Module 4.2 Executive Functions

What Are Executive Functions?

- Umbrella term that includes several traits necessary for success in various domains of life
- Parts of EF are present at younger ages, but more evolved at the Higher Order level

Executive Functions (EF): Key Concepts

- Multiple EF traits are associated with the frontal cortex, but other brain areas as well
- Rich, dep interconnections with other brain regions, which integrates, controls, and supervises brain functions
- Experts disagree on a unifying definition, but most agree it is related to self-control, which impacts social competency, academic success, and related to other disorders
- The core of EF is regulation as reported by most current mainstream research definitions
- Major EF Traits
    - Attention
    - Flexibility
    - Behavior control
    - Emotional control
    - Initiation
    - Planning
    - Organization
    - Working memory
    - Self-monitoring

Expert Guidance

- Assessing EF can be extensive, but necessary to target interventions
- Consult with social worker, counselor, psychologist
- EF supports lend themselves to effective behaviorally based interventions
- Set up students for success- environmental considerations
- Substantial overlap with ADHD traits
- Critical to get staff on board
- Be critical of interventions that promise substantial gains
- No quick fixes

Intervention: What Works and Doesn't' Work

- Computerized working memory training: Research support is very limited, but some promise in specific domains such as classroom
- Computer flexibility training: Research support is limited and may not generalize
- Aerobic Exercise
- Martial Arts with Mindfulness

Interventions: General Considerations

- Be mindful of self-esteem issues tied to EF deficits, keep it positive and get buy-in from both student and staff. Focus on developing a student's positive self-talk
- Increase self-awareness in students, but with compassion and use humor. Use real-life and personal examples
- Set expectations that EF deficits can be improved with effort and that brain structures mature

Interventions: Active/Consistent Support

- Daily check-ins
- Provide real feedback with qualitative information with real statistics
- Routines are critical and effective
- Monitor sleep and nutrition
- Real exercise and team sports involvement if possible

Interventions: Direct Instruction

- Explicit and direct training: "Simply showing a student how to do something is insufficient. Research shows that interventions that are embedded into a school day, and regularly practiced over extended periods of time are most effective and have longer lasting results."- Stephen Guy

Goal-Plan-Do-Review

- Goal: Explicitly teach the cycle
- Plan: Materials and steps
- Do: Discuss problems and solutions, then engage with role play
- Review: What worked, didn't work, what to try next time?

Accommodations

- Set up for success
- Check-ins before class
- Provide positive comments/expectations beforehand

- Educate the student on the type of environment that will trigger EF deficits to manifest- teach to live within the environment and raise awareness
- Provide immediate feedback, positive and negative, about the student's EF performance
- EF deficits are weaknesses in sustained attention and sustained energy. Abbreviate long tasks if possible. Reward for completed work, minimize punishments
- Supporting organization: Daily monitoring and teaching organization of materials. Use visual planets and colored folders. Teach sequencing and categorization
- Support active self-advocacy related to EF issues. Allow access to additional support staff
- Attention: shorten assignments, nonverbal cues to sustain focus, raise awareness, timers
- Emotional/Behavioral Control: Frequent breaks, especially to check in with support staff. Provide immediate positive feedback. Adjust environmental factors
- Flexibility: Prep for transitions, provide routines