ASD and Executive Functioning
Shirley Padilla-Martinez, Lynea Pearson, and Ashley Johnston
District-wide SLP Meeting
February 24, 2016

Learner Outcomes
1. SLPs will understand how autism can impact a student’s executive functioning skills.
2. SLPs will be given an overview of assessments for Executive Functioning.
3. SLPs will learn research based interventions for social pragmatics and executive functioning for students with autism.
4. SLPs will be introduced to ideas, strategies and new techniques for incorporating "true peers" and siblings in therapy groups with students identified on the spectrum.

Agenda
Definition of Executive Functioning
Autism and Executive Functioning
Assessments
Research Based Interventions
Social Skills
Video Coaching
Sarah Ward
Unstuck and On Target
Other Models

Definition of Executive Functioning
"The executive functions are a collection of processes that are responsible for guiding, directing, and managing cognitive, emotional and behavioral functions, especially during active, novel problem solving."

BRIEF Professional Manual - Peter Isquith

Definition
- Planning and sequencing of complex behaviors
- Ability to pay attention to several components at once
- Capacity for grasping the gist of a complex situation
- Resistance to distraction and interference
- Inhibition of inappropriate response tendencies
- Ability to sustain behavioral output for relatively prolonged periods

Model or Framework
Orchestra Role

Doesn’t do things by themselves
- Perception
- Attention
- Language processes
- Visual-spatial processes
- Memory
- Sensory inputs
- Motor outputs
- Knowledge and skills – social, academic

Conductor

Conductor - Executive Functions
- Paying attention
- Inhibit
- Self-monitor
- Shift flexibility
- Initiate
- Working memory
- Plan
- Organize
- Task-monitor

Three Factor Model
- Cognitive Regulation
- Behavior Regulation
- Emotion Regulation

Side notes
- Modulation of emotions (bootstrapped into EF) – will disrupt EF but not a part of EF
- No such thing as an EF Disorder
How to assess
Rating Scales
Performance tests
Brain Imaging

Rating Scale
BRIEF (Behavior Rating Inventory of Executive Function)

Performance Tests
Stroop
BLUE  GREEN  YELLOW
PINK  RED  ORANGE
GREY  BLACK  PURPLE
TAN  WHITE  BROWN

Rey-Osterrieth Complex Figure
How do they organize complex information, colors show 1st, 2nd, 3rd, etc., then take away and see what they remember (immediate recall)
**Verbal Fluency**

Verbal Fluency – ie: tell me all the words that start with 'f'

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**Assessment**

Dellis–Kaplan Executive Function System (D–KEFS)

**Age Range:** Ages 8 through 89 years

**RTI Tiers:** RTI Levels 2 and 3

**Completion Time:** Variable depending on subtest selected: full battery 90 minutes

**Norms:** Normed on over 1,500 individuals demographically and regionally matched with the U.S. population

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**Research-Based Interventions**

- Socialsibs
- Video Coaching
- Sarah Ward - STOP
- Unstuck and On Target
- Other Models

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**Socialsibs:** Social Motivation Hypothesis

- Early impairments in social attention and decreased sensitivity to social reward triggers a cascade of developmental effects disrupting social development (Dawson et al, 2002; Dawson et al, 2005; Chevalier, Ko ris, Troiani, Brodkin & Schultz, 2012).
- Impairments in social orienting (Osterling, Dawson & Munson, 2002; Kei et al, 2005; Riby & Hancock, 2009)
- Decreased desire for, and enjoyment of, social rewards (Bauminger & Kasari, 2000; Baron-Cohen & Wheelwright, 2003; Chamberlain, Kasari, & Rotheram-Fuller, 2007; Demurie et al, 2011)

Amy Donaldson, ASHA 2015
Socialsibs: Key Components

- Pivotal Response Training
- Sibling Mediation (Socialsibs)
- Video Modeling
- Family Interaction / Dynamics
- Sibling Interaction
- Parent Coaching

Definitions: PRT II

- Pivotal behaviors
- Motivation
- Initiations
- Self-management
- Response to multiple cues


Amy Donaldson, ASHA 2015

Definition: Video Modeling

- Use of video recordings to demonstrate a desired or targeted behavior
- May assist in making the social communication behavior salient for the child with ASD
- Eliminates distractions co-occurring within environment
- Highlights specific social communication behavior
- Provides opportunities to demonstrate multiple ways to demonstrate behavior (e.g., verbal, nonverbal)

Banda, Matuszny, & Turkam, 2007

Socialsibs: Prioritize Social Communication Skills

Combines evidence-based practices
- Peer-mediated intervention
- Video modeling

Primary aims of project:
- Increase child with ASD social communication skills
- Increase sibling dyad social engagement
- Improve generalization of social communication skills to home and community
- Social interactions amongst family members
- Social validity for families to determine feasibility of model for university SLP pre-professional clinical training
- Clinician fidelity

Amy Donaldson, ASHA 2015

Overarching Models of Intervention

Overarching Model of Intervention: Pivotal Response Training (PRT; Koegel et al, 1989)

Evidence-based, naturalistic intervention based on the principles of Applied Behavior Analysis (ABA)

Key elements:
- Child choice
- Reinforcing all attempts
- Teaching embedded in natural contexts
- Interspersing acquisition and maintenance
- Use of highly-preferred objects/activities

Amy Donaldson, ASHA 2015

Video Coaching

Project with CU SLHS department and Temple Grandin School

Adapt to Interact framework
The ultimate goal of executive function intervention is to establish regular behavioral/cognitive routines to maximize independent, goal-oriented problem solving and performance.

Inhibit, Shift, Emotional Control
- Environmental structure
  - Consistent routine/schedule
  - Visuals
  - Modeling appropriate behavior

Get Ready, Do, Done

1. Get Ready
2. Do
3. Done

Strategy: Future Picture for Directions
- Increase forethought for assignments:
  - What will the assignment look like in the end?
  - What are the parts?
  - How much time do I have?
  - In that time, what needs to be accomplished?
School Presentation and Next Steps
Unstuck and On Target!

Starts with Flexible Supportive Classroom

- Smooth, calm transitions between tasks, activities and expectations
- Absence of power struggles (request made, student does not comply, teacher refrains from making a second demand)
- High ratio of praise to corrections (target 4:1) and use of strategies: scaffolding, elaboration, and modeling
- Extensive use of active priming (or heads up that something is coming)
- Clear, explicit, and specific expectations for the work to be done
- Classroom is organized to eliminate clutter and visual distractions

Flexible and Supportive Educator

- Flexible
- Exhibit a calm demeanor, an empathetic understanding of the student’s outlook
- Problem-solve both internally and externally
- Know yourself
- "Live aloud" or provide explicit instruction
- Treat students with respect as active partners in their education
- Empower your students
- Provide the right level of support through just-right cuing techniques (use guided practice with faded cuing to build new skills)

Unstuck and On Target Curriculum

- Teaches flexibility through concrete, hands on experiments with physical and cognitive flexibility
- Explains why it is important to be flexible
- Teaches students to be flexible
- Teaches what goals are and how to achieve them
- Teaches students to want to be flexible and goal directed

Who benefits?

- 8-11 year old students with Autism
- Intact language (at least a 2nd grade level) - verbal intervention
- Intact cognitive skills
- Students who struggle with flexibility, organization, and planning

Overview

Targets Flexibility

- Definition, vocabulary, coping strategies, personal heroes, why be flexible, scripts, friendships, future

- Setting goals: Goal-Plan-Do-Check, target goals and when they conflict
Resources

Yale Vivo Communication Rating Scale


Book recommendations from Sarah Ward

Books

“Late, Lost and Unprepared” by Joyce Cooper-Kahn and Laurie C. Dietzel

Books

“Boosting Executive Skills in the Classroom” by Joyce Cooper-Kahn and Margaret Foster

Book

“Coaching Students with Executive Skills Deficits” by Peg Dawson and Richard Guare

For MS and HS students who are not getting their work done

Book

by Peg Dawson and Richard Guare

Textbook

Textbook “Executive Functions and the Frontal Lobes”