 - ADHD strengths in quick response time, acting under pressure, noticing changes
 - Dyslexia strengths in visual/spatial, creativity, big picture, entrepreneurial
 - Autism strengths in spotting patterns, details, logic





WHY DIAGNOSIS MATTERS

"Why do you need a label?

Because there is comfort in knowing you are a normal zebra, not a strange horse.

Because you can't find community with other zebras if you don't know you belong.

And because it is impossible for a zebra to be happy or healthy spending its life feeling like a failed horse."

> The important part is that the label is ACCURATE Find the correct root cause(s)



WHY DIAGNOSIS MATTERS

- Accurate diagnosis helps build positive self-concept
- "Lazy," "Unmotivated," Try harder" is harmful
- Missed opportunities to support
- Applying the wrong supports causes frustration when they don't work
- Wasting time that could be spent developing strengths
- Early intervention works better neuroplasticity!
- Dyslexia intervention in 1st or 2nd grade is **twice** as effective as in 3rd (Lovett et al., 2017)
- 2e students are masters of masking & compensating
- Accurate diagnosis is tricky! It's probably not just one thing...



BUCKET THEORY

- Everyone has a bucket to handle adversity
- As challenges stack up, they fill up your bucket
- When your bucket overflows, that's overwhelm

Game Plan

I. Identify the rocks in your bucket
Get them out (or make them smaller)

→ Create more space for **resilience**







10 FLAVORS OF 2E

- The most common flavors of 2e
- Many 2e kids have more than one flavor
- Teachers are NOT qualified to diagnose
 - But having awareness of the possibilities will help you problem solve



VISION PROCESSING DISORDERS (VPD)

Common but subtle – worth screening anyone having trouble How the brain processes what the eyes see Many flavors: Convergence insufficiency, teaming, tracking, 3D, distance vs. near Letters/words/numbers flip (b d p q), move, or get blurry Goofy mistakes in math (+ - x) Clumsy, trouble with sports & balls, dislikes 3D movies/rides Fatigue, lack of stamina when reading, especially with small fonts Inconsistent scores on standardized tests

NOT dyslexia, but it's common to have both

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AUDITORY PROCESSING DISORDER (APD)

Hearing is normal or super-sensitive One ear "hears" a split second before the other Wears hats, hoods, long hair, headphones that cover the ears Dislikes noisy environments, trouble understanding in background noise Fatigue, comprehension problems in lecture halls, big classrooms Trouble with conversational timing (social!) Rising anxiety/fatigue/frustration through the day May look like ADHD, ODD, PDA, explosive behavior, or withdrawal **Common reason for classroom overwhelm/behavior**













(STEALTH) DYSLEXIA

- Phonological awareness, trouble with rhyming & wordplay
- Reads everything as a sight word, trouble sounding out
- Trouble with spelling, writing, grammar
- Skips or substitutes words when reading
- Inconsistent scores on standardized tests
- Trouble with rote memory
- Despite this, excellent comprehension

Free oral screener for dyslexia - www.thepasttest.com



DYSCALCULIA

- Less well understood than cousin dyslexia
- Difficulty with judging quantities, less vs. more
- Lack of number sense
- Trouble with calculations
- Can memorize some sequences but not understand why
- Good math problem solving skills, but trouble with rote math facts?
 - →Consider dyslexia

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How to Help

Accommodations

- Provide manipulatives
- Provide number line, hundreds chart
- Provide multiplication table
- (Provide calculator)

WRITING CHALLENGES (DYSGRAPHIA)

Many causes:

- Physical/motor challenges, strength, pencil grip
- Lack of motor automaticity in writing letters/numbers
- Dyslexia (especially spelling)
- Vision Processing Disorders (VPD)
- Trouble getting ideas out, organizing thoughts

• Figure out the specific cause(s)









ADHD LOOKALIKES

"A true diagnosis of ADD/ADHD should be as a last resort made by exclusion after ruling out other possible factors such as:

• depression, anxiety,

• learning disabilities,

• preoccupation with personal issues,

 unrealistic expectations, situational difficulties and abilities and expectations,

auditory processing deficits,

• mild brain injury, ill health, substance abuse,

lack of sleep and/or nutrition, current use of med.
(Webb et al, 2005)

Vision processing (VPD) Auditory processing (APD) Sensory processing (SPD) Sleep apnea Allergies (food or environment) Sensitivity to food coloring Chemical sensitivity Mold sensitivity PANDAS/PANS

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SLEEP APNEA (AND OTHER SLEEP DISTURBANCES)

 Sleep apnea in teens can be silent No gasping, night waking, snoring, etc.
REM sleep is needed for consolidating and storing long-term memory Lack of quality sleep can cause symptoms identical to ADHD
Easy to rule in/out with a sleep study



PANDAS/PANS

- Autoimmune reaction to strep (and/or other bacteria/viruses/mold) that creates inflammation in the basal ganglia of the brain
- Common: Irritability, Low frustration tolerance, Mood swings, Anxiety (especially separation anxiety, irrational, bedtime, or constant)
- Often: Sleep disturbances, OCD, Repetitive/intrusive thoughts, Tics (physical or verbal), Picky/restricted eating, Sensory sensitivity
- **Sometimes:** Headache, Stomachache, Urinary frequency, Bedwetting, Math or handwriting regression, Aggression, School refusal
- Stanford says only 40% of their PANDAS patients were acute onset













THE BRIGHT STUDENT DILEMMA



Most kids "learn how to learn" in elementary school

Reading, spelling, subtraction, multiplication, etc.

Learning to tolerate confusion, recovering from mistakes, asking for and receiving help...

Building persistence, perseverance, grit, growth mindset

Time management, study skills (middle school)



Bright students already know most of the curriculum

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School is too easy, not challenging

Two implications:

I. Lack of opportunity to build these skills

2. Any 2e disabilities remain hidden

GRIT >> IQ (2016)

- Duckworth studied success at:
 - West Point Military Academy
 - National Spelling Bee
 - High school juniors, 8th graders
- "It wasn't social intelligence. It wasn't good looks, physical health, and it wasn't IQ. It was grit."
- "Self-discipline predicted academic performance more robustly than did IQ."
- "In our data, grit is usually unrelated or even inversely related to measures of talent."



GROWTH MINDSET (2006)

- "Effort Effect"
 - Kids who were told they were smart didn't try as hard next time
 - Kids who were praised for <u>effort</u> did better
- Takeaways
 - Don't praise kids for being smart
 - Praise <u>real</u> effort and progress (not results)
 - "Keep on trying..."
 - "Practice really works!"

"Everyone should own thi —Сниг Нелгн & Дам Неатн, authors of Made	s book." to Stick and Switch
mind	set of success
HOW WE CA	4
LEARN TO FUL	FILL
OUR POTENTI	AL
*parenting *business *school *relationship	"Will prove to be one of the most influential books ever about motivation." —Po Benevice, author of NurtureShock
CAROL S. DWECK,	Ph.D.



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PREVENT GIFTED CHILD SYNDROME

DO

- Regular challenges create opportunities to build grit
- Normalize making mistakes and asking for help
- Reward effort, not results
- Be on the lookout for subtle 2e
- Provide accommodations <u>universally</u> (like a pencil)

DON'T

- Create a pressure cooker with a high volume of work
- Set unrealistic expectations
- Expect success in everything
- "We expect great things from you"
- "You're so smart, you should be able to do this"

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REMINDER: ADULTS DON'T HAVE TO BE GREAT AT EVERYTHING



Adult careers will focus on **STRENGTHS**

Adults find "niche" environments that support or avoid their weaknesses (Armstrong, 2012)





THANK YOU

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