Executive Functioning

START/CSIDD Region 1

Welcome

Today we are going to learn about the important functions our brain uses to help us navigate all the big and small moments of our day and how this looks different in people with developmental disabilities.

What if???

- *You can't hear me,* **or**
- *You get a really important phone call,* **or**
- *You spill coffee all over your device*

What do you need to consider?
What do you do to respond?

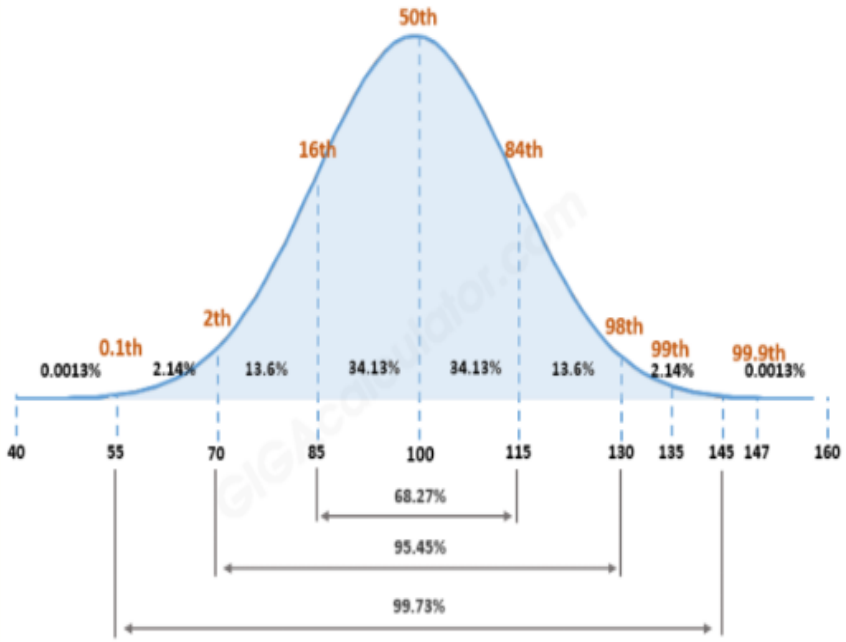


Intelligence

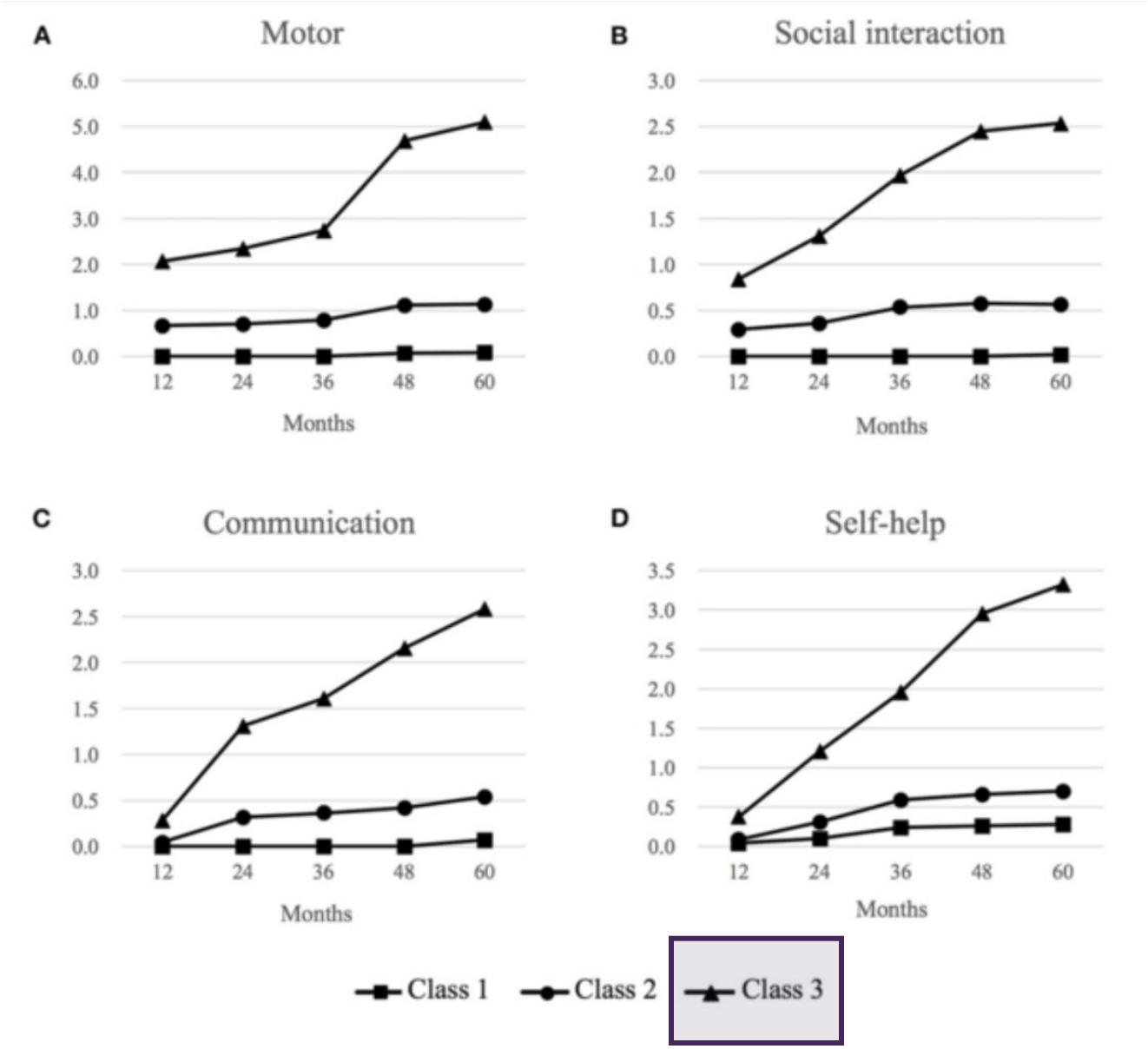
- Cognitive Ability
  - The ability to comprehend verbal information and attain knowledge
  - The ability to think using visual-spatial reasoning, long-term recall of information, auditory processing
  - The ability to do these things fluidly and efficiently

Intelligence Across the Lifespan

- Intellectual ability remains stable
  - It improves along a general developmental trajectory and can be statistically normed
  - If I score 100 at age 5, I am likely to score 100 at age 70
- Significant shifts in IQ scores should be cause for curiosity…
  - Was a different methodology used to measure IQ between sessions?
  - Was there a major medical or psychological change that could have impacted scores?



Class 3: 90% had no known developmental disability including IDD or ASD



Skill

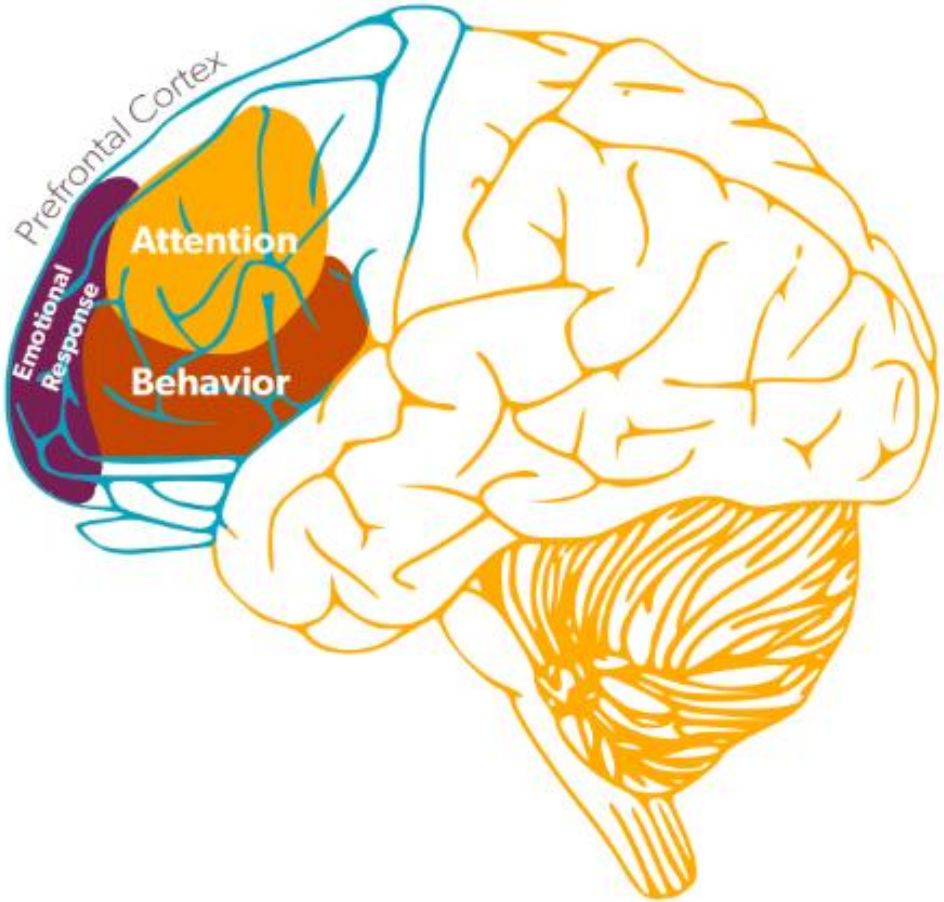
- An acquired set of knowledge that is contingent on cognitive ability
  - Need processing and memory to learn
  - Skills can be taught, practiced, and improved
- Includes academic and adaptive skills
  - Achievement/academic tests measure performance in reading, writing, math, etc.
  - Adaptive tests measure performance at meeting developmental and social standards
  - Conceptual skills – e.g. using numbers and words to develop concepts about the world
  - Social skills – e.g. using communication and social norms to build relationships
  - Practical skills – e.g. using self-care and community knowledge to execute daily functions



Meet the Executives…

A set of cognitive processes that are necessary for the cognitive control of behavior. They allow us to select and monitor behaviors as we work toward attainment of chosen goals. They align closely with measures of intelligence.

The ‘Thinking’ Brain



1

Impulse Control

Think before acting

2

Emotional Control

Keep feelings in check

3

Flexible Thinking

Adjust behavior to unexpected changes

4

Working Memory

Keep key information in mind while using it

5

Self - Monitoring

Self-awareness to how one is doing in the moment

6

Planning and Prioritizing

To set and meet goals

7

Task Initiation

Take action to get started on tasks

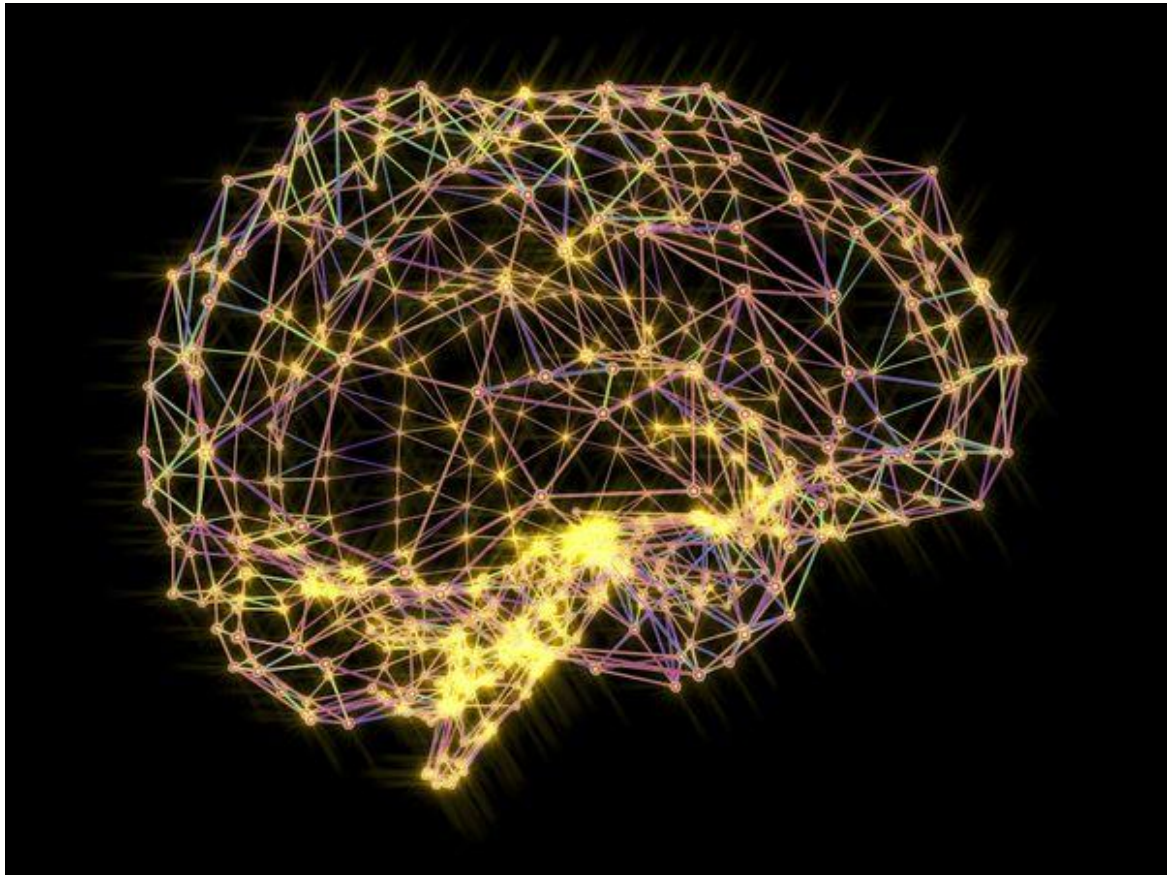
8

Organization

Keep track of things physically and mentally



The Executive Functions Require



FAME

- Focus
- Activation
- Memory
- Effort

A Tale of Two Engines

Consider a neurotypical brain to be like an all-wheel-drive sports car

- Turn the key, it starts
- Push the pedal, it goes
- Turn the wheel, it fluidly moves along the path

In a person with some Developmental Disabilities (DD), the brain is more like a steam engine train

- Requires slow introduction of coal, ignition, time to warm
- It can only move forward with clearly defined barriers
- It takes a lot of time and energy to redirect, slow, and stop





Impulse Control



Definition	Implications for Person with Delays
The ability to mitigate emotion and behavior (thinking before acting)	Unplanned actions, particularly when presented with ‘strong’ stimuli. High risk behavior.

Emotional Regulation



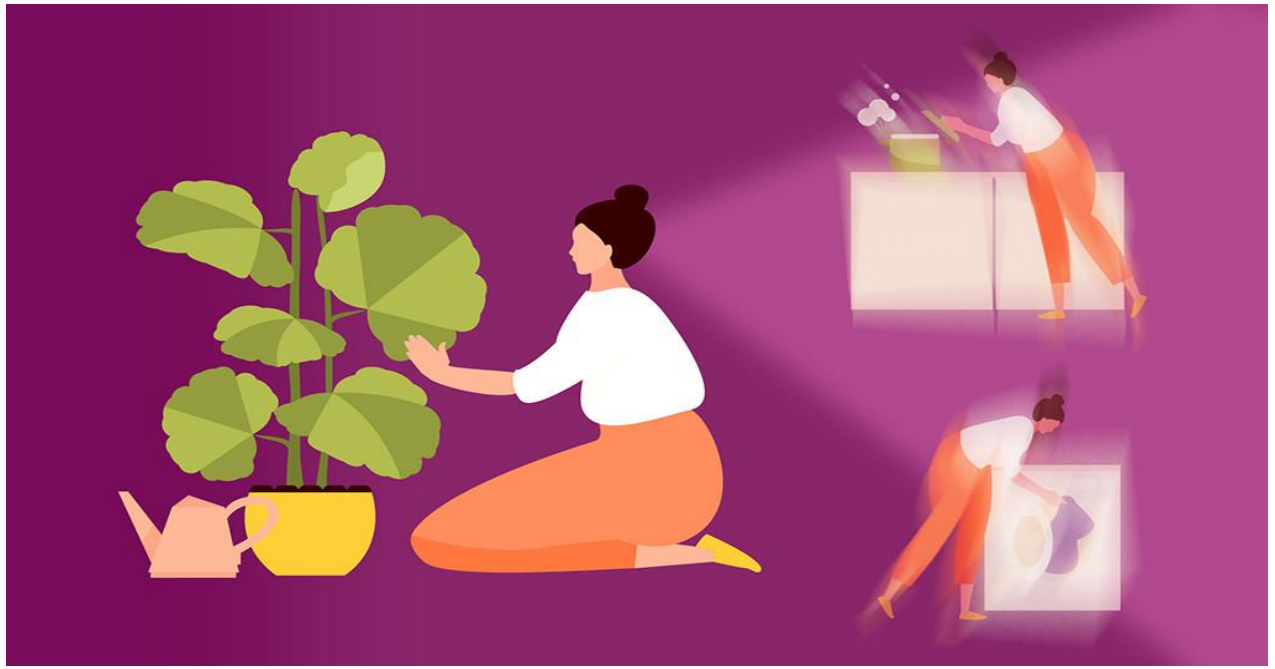
Definition	Implications for Person with Delays
Ability to manage emotional experiences with socially acceptable responses.	Quick to anger or become aggressive when stressed Emotions may not match situation

Flexible Thinking



Definition	Implications for Person with Delays
Ability to adjust actions to new/shifting situations based on past experiences.	Establishing very rigid routines. Difficulty during transitions/change. Literal translation of abstract language.

Working Memory



Definition	Implications for Person with Delays
Ability to retaining information for a brief period while performing mental operations on that information. Temporarily acting on information.	Difficulty following instructions Difficulty engaging in conversation Difficulty focusing Easily distracted Prone to mistakes

Self-Monitoring



Definition	Implications for Person with Delays
Extent of a person's ability to control the image they present to others in social situations. Ability to adjust the way we think and act when there are shifts in tasks, perspectives, or environments.	Displaying strong emotional reactions Actions may inadvertently offend or disrupt others Difficulty changing an action mid-response (shifting course)

Planning and Prioritization



Definition	Implications for Person with Delays
Ability to decide and to make arrangements in advance.	Lateness or forgetfulness Prioritizing less-important tasks Incomplete tasks or inaccuracies in tasks

Task Initiation



Definition	Implications for Person with Delays
Ability to be motivated, to take on new tasks, and to persevere with those tasks until completion	Appearing distractable Appearing withdrawn May say what they intend to do but never actually act on it

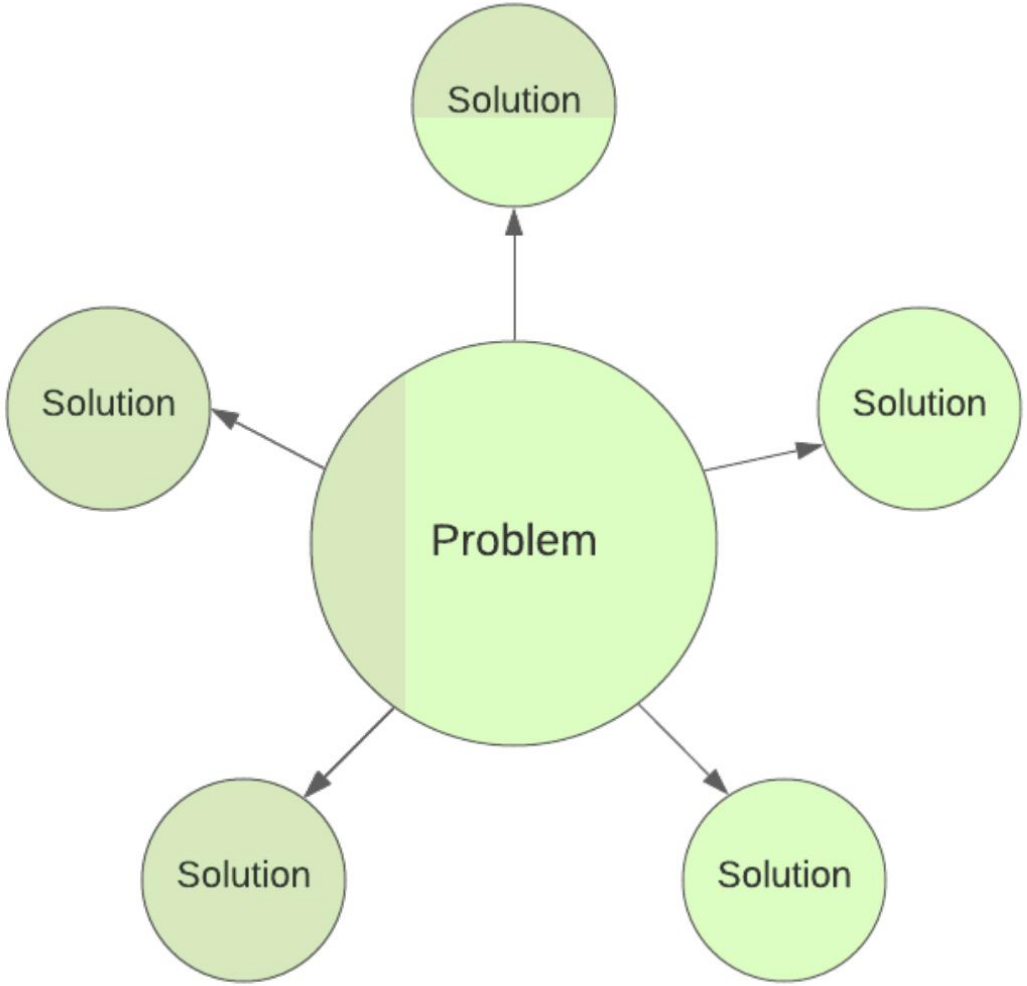
Organization



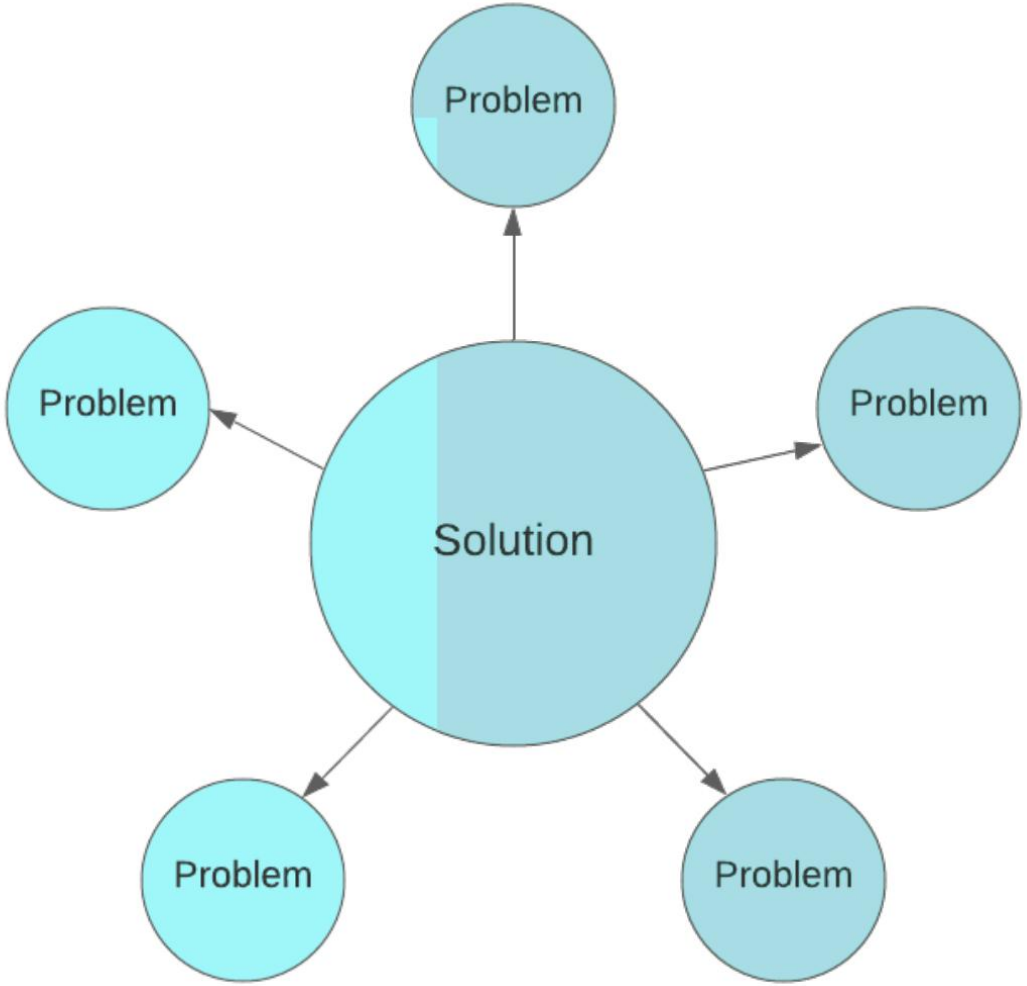


Definition	Implications for Person with Delays
Ability to structure tasks and environment.	Lose materials Unkept/disheveled materials Incorrect materials Difficulty attending to or completing tasks

Good Executive Function



Impaired Executive Function



Don’t Fall for the Slippery Slope



What you see…	What you think…	What you do…
Not completing an expected task Making same mistake repeatedly Being late to an appointment/work	Noncompliance Willful misconduct Stubbornness Manipulation Opposition Attention Seeking Irresponsibility Laziness	Take away preferred items/activities Prevent them from doing other tasks until they get it ‘right’ Threaten the person to ‘shape up’ or ‘be an adult’ Ignoring *Pressing charges*

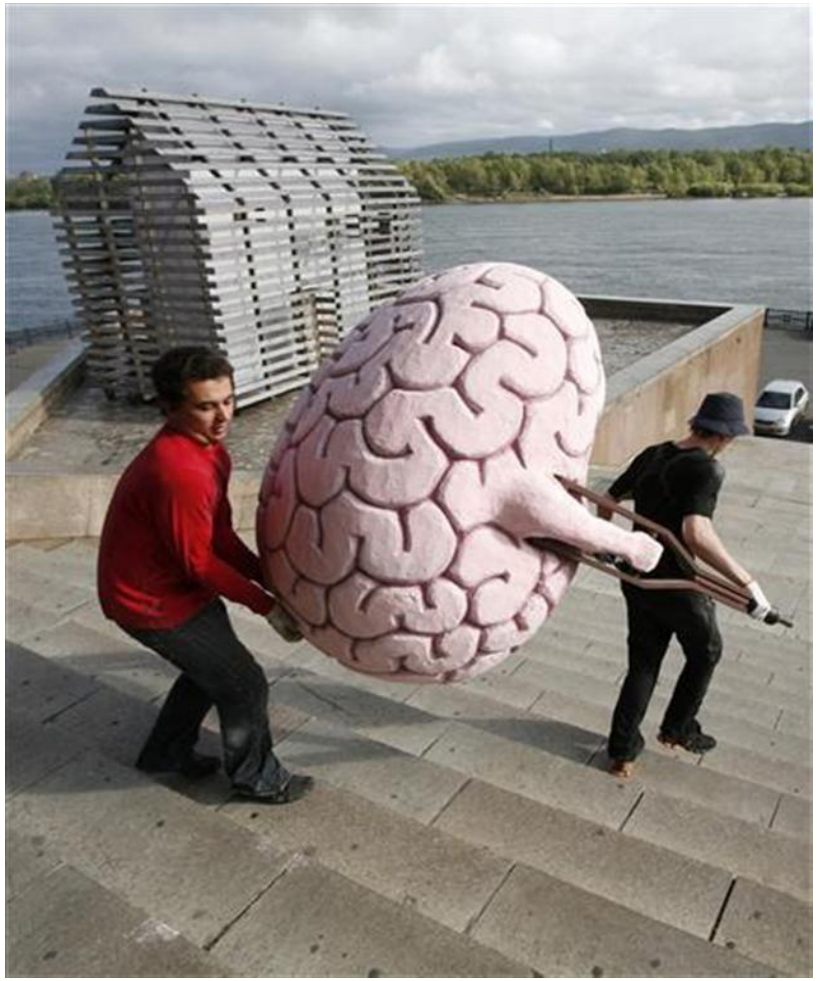
Identify and Support the Delays Instead



What you see...	What you think...	What you do...
Not completing an expected task Making same mistake repeatedly Being late to an appointment/work	Executive Functioning Delays	Accommodations Modifications Therapeutic Supports

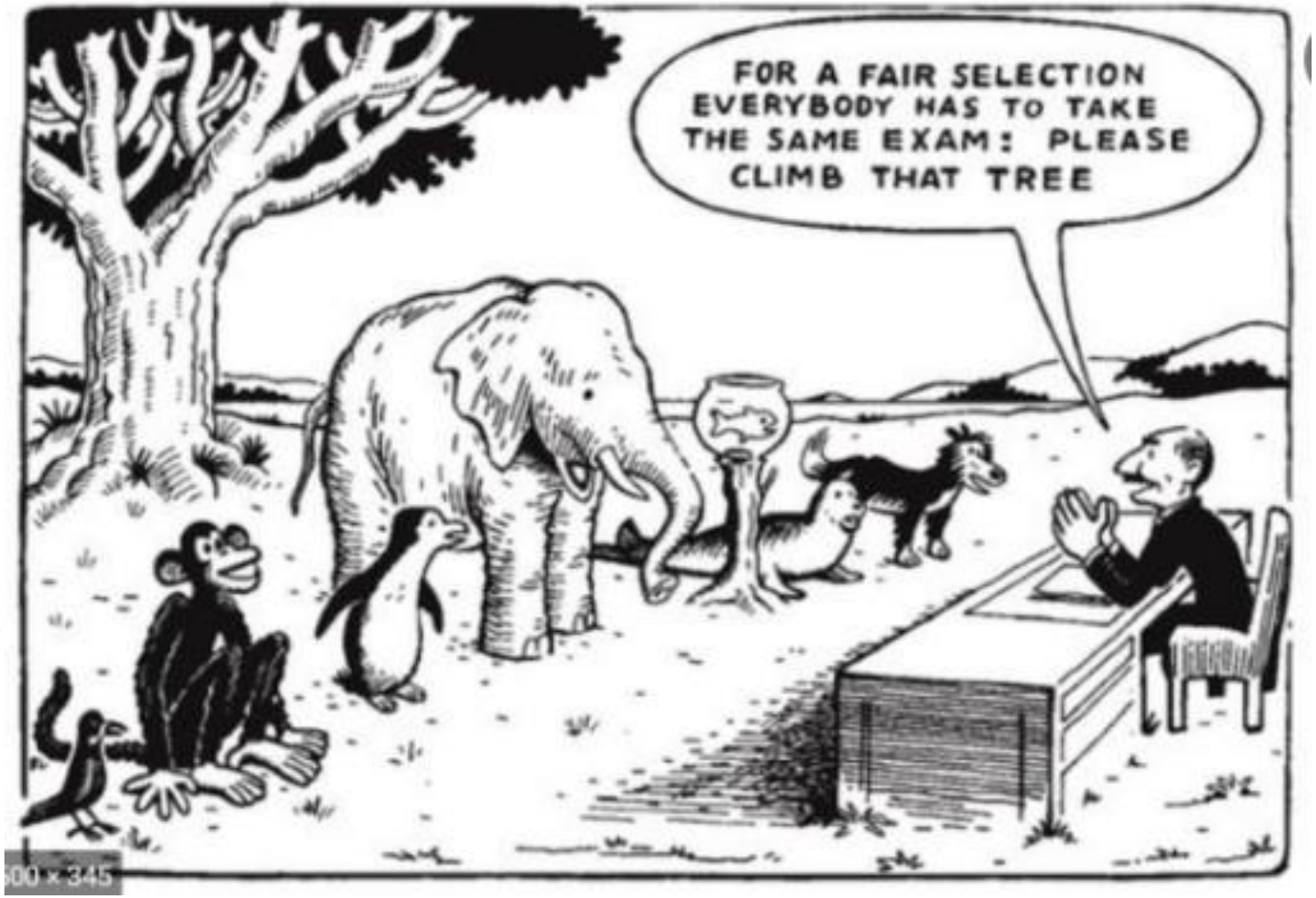
Strategies

- Proactive interventions and approaches
- The greater the functional impairment, the more external structure and support the person will require.
- Cannot do brain surgery so we support by becoming an external brain.
  - Accommodations
    - Changes to the environment
  - Modifications
    - Changes to the expectations
  - Therapeutic approaches
    - Focus on nurturing and supporting the person to avoid/respond to stress





CLEARING A PATH
FOR PEOPLE WITH SPECIAL NEEDS
CLEARS THE PATH FOR EVERYONE!



Results in flourishing



Accommodations and Modifications

- Chunking and chaining
- Concrete and simple language
- Scaffolding



Accommodations and Modifications

- Teach coping strategies
- Teach emotional identification in self and others
- Teach social skills



Accommodations and Modifications

- Provide more time
- Provide breaks
- Reduce demands
- Reduce extraneous stimuli



Accommodations and Modifications

- Visual Instruction Methods (VIM)
  - Graphic aids with steps to complete tasks
- Visual Expression Methods (VEM)
  - Communication
- Visual Organization Methods (VOM)
  - Visual schedules
  - First/then boards
  - Timers







Accommodations and Modifications

- Color coding
- Labeling
- Lists



Therapeutic Approaches

- Strength spotting
- Reassurance
- Encouragement
- Validation
- Warm approach/language



Questions?