

Supplemental EF Slides and Abbreviated Information: Assessment Options and Sample Goals for EF Skills*

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**Intended for use in conjunction with an entire course in EF/language assessment and treatment, and/or in conjunction with a comprehensive lecture on the subject matter.*

Types of EF Assessment

Adapted from McCloskey, 2009

Informal INDIRECT

Interview w/others
Review of records, chart
Interpretation of ratings from others

Formal INDIRECT

Standardized rating scales:
Teacher
Parent
Self
Significant Other

Informal DIRECT

Interview
Observation
Interpretation of standardized test
performance
Work samples
Novel task completion

Formal DIRECT

Standardized tests
Specific to EF skills
e.g. Attention test
Inhibition test
Fluency test
Planning test

Indirect Assessment of EF

- Given daily failures and repeated observations that “something is wrong”
 - Observe EF behaviors as they occur in the natural environment (with distraction, without support, etc.)
 - With the intent to observe all EF components, used simultaneously,
 - As they are/are not integrated with and/or dependent upon social cues, language skills, etc.
- Capture your observations of EFs as they are integrated and used in the real world
 - What falls apart? What EF skills are on-board? What EF skills are available? What EF skills are used reliably?
 - Is there a profile?

Indirect EF Assessment Options

- Semi-Structured Interviews & Informal Questionnaires
 - ***Executive Skills Questionnaire***
 - Dawson & Guare, 2009; 2010
 - Parent & Student Forms; Rate 1-5 for degree of problem
 - ***Sample Interviews for Executive Functioning***
 - Richard & Fahy, 2005
 - For parent, teacher, student
 - Organized by EF behaviors observed in home, school
 - ***Executive Functioning Semistructured Interview***
 - Kaufman, 2010
 - Parent, teacher, student
 - Organized by EF area

Indirect EF Assessment Options, cont'd

- Standardized EF Questionnaires
 - ***Behavioral Rating Inventory of Executive Functions (BRIEF)***
 - Ages 5-18; Self report, ages 11-18; Parent & Teacher reports
 - T-scores >65 = impairment
 - ~8 EF scales and 2 EF indices, + 1 global index
 - Rate degree of problems noted in use of EF skills in home, school, work environments; excellent validity
 - ***BRIEF-P***
 - Ages 2-5
 - Parent & Teacher reports
 - ***BRIEF-A***
 - Ages 18+
 - Self, Informant reports

Direct EF Assessment Options

- **Standardized EF tests**
 - Designed to evaluate individual components of EFs
 - Therefore you must know what the test IS/IS NOT designed to test
 - You must pay attention to test design, test purpose, and validity
 - You must know what the test does, or does NOT evaluate
 - If it's a language test—it's a language test (not an EF test), and so forth
 - Subtests typically require the use of EF skills out of context
 - Rather than an ecologically-valid environmental application of the EF skills
 - Subtests may also require the use of additional cognitive or metacognitive processes
 - That is, sometimes you cannot carve out, for example, shifting from inhibition
 - May also require elements of verbal/language, or visuo-spatial processing, etc.

Direct EF Assessment Options, cont'd

- **Standardized EF tests, cont'd**
 - Scores and profiles
 - Pay attention to standardization population, norms, etc.
 - Have to know how to interpret isolated performance in context of whole child, overall picture, other performance/test scores, language, social, etc.
 - There is a LOT here to interpret, and extrapolate, to the overall EF picture
 - Who administers testing?
 - Depends on your organization, your credentials, training
 - Some tests require specialized neuropsych training
 - Others require training in 'standardized testing'
 - Know what you do—and do not—know
 - Time and Money
 - Enough said

Delis-Kaplan Executive Function System (D-KEFS)

- Ages 8-89; n=1700
 - ID subtle deficits
 - Verbal & nonverbal EF usage
 - Abstract/creative thinking
 - Standard scores +
 - Process analysis
 - 9 subtests (stand-alone)
- Trail Making Test
 - Visual scanning, sequencing,
 - Motor speed, flexibility
- Verbal Fluency Test
 - Fluent retrieval in-class
 - Fluent retrieval—shift categories
- Design Fluency Test
 - Design fluency; inhibition
 - Cognitive flexibility
- Color-Word Interference Test
 - Inhibit automatic response
 - Shift to conflicting response
- Sorting Test
 - Verbal & nonverbal concept-formation
 - Abstract thinking; flexibility
- Twenty Questions Test
- Word Context Test
- Tower Test
 - Spatial planning; inhibition
 - Rule learning; monitoring
- Proverb Test
 - Verbal abstraction

Nepsy-II

- Ages 3-16
 - 32 subtests, 6 domains
- Non-EF subtests/domains:
 - Language
 - Social perception
 - Memory/learning
 - Sensori-motor
 - Visuospatial processing
- EF subtests evaluate:
 - Sustained & selective attention
 - Verbal & nonverbal inhibition
 - Working memory
 - Verbal & design fluency
 - Strategic planning, organization,
 - Shifting

Behavioral Assessment of Dysexecutive Syndrome—Children (BADSC)

- Ages 8-16
 - 6 subtests evaluate various EF skills
 - Hands-on, manipulable tasks
 - Heavy demands on language
 - Standard scores within IQ bands
- Subtests & EFs evaluated:
 - Inhibition
 - Flexibility/shifting
 - Planning/sequencing
 - Monitoring/use of feedback
- *Dysexecutive Questionnaire*
 - Initiation; emotional regulation; behavioral regulation

Behavioral Assessment of Dysexecutive Syndrome (BADS)

- For populations w/TBI, dementia, stroke, etc.
- Ages 18+
 - 6 subtests evaluate various EF skills
 - Hands-on, manipulable tasks
 - Overall Total Score/Age Standard Score
- Subtests & EFs evaluated:
 - Inhibition
 - Flexibility/shifting
 - Planning/sequencing
 - **Temporal judgment**
 - Monitoring/use of feedback
- *2 Dysexecutive Questionnaires*
 - Self report; caregiver/informant report
 - Emotional regulation; behavioral regulation; cognition

Functional Assessment of Verbal Reasoning & Executive Strategies (FAVRES)

- 18+, ABI
- 4 complex, challenging tasks
- SS available for multiple areas of verbal reasoning
 - Extracting relevant info
 - Deducing most important info
 - Generating relevant options
 - Excluding irrelevant info
 - Defending with sufficient rationale
- But must indirectly observe and analyze complex language and use of multiple EF skills
 - Must read, write, rationalize
 - Must organize, strategize, plan, monitor, & hold in WM
 - SS for accuracy, time, rationale

FAVRES: Task & Total Scores

Tasks	Task 1 Planning an Event			Task 2 Scheduling			Task 3 Making a Decision			Task 4 Building A Case		
	Raw Score	SS	%tile Rank	Raw Score	SS	%tile Rank	Raw Score	SS	%tile Rank	Raw Score	SS	%tile Rank
Accuracy	5	108	100	5	106	100	5	104	100	2	9**	<1
Rationale	5	106	100	3	109	100	4	77*	5	0	16**	N/A
Time	3	120	100	13	111	77	7	104	64	7	113	88

*Mean=100, SD-15, *Greater than 1 SD below mean, **Greater than 4 SD below mean*

FAVRES TOTAL Test	Raw Score	Standard Score	Percentile Rank
Accuracy	17	81*	15
Rationale	12	53**	1
Time	30	115	87

*Mean=100, SD-15, *Greater than 1 SD below mean, **Greater than 3 SD below mean*

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FAVRES: Reasoning Subskill Scores

	Task 1 (Event)	Task 2 Scheduling	Task 3 (Decide)	Task 4 (Case)	Total	Means & SDs for Types of Reasoning	Performance Level for Types of Reasoning
Getting the facts	4/5	4/5	5/5	4/5	17	M 18.96; SD 1.23	>1SD below mean
Eliminating irrelevant facts	1/1	1/1	0/1	1/1	3	M 3.76; SD .55	>1SD below mean
Weighing the Facts	0/1	0/1	1/1	0/2	1	M 3.86; SD .55	<1SD below mean
Flexibility	1/1	1/1	0/1	1/1	3	M 3.72; SD .45	<1SD below mean
Generating Alternatives	1	7	6	9	23	M 41.12; SD 9.17	<1SD below mean
Predicting consequences	3/4	3/4	4/4	0/2	10	M 14; SD 0	<1SD below mean
Total reasoning subscales	10	16	16	15	57	Total SS <76 (M=100; SD=15)	Total %ile <3

Test of General Reasoning Ability

- Ages 10-75
- Brief assessment of general reasoning & problem solving
- Good validity & design
- 60 questions, 16 minutes
- Combined types of questions include:
 - Fluid & crystallized intelligence
 - Inductive & deductive reasoning
 - Nonverbal reasoning
 - Verbal reasoning
 - Quantitative problem solving
- Summed to produce **General Reasoning Index**
 - M=100, SD=15

EF tests for Attention, Inhibition, Shifting

- ***Test of Everyday Attention (TEA)***
 - Ages 18-80; 8 subtests; takes long time to give, but good attention info
 - Auditory + visual attention; sustained, selective, alternating, divided, and inhibited attention
 - EF skills—inhibition, switching, planning
- ***Test of Everyday Attention-Children (TEA-CH)***
 - 6-16; 9 subtests
- ***Children's Color Trails Test 1 & 2***
 - 8-16; lots of interpretation for clinical populations
 - Subtle alternating/sustained attention
 - Shifting/perseveration
 - Error-awareness & error-correction (monitoring/regulation)
- ***Stroop Color & Word Test-Children***
 - 5-14; lots of interpretation for clinical populations
 - Inhibition, shifting/perseveration, sustained attention
 - Interference scores indicate degree of inhibitory control

Clinical/Informal Observations *(non-standardized measures)*

Pros:

Insight & ratings & descriptions from those who see the child in his/her daily environment

Provides your assessment with numerous examples of the nature of the problem

Cons:

Requires that you structure your observation

Requires that you know how to tie problems with an underlying EF component

Requires that you can defend your conclusions without standardized scores

RULES for Clinical/Informal EF Assessment—Fahy

**If you're going to observe EF usage, then you
need a TASK & you need some RULES**

RULES:

No help

No guidelines

No instructions

TASKS:

Novel, yet within ZPD

Related to life's experiences

Of interest to the child

Informal EF Assessment Clinical Observation Rubrics/Forms

- ***Executive Skills Rubric***

- Dawson & Guare, 2010; adapted from Cape Elizabeth HS, Cape Eliz, Maine
- Parent & student forms; 33 questions & 11 EF skills
- Rating from 1-5, depending upon degree of problem

- ***Executive Function Observational Worksheet***

- Richard & Fahy, 2005
- 8 EF skills areas to observe during functional task completion
- Consistency & independence of EF skill use

- ***Executive Function Student Observation Form***

- McCloskey, 2007
- 23 EF areas to observe in classroom via self-regulation
- Observe the degree to which teacher fosters or externally guides EF skills

Clinical/Informal EF Assessment TASK

EXAMPLE: *Trail Mix Task, Fahy, 2009*

- Behind the scenes:
 - Devise novel task (see task rules)
 - Gather materials (some relevant, some not; intentionally omit some—manipulate difficulty)
- Select an observation tool to support your clinical assessment opportunity
 - See previous slide
- Provide task:
 - RULE #1: Provide outcome requirements ONLY.
 - RULE #2: Provide NO PLANS or HINTS or HELP.
 - RULE #3: Provide assorted materials (relevant/irrelevant, necessary/not, available/unavailable)

Clinical/Informal EF Assessment TASK

EXAMPLE: *Trail Mix Task, Fahy, 2009, cont'd*

- Tell the individual that “he/she is in charge”
 - Offer no help (until/unless you have observed sufficient failure for a given EF)
 - Correct no problems (until/unless you have observed sufficient failure; or student cannot tolerate more failure)
 - Initiate no efforts (until/unless you observe whether or not student will do so; or student cannot tolerate more failure)
- Observe and capture performance on each EF skill
- Establish profile of independent EF performance
- Incorporate findings with:
 - Other standardized EF tests
 - EF questionnaires, interviews, classroom observation findings
 - Language profile
 - Social-cognitive profile

Planning GOALS

- Generate plans sufficient to result in accurate completion of task.
 - This is an overall, broad approach.
 - Yes/No—does this approach have the potential to achieve the task-requirements?
- Generate plan-steps sufficient to support task execution w/X% accy.
 - This is a verbal fluency-type task.
 - Clients who cannot generate any, or very few, potential ideas
 - Clients who may even be able to determine a broad approach (do my homework today), but have no specific plan-steps.
- Verbalize specific plan-steps w/X% accy.
 - Craft plans into concise verb-statements
 - Require oral or written expression of concise verb-statements
- Sequence specific plan-steps in logical, defensible order w/X% accy.
 - How did you decide to do these first?
 - How do you know those must be done first?
- Explain outcomes of potential plans w/X% accy.
 - What would happen if? How do you know that?

Self-talk & Verbal Reasoning GOALS

- Will use self-directed speech to maintain attention to task
- Will use self-directed speech to support on-task behaviors
- Will use self-direct speech to shift efforts or plans
- Will use IF—THEN statements to determine cause & effect outcomes, during plan-evaluation efforts
- Will use IF—THEN statements to support selection of ‘best’ plans for functional problem solving tasks
- Will use feature-analysis to support verbal comparison & sorting of materials-needed for task-initiation
- Will use feature-analysis to generate responses to What-Will-Happen-IF questions
- Will predict outcomes

Monitoring & Regulation GOALS

- Will display sufficient attention & general awareness to self-identify X% of all unintentional/oversight errors
 - Paper/pencil tasks?
 - During functional problem-solving tasks?
 - After task-completion?
 - During task-completion?
- Will self-correct X% of all unintentional/oversight errors
 - Paper/pencil tasks?
 - Functional problem-solving tasks?
 - After task-completion?
 - During task completion?
 - Given alternate plan-generation?
 - Given inhibition of failed efforts?
 - Given initiation of new strategies?

Self-Monitoring & Awareness GOALS

- Will identify X% of errors after task completion
- Will identify X% of errors during task completion
- Will identify X% of attentional/impulsive errors during task completion, given max cues
- Will identify X% of attentional/impulsive errors in paper-pencil tasks, given general reminders
- Will explain own EF goals
- Will explain reasons for working on 'error-catching',
- Will explain 2 specific compensatory strategies
- Will identify situations in which to use compensatory strategies

Self-Regulation GOALS

- Will self-correct errors in paper-pencil tasks with X% accy, given max prompts for development of alternative strategies
- Will self-correct errors w/X% accy, given min prompts to use plan-generation strategy
- Will independently self-correct errors made during paper-pencil functional tasks w/X% accy
- Will independently use double-checking and self-talk strategies to support accurate task-completion
- Will independently use Stop-Think-Plan-Do strategy to support use of socially expected behaviors in small group interactions.
- Will request assistance and/or repetition of instructions in X% of classroom situations, given use of visual reminders.