Assessing Executive Function Skills in Children

Lesley Raisor-Becker, Ph.D. CCC-SLP
raisorlj@ucmail.uc.edu
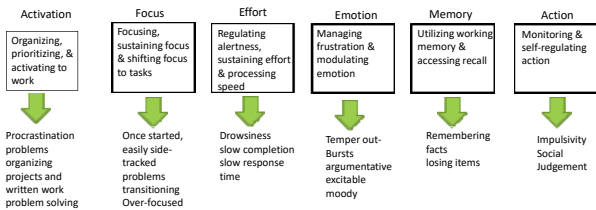
Executive Function Skills

SKILL	REAL LIFE EXAMPLE
Task Initiation	Independently starting homework after school
Time Management	Reflecting on realistic time needed for a task
Organization Planner	Prioritizing all assignments in a students planner
Emotional Control	Using self-discipline to make a good choice
Sustained Attention	Attending to task to its competition
Working Memory	Holding information in mind for completion of a test
Self-regulation	Using self-talk or self-soothing instead of impulsivity and self-destructive behavior
Self-efficacy	A person's belief in his or her own abilities

Academic Problems linked to executive functions

Activation	Focus	Effort	Emotion	Memory	Action
Organizing, prioritizing, & activating to work	Focusing, sustaining focus & shifting focus to tasks	Regulating alertness, sustaining effort & processing speed	Managing frustration & modulating emotion	Utilizing working memory & accessing recall	Monitoring & self-regulating action
Procrastination problems organizing projects and written work problem solving	Once started, easily side-tracked problems transitioning Over-focused	Drowsiness slow completion slow response time	Temper out-Bursts argumentative excitable moody	Remembering facts losing items	Impulsivity Social Judgement

SORRY

COUCH IS FULL

Lawiz.org - Create..Share..Amuse

"Unlike other academic and cognitive difficulties, executive skills weaknesses are often not effectively identified by a one-to-one testing process."

Kaufman, 2010

Formal Tests of Executive Function (EF)

• Administered by appropriately trained psychologists
• Designed to assess one or only a narrow band of related Efs
• Often can not be counted on to validly assess children's metacognitive and self-regulatory skills

---

Limitations of Neuropsychological Tests of EF

• In summary…..The most significant limitation of virtually ALL formal test of EF is their **undetermined ecological validity** (Sborbone & Long, 1996)

   • Ecological Validity—extent to which a test's findings can be considered to have bearings on real-world settings.l
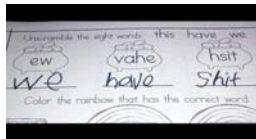
Limitations of formal EF tests

- Executive skill weaknesses are less apt to be shown in one-to-one testing contexts
  - The individualized and supportive nature of testing sessions essentially manages the attention, task initiation, and self-monitoring problems children exhibit in the classroom
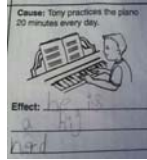
Limitations of formal EF tests

- Most formal tests of EF are highly structured, predictable, and directed by the examiner.
  - The need for planning and organization on the part of the student is reduced (and sometimes eliminated)
 - The brevity of the tests make them poorly aligned to classroom tasks

Limitations of formal EF tests

- The demands of tests of EF tend to link poorly to classroom learning and performance
  - Many classroom assignments are structured around somewhat ambiguous response formats that require students to make decisions, establish plans, organize materials, and generally direct their own performance over lengthy periods of time.
  - In contrast, formal EF tests require a rather narrowly defined response type that is limited to the pressing of a button, crossing out of a figure, or connecting dots.

Rey–Osterrieth complex figure
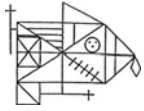
- examinees are asked to reproduce a complicated line drawing, first by copying it freehand (recognition), and then drawing from memory (recall).

Limitations of formal EF tests

- Teal-life learning and social contexts rarely (if ever) require children to use only one or two executive functions, but instead demand the fluid synchrony of a range of EF.
- Actual school settings also elicit a variety of motivational and emotional responses that can substantially affect a student's ability to self-direct cognition and behavior.

So….what else should we do?

- Because neuropsychological tests can't be consistently relied upon to reveal the scope and severity of a student's EF difficulties, we should consider obtaining data from a variety of sources (including the classroom) in a systematic way.

3/5/2018

What to do…

- Semi-Structured Interviews and Case Reviews
  - Parent
  - Teacher
  - Child/Student
- Rating Scales
- Classroom Observations
- Work Sample and Performance Reviews

Semi-Structured Interview

Of all the data available about students EF….

- The MOST HELPFUL data generated is from questions about students' past and present functioning
  - Helps us identify the scope/severity of the executive function struggles and design the most effective interventions
  - Systematic interviews are a great way to study the goodness of fit between a child's executive skill set and the classroom and the social environment in which they must operate.

Kaufman, C. (2010). Executive function in the classroom: Practical strategies for improving performance and enhancing skills for all students

---

Executive Functioning
Parent Semi-Structured Interview

- For each item, the parent should respond with the extent to which the child exhibits the behavior by using the following response choices:
- 0- Not a problem at all (the child rarely shows this behavior or does so at levels that seem typical for his or her age
- 1- Mild problem (the child show the behavior more than most children his or her age seem to, but not to such a degree that it has been an obvious problem)
- 2- Moderate problem (the child clearly shows the behavior, but with parent and/or teacher support the behavior/issue has been generally manageable)
- 3- Definite problem (the child clearly shows the behavior and it remains a serious problem even with parent and/or teach support)
- U-unsure or don't know

Goal Setting, Decision Making, and Planning

- Avoids or has difficulty setting personal goals regarding school achievement and/or other important activities (i.e., improvement of athletic or artistic skills)
- Seems to live from "moment to moment," without setting goals or making plans
- Avoids or has difficulty developing clear goals/plans for writing assignments, or fails to follow these plans when writing (tends to just "wing it" and hopes things will turn out okay)
- Avoids or has difficulty developing clear plans for longer-term projects
- Avoids or has difficulty developing plans to manage other fairly complex tasks (e.g., if asked to clean out garage or basement, will just start anywhere and continue to work in a random manner)

Attention, Task Initiation, Self-Monitoring

- Is easily distracted in non-preferred tasks situations (e.g. homework and chores)
- Needs numerous prompts/cues from adults to remain focused ("on task") in non-preferred tasks
- Struggles with sustaining attention while reading (finds most reading tasks "boring")
- Requires numerous prompts from parent in order to start homework and other non-preferred projects
- Requires numerous prompts/cues from parent in order to complete homework
- Works in a rushed seemingly careless manner on homework assignments and chores
- Becomes bogged down during homework and chores by seemingly minor difficulties (just can't seem to solve problems on his or her own)
- Appears to pay little attention to the quality/accuracy of work and is often unaware of errors
- Requires frequent prompts and reminders from parent in order to complete chores

Materials Organization

- School backpack and notebooks/binders are poorly organized and generally messy
- Struggles with keeping track of materials needed for school/homework each day
- Desk and/or other homework areas are poorly organized and generally messy
- Bedroom and personal possessions in a state of disarray

Time Management

- Does not set aside sufficient time to complete daily home-work assignments

- Does not set aside sufficient time to complete longer-term projects

- Rarely completes daily home-work and longer-term projects in a timely manner

- Rarely arrives on-time for school and other important activities

Working Memory

- Frequently unable to follow multiple-step directions (e.g. "go upstairs, put your dirty clothes in the hamper, take a shower, and then call me when you're done")

- Forgets to do things such as turning off lights after leaving room, closing doors that should be closed, wiping feet when coming inside, and so forth.

- Forgets various details of non-preferred tasks (e.e., if cleaning bedroom, forgets to put away all the things he was told to put away)

- Forgets the directions for daily homework assignments (or needs frequent reminders of directions)
- Struggles with recalling what he is trying to say while talking
- Struggles with recalling/keeping track of intended ideas for writing assignments while writing
- Struggles with recalling the content of what he or she reads during and after reading

Impulse and Emotional Control

- Does things impulsively (without stopping and thinking) that he or she quickly comes to regret
- Struggles with waiting turn in conversations and often interrupts others' conversations
- Struggles with waiting turn in games
- Says things impulsively that embarrass or upset others
- Rushes into and through homework assignments and projects without giving adequate consideration to the instructions
- Tends to injure self or others because of impulsive action (failure to think adequately about a situation before acting)
- Becomes very frustrated by events/situations that would not likely frustrate others to the same degree (has a low frustration tolerance)
- Overreacts when frustrated, saying or doing things that result in significant difficulty for self or others
- Becomes easily and significantly angered by the behavior of others
- Lashes out verbally or physically at others when angered

Set Shifting/Adaptability

- Insists on things being "perfect" or a certain way, and will resist prompts to move on
- Gets "stuck" on certain parts of tasks and resists moving on
- Reacts with significant frustration to changes in routine and unplanned events
- Reacts with significant frustration, sadness, or anger to disappointments
- Requires lots of support and cueing to get ready for school in the morning and bed at night
- Requires significant support and cueing to transition from preferred activities (e.g., playing or TV) to required activities (e.g. mealtimes and homework)

- With what tasks/types of assignments is your child more likely to succeed? Why?
- With what tasks/types of assignments is your child more likely to experience difficulty? Why?
- What strategies/interventions have helped your child? How much?

Rating Scales

Standardized behavior rating scales

- Strengths:
  - Ease of use and ability to quantify the scope and severity of a student's executive skill weaknesses relative to what is considered typical for large groups of peers from around the country.
- Weaknesses:
  - Vulnerability to subjective bias

_____

_____

_____

_____

_____

_____

_____

Behavior Rating Inventory of Executive Function (BRIEF: Gioia et al., 2000)

- Student, Parent, and Teacher Forms
- Standardized on samples of children age 5-16 (there is also a preschool version)
- Parent and teacher forms ask respondents to rate, on a 3-point scale, how often a child performs each of 86 items associated with a range of metacognitive and self-regulatory executive functions. The student form of the BRIEF is similar and asks older children and adolescents (age 11-18) to rate on the same 3-point scale how often they perform 80 behaviors related to the core executive skills.

_____

_____

_____

_____

_____

_____

_____

Behavior Assessment System for Children (2nd Edition) (BASC-2; Reynold & Kamphaus, 2004)

- Broadband rating scale system that also includes parent, teacher, and student self-report versions. Unlike the BRIEF, which focuses exclusively on EF, the BASC-2, asks about student's abilities across domains of behavior, emotion, and adaptive behavior functioning.
- Looks at ADHD symptoms, adaptability, anger/emotional control, and social skills.

_____

_____

_____

_____

_____

_____

_____

_____

Classroom Observations

Classroom Observing

- Natural Habitat is the best place to see a child's executive function in action
- Classroom observations are most effective when the observer keeps the following questions in mind:
  - What does the observed behavior imply about the target child's areas of comparative strength and weakness?
  - How good is the fit between the child's profile of comparative strengths and weaknesses and setting in which the observation occurs?
  - What does a child's behavior in a particular setting reflect about what he or she needs to learn in order to more functional in the setting?
  - How might the setting be changed (via accommodations and modifications) to be better linked to the child's profile?

By focusing on those questions….

- You can move beyond the fairly simple question of what a child is doing (or not doing in many cases) in a given school context to the range of strategies that might address the difficulties he/she exhibits.
  - Move past gathering data and move to problem solving

Work Sample and Performance Reviews

Work in the Classroom

- Oral reading (Miscue analysis)
- Reading comprehension
- Spelling
- Written language samples

Co-occurring

- Language disorders/ADHD

Case Example

Parent Interview/Case History Data

Teacher Interview Data

Student Interview Data

Classroom Observation Summary

Rating Scale Data

Summary of Neuropsychological Tests

Conclusions

Recommendations

Recommendation

Recommendation

Recommendation

Recommendation

Recommendation

Recommendation

Recommendation

Lesley Raisor-Becker
Raisorlj@ucmail.uc.edu