

Evaluation of Executive Functioning using a Four-dimensional Model: From Assessment to Intervention

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EF Comprehensive Executive Function Inventory

CAS2 Cognitive Assessment System

DESSA DEVEREUX STUDENT STRENGTHS ASSESSMENT 4-5th GRADE

DESSA-MINI DEVEREUX STUDENT STRENGTHS ASSESSMENT K-3rd GRADE

ARS AUTISM RATING SCALES (ARS)

Crama

Manual

NAT-2 Manual

Devereux Early Childhood Assessment for Preschoolers

Devereux Scales of Mental Disorders

ABOUT
Jack A. Naglieri, Ph.D., is Research Professor at the Curry School of Education at the University of Virginia. Senior Research Scientist at the Devereux Center for Resilient Children and Emeritus Professor of Psychology at George Mason University.
[Read More](#)

PUBLICATIONS
The author of more than 300 publications, his recent efforts include cognitive assessment, cognitive interventions, SLD determination and measurement of psychopathology and resilience.
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TESTS
A comprehensive list of Jack A. Naglieri's tests such as the Naglieri Nonverbal (NNAT) and the Comprehensive Executive Function Inventory (CEFI).
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My Background

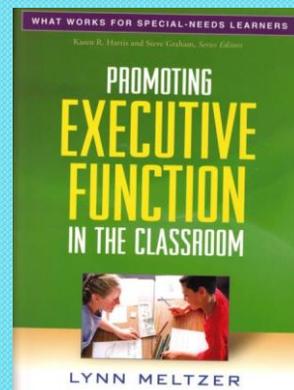
- Interest in intelligence and instruction
- Experiences at UGA
- Test development
- Need for science to support practice
- Psychometrics
- My personal perspective on being a researcher and test developer
- Evidence based interpretation
- My experience being tested...

conclusion

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Meltzer (2010)

- ‘Classroom instruction generally focuses on content (or the *what to know*), rather than on the *how to do or learn...*and does not address metacognitive strategies that teach students to think about *how* they think and learn’.



conclusion

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Why this Workshop on EF?

- Executive Function (EF) is the most important ability we have, because it provides us **a way to decide how to do what we choose to do to achieve a goal**
- The best news is that EF **can be taught**
- Instruction that improves EF will affect children's ability to learn, their behavior, and their social skills.
- Improving EF will change a student's life

conclusion

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Presentation Outline

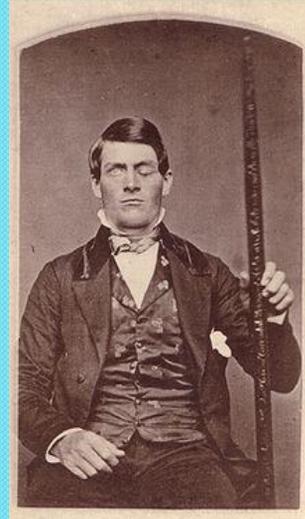
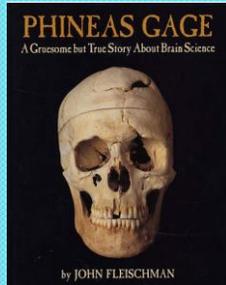
-  Comprehensive Model of EF
 - Historical Perspective
 - Definitions of Executive Function
- EF - Behavior
- EF - Ability (an intelligence)
- EF - Social Emotional Skills
- EF - Academic performance
- Research about EF as ability, behavior, and SE
- **Think Smart!** -- EF Skills in the Classroom
 - More lesson plans for improving components of EF
- Conclusions

conclusion

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The Curious Story of Phineas Gage

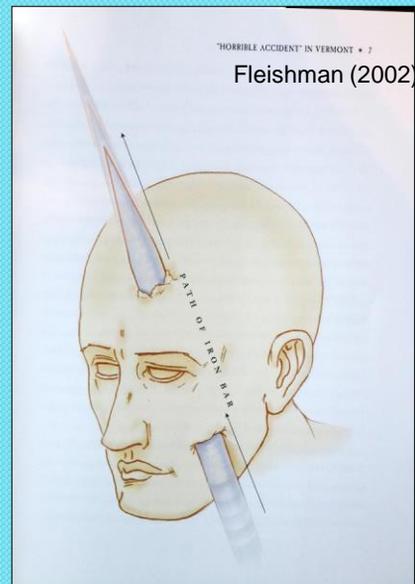
John Fleischman's "Phineas Gage: A Gruesome but True Story About Brain Science" about September 13, 1848 & 26 year old Phineas Gage



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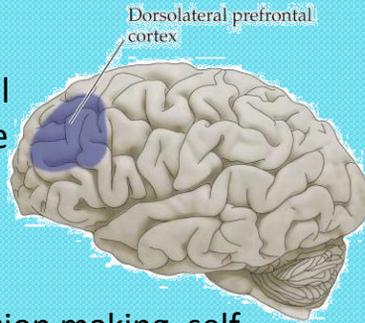
Fleishman (2002, p 70)

- From Damasio (1994) article in *Science*
- The rod passed through the left frontal lobe, between the two hemispheres, then to left hemisphere
- The damage was to the front of the frontal cortex more than the back, and the underside more than the top



More Specifically

- The dorsolateral prefrontal cortex is involved with the ability to plan, shift set, organize remember and solve novel problems.
- That is: planning and decision making, self monitoring, self correction, especially when responses are not well-rehearsed or contain novel sequences of actions.



conclusion

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Before . . . & . . . After

- **Before** the accident 'he possessed a well-balanced mind, was seen as a shrewd, smart business man, very energetic and persistent in executing all his plans of operation' (p 59)
- **After** the accident his ability to direct others was gone, he had considerable trouble making decisions
- Impairment in
 - (1) intellect,
 - (2) behavior,
 - (3) Social/emotional
 - (4) work

conclusion

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Frontal Lobes and Executive Function(s)

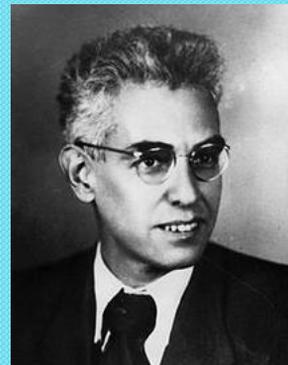
What do we mean by the term Executive Function(s)?

conclusion

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Executive Function (s)

- In 1966 Luria first wrote and defined the concept of Executive Function (EF)
- He credited Bianchi (1895) and Bekhterev (1905) with the initial definition of the process

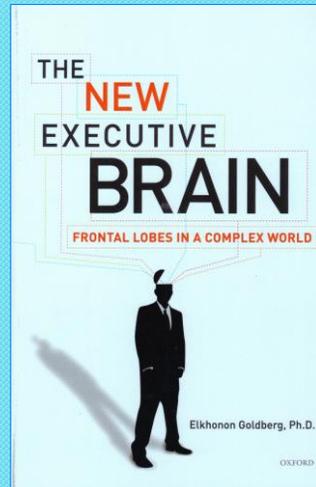


1902 - 1977

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Executive Functions

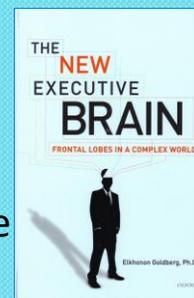
- Elkhonon Goldberg provides a valuable review of what the frontal lobes do
- Describes EF as the orchestra leader



conclusion 13

Goldberg (2009, p. 4)

- “The frontal lobes ... make us human, and as Luria stated, are they are the organ of civilization”
- Frontal lobes are about ...”leadership, motivation, drive, vision, self-awareness, and awareness of others, success, creativity, sex differences, social maturity, cognitive development and learning...”
- They make each one of us unique



conclusion 14

What is Executive Function(s)

There is no formal excepted definition of EF

- We typically find a vague general statement of EF (e.g., goal-directed action, cognitive control, top-down inhibition, effortful processing, etc.).
- Or a listing of the constructs such as
 - Inhibition,
 - Working Memory,
 - Planning,
 - Problem-Solving,
 - Goal-Directed Activity,
 - Strategy Development and Execution,
 - Emotional Self-Regulation,
 - And more...but OVERALL...

conclusion

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Executive Function

- EF has is a **unitary** construct (Duncan & Miller, 2002; Duncan & Owen, 2000).
- EF is **unidimensional** in early childhood not adulthood.
- Both views are supported by some research (Miyake et al., 2000) EF is a **unitary construct ... but with partially different components**.

Executive Functions

- EF has **three components**: *inhibitory control, set shifting (flexibility), and working memory* (e.g., Davidson, et al., 2006).
- Executive Functions is a **multidimensional** model (Friedman et al., 2006) with independent **abilities** (Wiebe, Espy, & Charak, 2008).

conclusion

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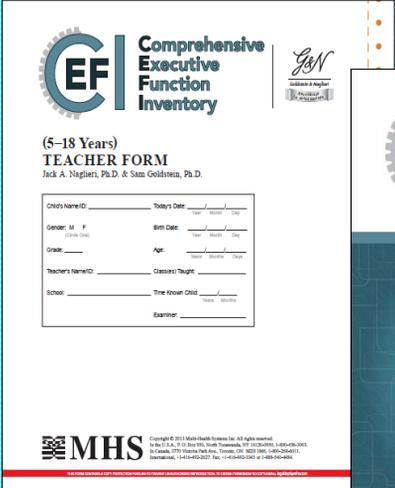
Executive Function(s)

- Given all these definitions of EF(s) we wanted to address the question...
Executive Function*s*... or
Executive Function?
- One way to answer the question is to research the factor structure of EF behaviors
- Factor structure of the Comprehensive Executive Function Inventory (CEFI)

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CEFI (Naglieri & Goldstein, 2012)



CEFI Comprehensive Executive Function Inventory

(5-18 Years)
TEACHER FORM
Jack A. Naglieri, Ph.D. & Sam Goldstein, Ph.D.

Child's Name ID: _____ Today's Date: _____
(Circle one)

Gender: M F Birth Date: _____
(Circle one)

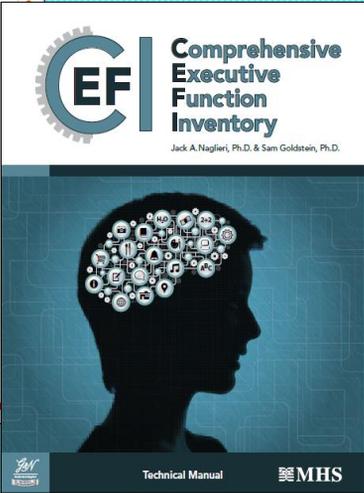
Grade: _____ Age: _____
(Circle one)

Teacher's Name ID: _____ Classroom: _____

School: _____ Time Known Child: _____
(Circle one)

Examiner: _____

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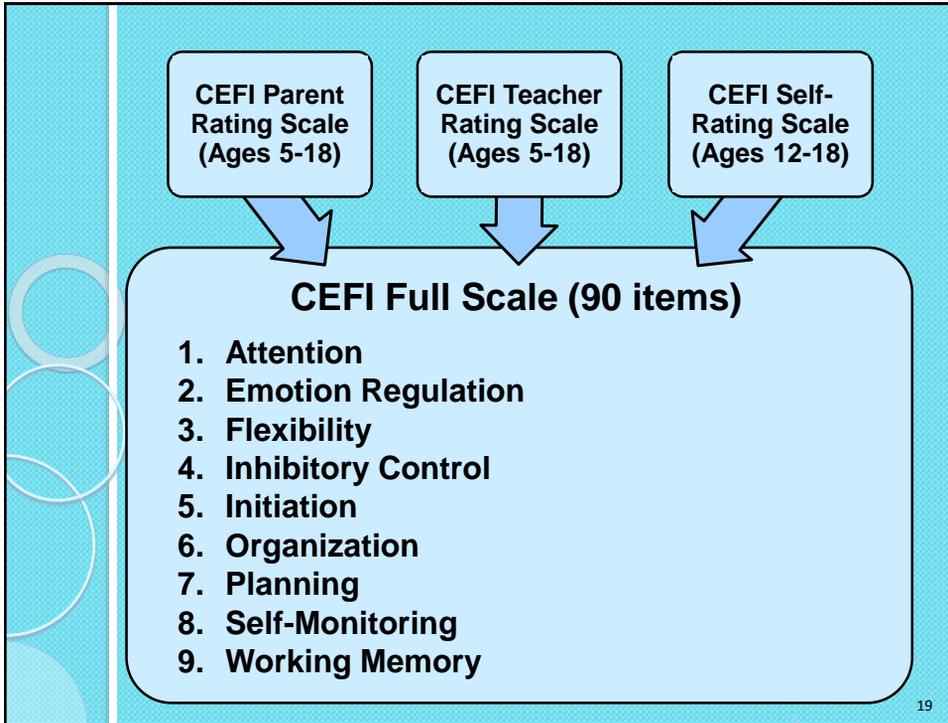
CEFI Comprehensive Executive Function Inventory

Jack A. Naglieri, Ph.D. & Sam Goldstein, Ph.D.

Technical Manual

MHS

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EXPLORATORY FACTOR ANALYSES

- The normative samples for parents, teacher, and self ratings were randomly split into two samples and EFA conducted using
 - the item raw scores
 - nine scales' raw scores
- The sample ...

CEFI Scales

Attention
Emotion Regulation
Flexibility
Inhibitory Control
Initiation
Organization
Planning
Self-Monitoring
Working Memory

conclusion 20

CEFI Standardization Samples

- Sample was stratified by
 - Sex, age, race/ethnicity, parental education level (PEL; for cases rated by parents), geographic region
 - Race/ethnicity of the child (Asian/Pacific Islander, Black/African American/African Canadian, Hispanic, White/Caucasian, Multi-racial by the rater
 - Parent (N=1,400), Teacher (N=1,400) and Self (N=700) ratings were obtained

conclusion

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Item Factor Analyses – Part 1

90 Item factor analysis clearly indicated that one factor was the best solution

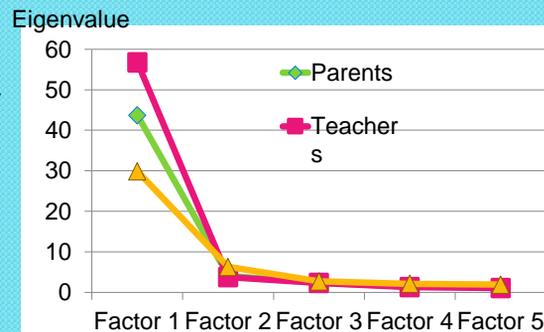


Table 8.2. Eigenvalues from the Inter-Item Correlations

Form	Factor						
	1	2	3	4	5	6	7
Parent	43.7	4.1	2.3	1.5	1.3	1.3	1.0
Teacher	56.8	3.8	2.3	1.3	1.1	1.1	0.8
Self-Report	29.9	6.3	2.7	2.1	1.9	1.8	1.5

Note. Extraction: principal Axis Factoring. Only the first 10 eigenvalues are presented.

conclusion

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Item Factor Analyses – Part 1

EFA for item groups:
Attention, Emotion Regulation, Flexibility, Inhibitory Control, Initiation, Organization, Planning, Self-Monitoring, and Working Memory scales

Eigenvalue

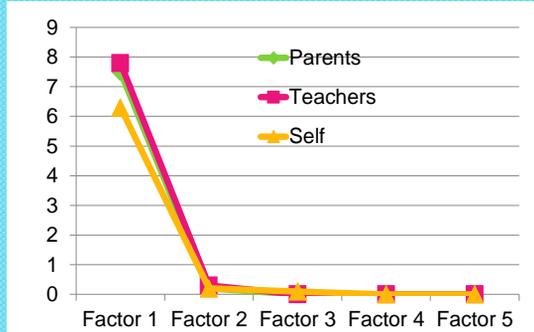


Table 8.4. Eigenvalues of the CEFI Scales Correlations

Form	Factor						
	1	2	3	4	5	6	7
Parent	7.5	0.2	0.0	0.0	0.0	0.0	0.0
Teacher	7.8	0.3	0.0	0.0	0.0	0.0	0.0
Self-Report	6.3	0.2	0.1	0.0	0.0	0.0	-0.1

Note. Extraction method: Png.

Conclusion

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EXPLORATORY FACTOR ANALYSES

Table 8.6. Consistency of Factor Loadings Across Groups

Grouping Factor	CEFI Form	Coefficient of Congruence
Gender	Parent	.999
	Teacher	.999
	Self-Report	.992
Race/Ethnic Group	Parent	.996
	Teacher	.999
	Self-Report	.995
Age	Parent	.999
	Teacher	.999
	Self-Report	.995
Clinical/Educational	Parent	.993
	Teacher	.994
	Self-Report	.976

Nearly identical factor solutions (ALL ONE FACTOR) by Gender, Race/Ethnic, Age and Clinical/typical status

Conclusion

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EXPLORATORY FACTOR ANALYSES

➤ Conclusions

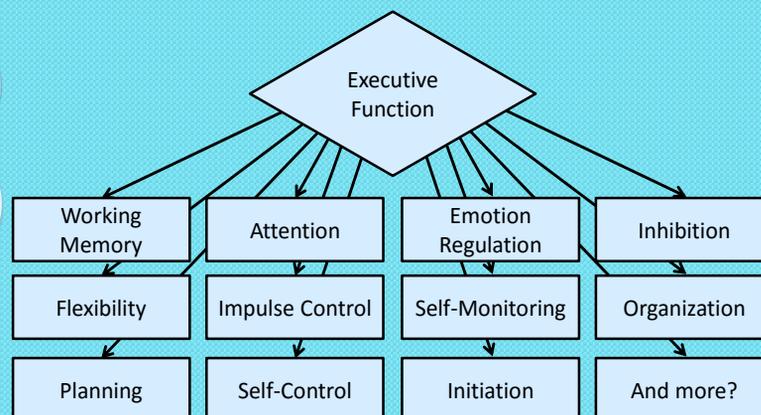
- When using parent (N = 1,400), teacher (N = 1,400), or self-ratings (N = 700) based on behaviors observed and reported for a nationally representative sample (N = 3,500) aged 5 to 18 years Executive Function *not* functions is the best term to use

conclusion

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EF and its components

➤ Abilities, cognitive processes, and behaviors

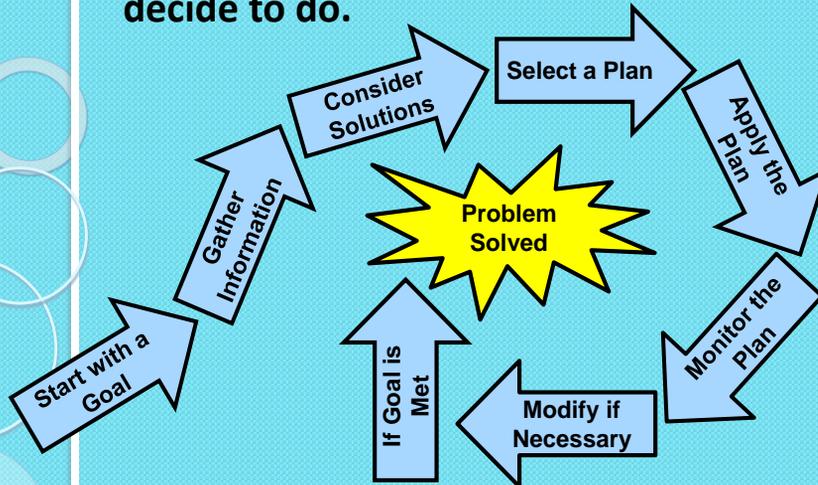


conclusion

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Naglieri & Goldstein, 2012

- Executive Function is: *how you do what you decide to do.*

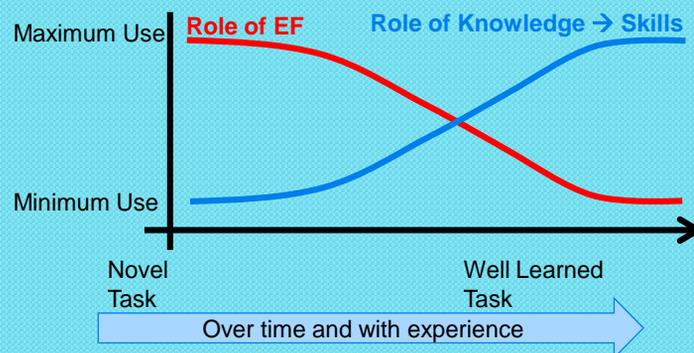


conclusion

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EF's Learning Curves

- Learning depends upon instruction and intelligence (&EF)
- At first, intelligence plays a major role in learning
- When a new task is learned and practiced it becomes a skill and execution requires less intelligence



conclusion

Executive Function Involves

➤ “How you decide *what to do*” demands...

- **Initiation** to achieve a goal, **planning** and **organizing** parts of a task, **attending** to details to notice success of the solution, keeping information in **memory**, having **flexibility** to modify the solution as information from **self-monitoring** is received and demonstrating **emotion regulation** (which also demands **inhibitory control**) to ensure clear thinking so that the task is completed successfully.

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Four Dimensions of EF

- Executive Function is the foundational brain-based ability that is seen in the behavior of students and their skills in SEL and academic/work environments

Behaviors that reflect EF	Social-Emotional Skills that reflect EF	Academic / work Skills that reflect EF
Executive Function (Frontal Lobes)		

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Presentation Outline

- Comprehensive Model of EF
 - Historical Perspective
 - Definitions of Executive Function
 - ➔ EF - Behavior
 - EF - Ability (an intelligence)
 - EF - Social Emotional Skills
 - EF - Academic performance
 - Research about EF as ability, behavior, and SE
 - **Think Smart!** -- EF Skills in the Classroom
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A look at some EF Rating Scales

From Handbook of
Executive Function
(Goldstein & Naglieri, 2014)



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Review of Rating Scales

Assessment of Executive Function Using Rating Scales: Psychometric Considerations 10

Jack A. Naglieri and Sam Goldstein 4

Introduction

In any field of scientific study the information we obtain from research is directly related to the quality of the information we obtain from the tools we use. The better the tool, the more accurate and reliable the information that is obtained. Ultimately, the validity of the tools used in science will be proportionate to the quality of the concepts being evaluated. Ultimately, better tools are more effective for researchers and clinicians. The better the tools used in research and clinical practice, the more valid and reliable the decisions will be, and ultimately the information obtained will be, and ultimately

psychometric issues have for the assessment and the implications for interpretation of results will be emphasized. Special attention will be paid to scale development procedures, particularly methods used to develop derived scores. The second section of this chapter will focus on rating scales used to assess behaviors considered indicative of executive function. The overall aim is to provide an examination of the relevant psychometric issues and the extent to which researchers and clinicians can have confidence in the tools they may use to assess executive function.

Reliability

Conclusion

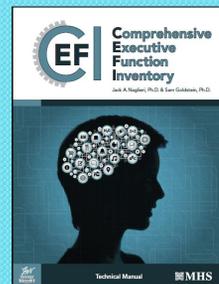
Psychometrics of EF Rating Scales

➤ Five published rating scales were compared



Delis-Rating of Executive Function (D-REF)
 Author(s): Dean C. Delis
 A quick measure of an individual's behaviors related to executive function difficulties

Barkley Deficits in Executive Functioning Scale—Children and Adolescents (BDEFS-CA)
 Russell A. Barkley



Standardization Descriptions

Table 10.3 Number of items, age range, normative sample size, and percentages of normative sample by region, race/ethnicity, and educational level for the BRIEF, BDEFS, D-REF, and CEFI

	BRIEF-Parent	BRIEF-Teacher	BRIEF-Self-report	BDEFS-CA (parent)	D-REF parent	D-REF teacher	D-REF self report	CEFI-Parent	CEFI-Teacher	CEFI-Self report	US Pop %
<i>Scale description</i>											
No. of items	86	86	80	70	36	36	36	100	100	100	
Age range	5-18	5-18	11-18	6-17	5-18	5-18	11-18	5-18	5-18	12-18	
<i>Standardization</i>											
Sample size	1,416	720	1,000	1,922	500	342	220	1,400	1,400	700	
<i>Region</i>											
Northeast	0	0	-	18	16.1	12.2	5.4	16.0	16.2	16.0	17.0
Midwest	0	0	-	28	15.6	19.3	13.9	22.1	22.0	22.0	21.7
South	100	100	-	31	58.6	57.2	77.8	37.9	38.0	38.0	37.2
West	0	0	-	23	9.8	11.3	2.9	24.1	24.0	24.0	24.1
<i>Race/ethnic</i>											
Asian	3.8	6.1	(In other)	-	-	-	-	4.0	3.8	4.0	4.2
Black	11.9	13.5	14.7	7.7	16.5	19.8	5.4	14.0	14.0	14.0	13.9
Hispanic	3.1	4.2	12.5	12.4	19.2	15.8	13.9	22.0	22.0	22.0	21.2
White	80.5	72.1	67.3	73.0	58.0	56.4	77.8	56.0	56.5	56.0	56.5
Other	0.5	0.4	5.5	-	6.2	8.1	2.9	4.0	3.7	4.0	4.2
<i>Parental education level</i>											
<High school	-	-	12.1	4.1	9.2	10.0	7.9	14.1	-	13.9	14.7
High school grad	-	-	33.6	28.1	26.0	28.9	6.6	28.0	-	28.0	28.5
Some college	-	-	12.4	29.8	-	-	-	30.0	-	30.0	28.9
Bachelor's degree	-	-	29.0	27.6	-	-	-	18.0	-	18.1	17.6
Graduate degree	-	-	12.9	15.4	64.9	61.1	65.5	10.1	-	10.0	10.3

Notes: US population percentages based on 2009 Census. Percentages by race/ethnicity for BRIEF-Teacher reported in the manual do not sum to 100%. D-REF values were averaged across age groups

Importance of a National Norm

- What is the problem with scores based on a sample that is not representative of the U.S. populations?
 - You don't know how much the score you get is influenced by demographic variables
 - Let's look at some data ...
- I created norms for groups of children based on parental education levels (PEL) to see just how much influence this variable could have on a standard score (Mean = 100, SD = 15)

Importance of a National Norm

Calibration of Standard Scores (Mn = 100; SD = 15) Across Parental Educational Levels for CEFI Parent Ratings.

Raw Score	Standard Scores				
	<HS	HS Grad	Some Coll	Coll Grad	National
230	96	91	88	85	90
235	97	92	89	87	91
240	98	93	90	88	92
245	99	95	92	89	93
250	100	96	93	90	94
255	101	97	94	92	95
260	102	98	95	93	97
265	103	99	96	94	98
270	104	100	98	95	99
275	105	101	99	96	100
280	106	102	100	98	101
285	107	103	101	99	102
290	108	105	102	100	103
295	109	106	103	101	105
300	110	107	105	103	106
305	111	108	106	104	107
310	112	109	107	105	108
315	113	110	108	106	109

Conclusion

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CEFI and BRIEF

- The CEFI and BRIEF were compared using 320 parent, teacher, and self-ratings
- BRIEF yields T scores (50;10) scaled so that high scores indicate poor EF
 - These scores were converted to the 100 & 15 metric and inverted so that both tests have the same scaling
- Group was diagnosed with ADHD

Conclusion

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Areas Operationalized: CEFI vs. BRIEF

CEFI		BRIEF	
Emotion Regulation	Control of emotions, staying calm when dealing with small problems, reacting with the right amount of emotion.	Emotional Control	Modulate emotional responses/mood appropriately
Flexibility	Ability to respond appropriately to changing or altered situations or different people/circumstances	Shift	Transition smoothly between or adapt to new activities/ situations; problem-solve flexibly
Impulse Control	Restraining impulses, reactions, or behavior	Inhibit	Control, delay or stop impulses/ behavior
Initiate	Willing exertion of physical or mental effort in pursuit of a goal	Initiate	Begin activity; generate ideas; start new tasks
Memory	Ability to store, retain, manipulate, & recall information	Working Memory	Hold information in mind to complete a task; sustain focus
Organization	Applying a structure or system for arranging or classifying objects & tasks; methodical and efficient behavior	Organization of Materials	Clean up after oneself
Planning	Holding a mental representation of intended action that guides behavior; outline of steps to complete a task/solve a problem	Plan/Organize	Anticipate future events; set goals; develop steps; grasp main ideas; think prospectively; follow a plan
Self/Performance Monitoring	Ability to attend to & evaluate ongoing behavior/outcomes to make necessary corrections for successful goal completion	Monitor	Check work; assess performance; monitor effect of behavior on others

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CEFI and BRIEF Means ADHD

ADHD

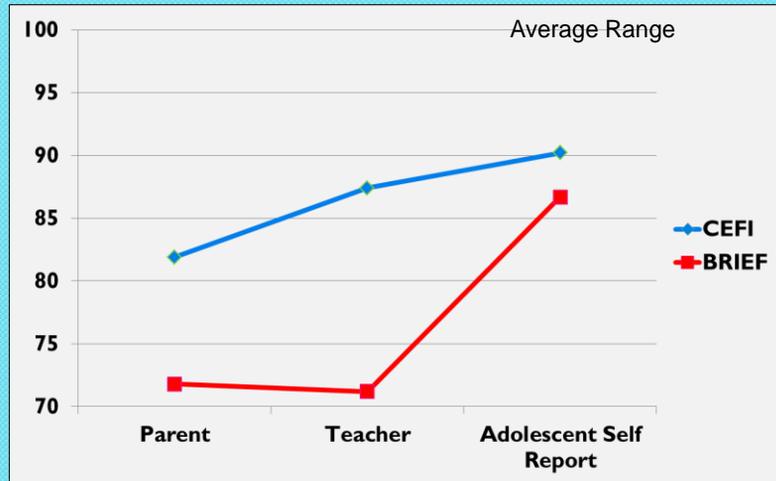
	CEFI			BRIEF			Effect Size
	N	Mn	SD	N	Mn	SD	
Form							
Parent	57	81.9	11.7	57	71.8	13.7	.79
Teacher	51	87.4	11.1	51	71.2	23.7	.88
Self-Rating	32	90.2	14.2	32	86.7	15.9	.23

Note: Effect Sizes of .2 are considered small, .5 medium, and .8 large.

conclusion

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CEFI and BRIEF: ADHD



conclusion

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Take Away Messages

- Scores are only as good as the tests we use.
- The quality of the reference group can make a huge difference in the conclusions reached.
- Norms that represent a typical population are needed for all assessment tools.
- Only scores based on nationally representative samples can provide the accuracy and precision that we must have.

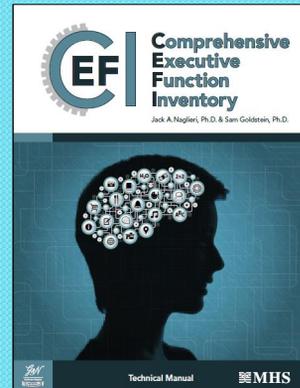
conclusion

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Comprehensive Executive Function Inventory (CEFI)

Jack A. Naglieri
Sam Goldstein

A rating scale designed to measure behaviors association with Executive Function for ages 5-18 years rated by a parent, teacher, or the child/youth.



conclusion

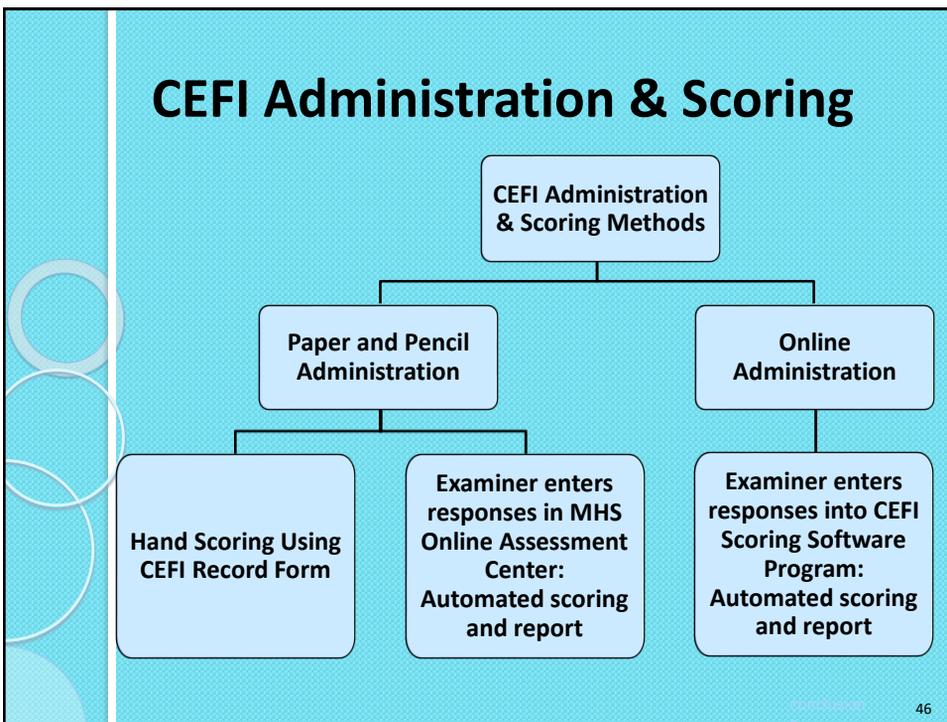
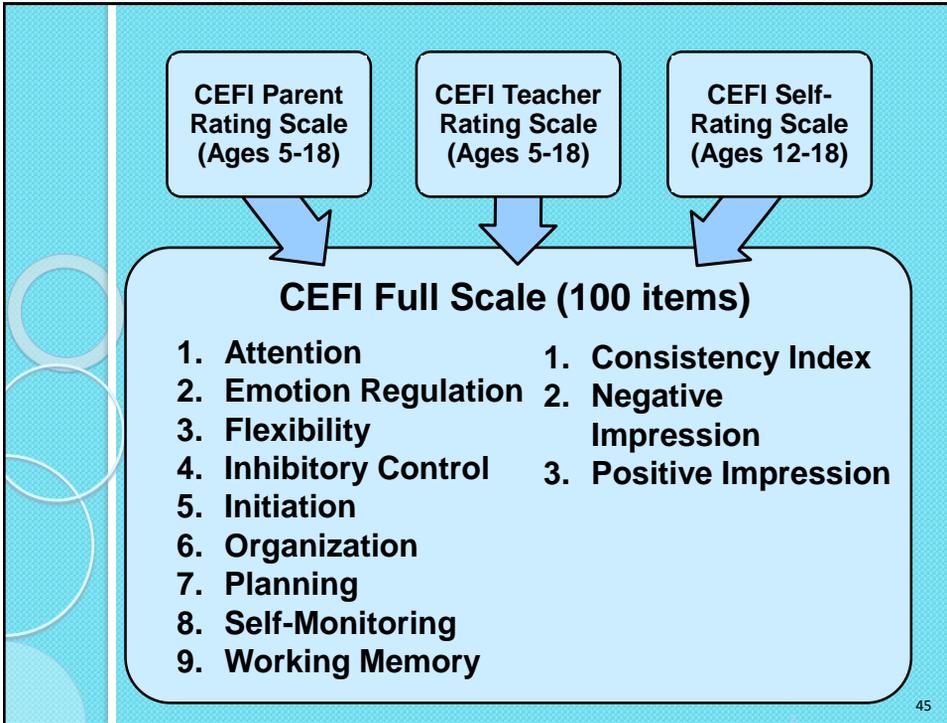
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CEFI Normative Samples

- 1,400 ratings by Parents for children aged 5-18 years
- 1,400 ratings by Teachers for children aged 5-18 years
- 700 ratings from the self-report form for those aged 12-18 years
- There were equal numbers of ratings of or by males and females
- Stratified according to the 2009 US Census by race/ethnicity, parental education, region, age, and sex

conclusion

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CEFI Forms

- The Comprehensive Executive Function Inventory (CEFI) measures behaviors associated with Executive Function (EF) for ages 5 to 18 years.
- The CEFI is completed by a parent, teacher, or the child/youth.
- Each form yields a **Full Scale** score and 9 separate content scales

CEFI Scales

- Attention
- Emotion Regulation
- Flexibility
- Inhibitory Control
- Initiation
- Organization
- Planning
- Self-Monitoring
- Working Memory

CEFI Items by Scale

Table C.4. Attention (12 items)

Item #	Parent/Teacher Item <i>During the past 4 weeks, how often did the child...</i>	Self-Report Item <i>During the past 4 weeks, how often did you...</i>
3.	finish a boring task?	finish a boring task?
11.	work well in a noisy environment?	work well in a noisy environment?
21.	work well for a long time?	work well for a long time?
25.	concentrate while reading?	concentrate while reading?
36.	stay on topic when talking?	stay on topic when talking?

Table C.5. Emotion Regulation (9 items)

Item #	Parent/Teacher Item <i>During the past 4 weeks, how often did the child...</i>	Self-Report Item <i>During the past 4 weeks, how often did you...</i>
10.	control emotions when under stress?	control emotions when under stress?
12.	stay calm when handling small problems?	stay calm when handling small problems?
42.	find it hard to control his/her emotions? (R)	find it hard to control your emotions? (R)
47.	get upset when plans were changed? (R)	get upset when plans were changed? (R)
64.	wait patiently?	wait patiently?
68.	become upset in new situations? (R)	become upset in new situations? (R)

CEFI Items by Scale

Table C.6. Flexibility (7 items)

Item #	Parent/Teacher Item <i>During the past 4 weeks, how often did the child...</i>	Self-Report Item <i>During the past 4 weeks, how often did you...</i>
7.	come up with a new way to reach a goal?	come up with a new way to reach a goal?
41.	come up with different ways to solve problems?	come up with different ways to solve problems?
45.	have many ideas about how to do things?	have many ideas about how to do things?

Table C.7. Inhibitory Control (10 items)

Item #	Parent/Teacher Item <i>During the past 4 weeks, how often did the child...</i>	Self-Report Item <i>During the past 4 weeks, how often did you...</i>
1.	think before acting?	think before acting?
19.	find it hard to control his/her actions? (R)	find it hard to control your actions? (R)
32.	think of the consequences before acting?	think of the consequences before acting?
38.	maintain self-control?	maintain self-control?
49.	have trouble waiting to get what he/she wanted? (R)	have trouble waiting to get what you wanted? (R)

conclusion

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CEFI Items by Scale

Table C.8. Initiation (10 items)

Item #	Parent/Teacher Item <i>During the past 4 weeks, how often did the child...</i>	Self-Report Item <i>During the past 4 weeks, how often did you...</i>
16.	start something without being asked?	start something without being asked?
30.	start conversations?	start conversations?
39.	take on new projects?	take on new projects?
40.	need others to tell him/her to get started on things? (R)	need others to tell you to get started on things? (R)
55.	take initiative?	take initiative?
58.	appear motivated?	appear motivated?

Table C.9. Organization (10 items)

Item #	Parent/Teacher Item <i>During the past 4 weeks, how often did the child...</i>	Self-Report Item <i>During the past 4 weeks, how often did you...</i>
5.	complete one task before starting a new one?	complete one task before starting a new one?
13.	organize his/her thoughts well?	organize your thoughts well?
18.	appear disorganized? (R)	appear disorganized? (R)
27.	complete homework or tasks on time?	complete homework or tasks on time?
34.	work neatly?	work neatly?
52.	keep track of belongings?	keep track of belongings?

conclusion

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CEFI Items by Scale

Table C.10. Planning (11 items)

Item #	Parent/Teacher Item <i>During the past 4 weeks, how often did the child...</i>	Self-Report Item <i>During the past 4 weeks, how often did you...</i>
9.	prepare for school or work?	prepare for school or work?
15.	solve problems creatively?	solve problems creatively?
22.	do things in the right order?	do things in the right order?
28.	plan for future events?	plan for future events?

Table C.11. Self-Monitoring (10 items)

Item #	Parent/Teacher Item <i>During the past 4 weeks, how often did the child...</i>	Self-Report Item <i>During the past 4 weeks, how often did you...</i>
6.	ask for help when needed?	ask for help when needed?
14.	fix his/her mistakes?	fix your mistakes?
17.	change a plan that was not working?	change a plan that was not working?
29.	learn from past mistakes?	learn from past mistakes?

Table C.12. Working Memory (11 items)

Item #	Parent/Teacher Item <i>During the past 4 weeks, how often did the child...</i>	Self-Report Item <i>During the past 4 weeks, how often did you...</i>
4.	forget instructions? (R)	forget instructions? (R)
8.	remember how to do something?	remember how to do something?
23.	forget instructions with many steps? (R)	forget instructions with many steps? (R)
26.	remember many things at one time?	remember many things at one time?

One Factor and 9 Scales?

- NOTE: EF is a unidimensional concept
- Use the Full Scale to answer the question “Is the child poor in EF or not?”
- Use the 9 scales to identify the specific groups of items that represent 9 different types of behaviors that can be addressed by Intervention

CEFI Scales

Attention
 Emotion Regulation
 Flexibility
 Inhibitory Control
 Initiation
 Organization
 Planning
 Self-Monitoring
 Working Memory

Free Use of CEFI: <http://info.mhs.com/cefi>



Comprehensive Executive Function Inventory™ - CEFI®

Request More Information



Learn More

If you are interested in learning more about the CEFI, fill out the form to request information like:

- How this instrument compares to others
- Progress Monitoring
- Intervention Strategies
- View case studies, sample reports or items
- How to use an instrument
- Setting up trainings
- Further questions or comments

I would like to ...

Learn more about: (Check all that Apply)

 Theoretical support for model
 How this assessment compares to other assessments
 Psychometric Properties
 Reliability and Validity
 The Authors
 Speaking with the consultant
 Participate in Data Collection Opportunities
 Other (Please specify in Comments)

I would like to: (Check all that Apply)

 Try it Online For Free
 Speak with a Consultant
 Set Up Training
 Other (Please specify in Comments)

First Name *

Last Name *

I am a ___ and I work in a ___: *

School District/Organization *

Email *

Phone Number *

Preferred Contact Method *

 Phone
 Email

Country *

State/Region * **City ***

I would like to receive email communications on MHS assessments, discounts, workshops, training, data collection opportunities, and surveys. You can unsubscribe at anytime.

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- How this instrument compares to others
- Progress Monitoring
- Intervention Strategies
- View case studies, sample reports or items
- How to use an instrument
- Setting up trainings
- Further questions or comments

I would like to: (Check all that Apply)

 View Samples Items
 View Sample Reports
 View Case Studies
 Speak with a Consultant
 Set Up Training

First Name *

Last Name *

I am a ___ and I work in a ___: *

School District/Organization *

Email *

Phone Number *

Preferred Contact Method *

CEFI Rating Form

CEFI | Comprehensive Executive Function Inventory

G&N
Goldstein & Naglieri
PRACTICE IN ASSOCIATION

(5-18 Years)
PARENT FORM
Jack A. Naglieri, Ph.D. & Sam Goldstein, Ph.D.

Client's Name/ID: <u>Morgan</u>	Today's Date: <u>2012.01.05</u>
Gender: <u>M</u>	Birth Date: <u>11/18/99</u>
Grade: <u>9</u>	Age: <u>12.11.16</u>
Parents Name/ID: <u>Dorlene</u>	School: _____
Relationship to Child: <u>Mother</u>	Examiner: <u>DH</u>

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Internationale: +1-416-451-3027 Fax: +1-416-451-3363 or 1-800-566-6646

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CEFI Interpretive Report

CEFI | Comprehensive Executive Function Inventory

G&N
Goldstein & Naglieri
PRACTICE IN ASSOCIATION

(5-18 Years)
Parent Form
Jack A. Naglieri, Ph.D. & Sam Goldstein, Ph.D.

Interpretive Report

Youth's Name/ID: **Brittany Ambers**
Age: 12 years
Gender: Female
Birth Date: November 18, 1999
Grade: 6
School: K. H.S.
Parent's Name/ID: Mrs. Z
Relationship to Youth: Mother
Administration Date: May 19, 2012
Examiner: DH
Data Entered By: MT

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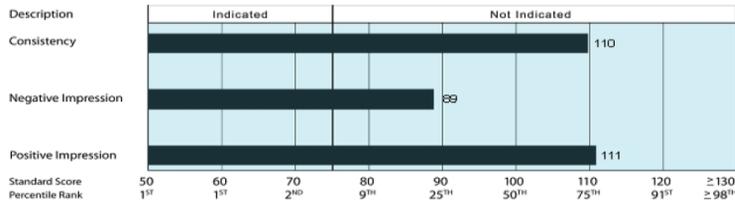
CEFI Interpretive Report

CEFI (5-18 Years) Parent Interpretive Report for Brittany Ambers

Admin Date: 05/19/2012

About the Ratings

This section of the report provides an evaluation of the ratings provided by this rater. Item scores were examined for consistency, negative impression, positive impression, and number of omitted items. This information can be used to determine whether responses should be reviewed with the rater to explore possible reasons response bias is indicated, and the amount of confidence one can have in the scores.



Scores

Consistency Index	Standard Score = 110 Inconsistent response style is not indicated.
Negative Impression Scale	Standard Score = 89 Negative impression response style is not indicated.
Positive Impression Scale	Standard Score = 111 Positive impression response style is not indicated.
Number of Omitted Items	Number of Items Omitted = 0 None of the items were omitted.

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CEFI Interpretive Report

CEFI (5-18 Years) Parent Interpretive Report for Brittany Ambers

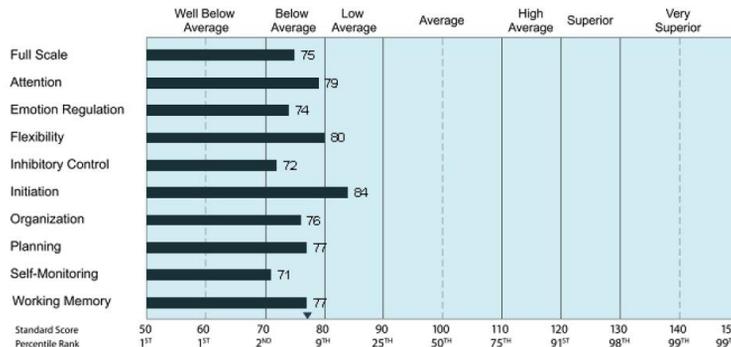
Admin Date: 05/19/2012

Overview of Results for Brittany Ambers

Scores in Relation to the Norm

Brittany Ambers's results are provided in the graph below.

▼ Youth's Average



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CEFI Interpretive Report

CEFI (5–18 Years) Parent Interpretive Report for Brittany Ambers

Admin Date: 05/19/2012

CEFI Results

Brittany Ambers's **Full Scale** standard score of 75 falls in the *Below Average* range and is ranked at the 5th percentile. This means that her score is equal to, or greater than, 5% of those obtained by youth her age in the standardization group. There is a 90% probability that Brittany Ambers's true Full Scale standard score is within the range of 73 to 78. The CEFI Full Scale score is made up of items that belong on separate scales called Attention, Emotion Regulation, Flexibility, Inhibitory Control, Initiation, Organization, Planning, Self-Monitoring, and Working Memory. There was no significant variation among the CEFI Scales. This indicates that Brittany Ambers obtained similar scores on the separate scales. This also means that the Full Scale is a good description of her executive function behaviors.

Brittany Ambers's **Initiation** scale score describes how she begins tasks or projects on her own, including starting tasks easily, being motivated, and taking the initiative when needed. Her standard score of 84 falls in the *Low Average* range and is ranked at the 14th percentile. There is a 90% probability that her true Initiation standard score is within the range of 78 to 93. Item score variability suggests that ratings for Brittany Ambers were low on, for example, initiating conversations and putting plans into action.

Brittany Ambers's **Flexibility** scale score describes how she adjusts her behavior to meet circumstances, including coming up with different ways to solve problems, having many ideas about how to do things, and being able to solve problems using different approaches. Her standard score of 80 falls in the *Low Average* range and is ranked at the 9th percentile. There is a 90% probability that her true Flexibility standard score is within the range of 74 to 92. Ratings for Brittany Ambers were low on, for example, using a different strategy when another doesn't work.

Brittany Ambers's **Attention** scale score reflects how well she can avoid distractions, concentrate on tasks, and sustain attention. Her standard score of 79 falls in the *Below Average* range and is ranked at the 8th percentile. There is a 90% probability that her true Attention standard score is within the range of 74 to 87. Variability in item scores indicates that ratings for Brittany Ambers were low on, for example, finishing a boring task, avoiding distraction and noticing details. (See the *CEFI Items by Scale* section of this report for additional low item scores.)

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Report

➤ General Intervention Strategies are provided

CEFI (12–18 Years) Self-Report Interpretive Report for Random2

Admin Date: 01/07/2013

Intervention Strategies

This section provides intervention strategies for improving upon the weaknesses identified by *Low Average* to *Well Below Average* scores on the CEFI Scales. References for the sources of these strategies are provided at the end of the Intervention Strategies section. (See *CEFI Items by Scale* for a full list of items with below average scores for item-level indicators of specific weaknesses.)

Framework for Implementing Intervention Strategies

The material on this page provides a general framework to follow when implementing the various specific intervention strategies for the behaviors measured in the CEFI that may appear on subsequent pages of this report.

General Developmental Issues

- A child's developmental level should be taken into account when planning intervention strategies.
- Utilize intervention strategies that initially include external controls, prompts and cues to help the child learn and develop new skills.
- Gradually remove external controls to promote internalization of new behaviors and explicitly encourage children to develop and use their own strategies.
- Encourage the child by explicitly communicating that change is possible with effort and motivation to achieve.
- Carefully consider strategies to enhance generalization of new skills, across tasks, time, and settings.

External Support

- Structure the environment (e.g., cues, prompts), including the child's schedule (e.g., create a consistent routine with breaks and extra time for tasks) until internal control of behavior is mastered.
- Provide lists and charts that give specific suggestions for how to accomplish tasks and activities.
- Encourage children to develop their own solutions to getting things done.

Motivation

- Make use of natural motivations to encourage desired behavior.
- Promote positive behavior through reward and encouragement.

Internalization

- Provide feedback on the child's performance and encourage self-monitoring.
- Teach awareness strategies (e.g., training in self-management and self-monitoring skills; the technique of "self-talk").

Skill Building

- Build a child's vocabulary and language skills to help him/her gain control over successful expression of his/her emotions and thoughts.
- Develop verbal mediation skills (e.g., verbal cues, questions, and discussion) to guide thinking and social processes.
- Provide meditation techniques to help improve self-control over attention, affect, and behavior.
- Model behaviors that illustrate strategic problem solving, self-reflection, and thoughtful approaches to work.

CEFI (12–18 Years) Self-Report Interpretive Report for Random2 Admin Date: 01/07/2

Report

Intervention Strategies are provided for each of the 9 CEFI scales

Intervention Strategies for Attention

Helping a Child Overcome Problems with Inattention

First, help the child understand the nature of his or her attention problems, including:

- Concepts such as attention, resistance to distraction, and control of attention.
- Recognition of how attention affects daily functioning.
- Recognition that the deficit can be overcome.
- Basic elements of the control program.

Second, teachers and parents can help the child improve his or her motivation and persistence:

- Promote success via small steps.
- Ensure success at school and at home.
 - Allow for oral responses to tests.
 - Circumvent reading whenever possible.
- Teach rules for approaching tasks.
 - Help the child define tasks accurately.
 - Assess the child's knowledge of problems.
 - Encourage the child to consider all possible solutions.
 - Teach the child to use a correct test strategy.
- Discourage passivity and encourage independence.
 - Do not rely too heavily on teacher-oriented approaches.
 - Require the child to take responsibility for correcting his or her own work.
 - Help the child to become more self-reliant.
- Encourage the child to avoid:
 - Excessive talking.
 - Working fast with little accuracy.
 - Giving up too easily.
 - Turning in sloppy, disorganized papers.

Third, teachers and parents should give the child specific problem-solving strategies.

- Model and teach strategies that improve attention and concentration.
- Help the child to recognize when he or she is under- or over-attentive.

Naglieri, J. A., & Pickering, E. B., *Helping Children Learn: Intervention Handouts for Use at School and at Home*, Second Edition, 2010. Baltimore: Paul H. Brookes Publishing Co., Inc. www.brookespublishing.com. Used with the permission of the publisher.

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CEFI Characteristics

- CEFI is a strength based rating scale
- Items are positively worded
 - “have many ideas about how to do things”
- Calibrated using mean of 100 SD of 15
 - Easier to compare to intelligence test scores
- Higher scores = more behavior related to EF
- Several different administration and scoring options
- Empirically supported interpretation method
- Intervention suggestions provided

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Presentation Outline

- Comprehensive Model of EF
 - Historical Perspective
 - Definitions of Executive Function
- EF - Behavior
- EF - Ability (an intelligence)
- EF - Social Emotional Skills
- EF - Academic performance
- Research about EF as ability, behavior, and SE
- **Think Smart!** -- EF Skills in the Classroom
 - More lesson plans for improving components of EF
- Conclusions

conclusion

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EF is a Brain-Based Ability

- EF is an ability by virtue of its relationship to the brain
- Because there is a relationship between BRAIN FUNCTION and BEHAVIOR, behaviors tell us about the ABILITY (sometimes...)
- EF skills are the result of EF Ability **and** well practiced behaviors that reflect EF
 - Not all abilities and not all behaviors involve EF

conclusion

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A Theory of Learning

28

Cognitive Assessment System: Redefining Intelligence From a Neuropsychological Perspective

Jack A. Naglieri and Tulio M. Otero

INTRODUCTION

Pediatric neuropsychology has become an important field for understanding and treating developmental, psychiatric, psychosocial, and learning disorders. By addressing both brain functions and environmental factors intrinsic in complex behaviors, such as thinking, reasoning, planning, and the variety of executive capacities, clinicians are able to offer needed services to children with a variety of learning, psychiatric, and developmental disorders. Brain-behavior relationships are investigated by neuropsychologists by interpreting several aspects of an individual's cognitive, language, emotional, social, and motor behavior. Standardized instruments are used by neuropsychologists to collect information and derive inferences about brain-behavior relationships. Technology, such as magnetic resonance imaging (MRI), functional MRI (fMRI), positron emission tomography, computerized tomography, and diffusion tensor imaging, has reduced the need for neuropsychological tests to localize and access brain damage. Neuropsychological tests, however,

Such tools should not only provide for the diagnosis and address the qu

FROM NEUROPSYCHOLOGY TO ASSESSMENT

Luria's theoretical account, perhaps one of the most influential (Luria, 2008). Luria conceptualized of brain-behavior relationships in orders that the clinician can use to understand the brain, the functional syndromes and impairments, and clinical methods of assessment. Luria's theoretical formulations, methods, and ideas are articulated in works such as *Higher cortical functions in man* (1966, 1980) and *The Working Brain* (1973). Luria viewed the brain as a functional mosaic, the parts of which interact in dif-

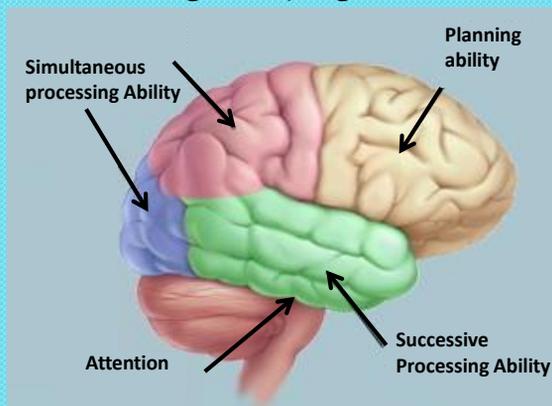
Handbook of PEDIATRIC Neuropsychology

Andrew S. Davis
Editor

Brain, Cognition, & Behavior

- The brain is the seat of abilities called PASS
- These abilities comprise what has been described as a modern view of intelligence (Naglieri & Otero, 2011)

Naglieri, J. A. & Otero, T. (2011). Cognitive Assessment System: Redefining Intelligence from A Neuropsychological Perspective. In A. Davis (Ed.). *Handbook of Pediatric Neuropsychology* (320-333). New York: Springer Publishing.



IQ defined by BRAIN function

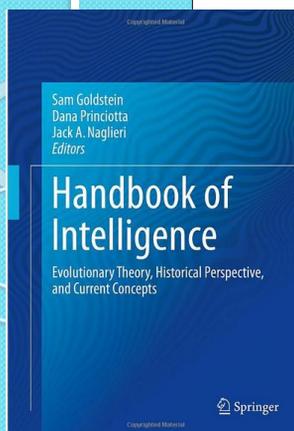
- **PASS** theory is a modern way to define 'ability' (AKA – intelligence)
- **P**lanning = THINKING ABOUT THINKING
- **A**ttention = BEING ALERT
- **S**imultaneous = GETTING THE BIG PICTURE
- **S**uccessive = FOLLOWING A SEQUENCE
- See

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100 Years of Intelligence and IQ

<http://www.jacknaglieri.com/cas2.html>



Hundred Years of Intelligence Testing: Moving from Traditional IQ to Second-Generation Intelligence Tests

20

Jack A. Naglieri

"Do not go where the path may lead, go instead where there is no path and leave a trail."

—Ralph Waldo Emerson

1917, is remembered as the day the entered World War I. On that same of psychologists held a meeting in ersity's Emerson Hall to discuss the they could play with the war effort

(1917). The group agreed that psychological knowledge and methods could be of importance to the military and utilized to increase the efficiency of the Army and Navy personnel. The group included Robert Yerkes, who was also the president of the American

Training School in Vineland, New Jersey, on May 28. The committee considered many types of group tests and several that Arthur S. Otis developed when working on his doctorate under Lewis Terman at Stanford University. The goal was to find tests that could efficiently evaluate a wide variety of men, be easy to administer in the group format, and be easy to score. By June 9, 1917, the materials were ready for an initial trial. Men who had some educational background and could speak English were administered the verbal and quantitative (Alpha) tests and those that could not read the newspaper or speak English were given the Beta tests (today described as nonverbal).

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PASS Theory: Planning

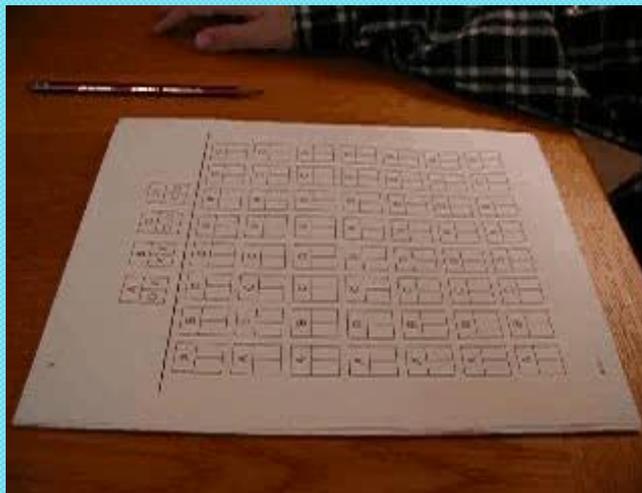
► **Planning** is a neurocognitive ability that a person uses to determine, select, and use efficient solutions to problems

- problem solving
- developing plans and using strategies
- retrieval of knowledge
- impulse control and self-control
- control of processing

conclusion

69

Planned Codes 1



conclusion

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Math Strategies

Note to the Teacher:

When we teach children skills by helping them use strategies and plans for learning, we are teaching both knowledge and processing. Both are important.

Name _____

Doubles and Near Doubles

double
 $8 + 8 = 16$

How many are there? near double
 $8 + 9 = 17$

Ring the double. Add.

1. $6 + 6 = 12$
 $6 + 7 = 13$

2. $5 + 5 = 10$
 $5 + 6 = 11$

3. $7 + 7 = 14$
 $7 + 8 = 16$

4. $4 + 4 = 8$
 $4 + 5 = 9$

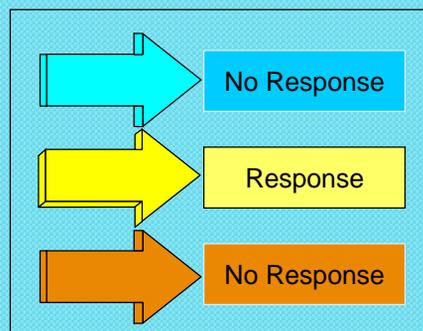
CHECK If you know the sum of $8 + 8$, how can you find $8 + 9$?

three hundred thirty-five 335

PASS Theory

► **Attention** is a neurocognitive ability that a person uses to selectively attend to some stimuli and ignore others

- selective attention
- focused cognitive activity over time
- resistance to distraction



Attention

This sheet has a strong Attention demands because of the similarity of the options

11. A 3:15 A.M.
 B 3:30 P.M.
 C 3:15 P.M.
 D 3:15 A.M.



leave school

11. 3:15 p.m.

12. Trent began studying at 5:00 P.M. and finished 1 hour and 22 minutes later. What time did he finish?

- A 6:22 A.M. B 5:22 P.M. C 6:10 P.M. D 6:22 P.M.

12. 6:22 p.m.

13. Maura began basketball practice at 3:00 P.M. and finished 50 minutes later. What time did she finish?

- A 3:50 P.M. B 3:05 A.M. C 4:05 P.M. D 4:50 A.M.

13. 3:50 p.m.

14. Lance fished from 6:00 A.M. to 9:45 A.M. How long did he fish?

- A 3 hours B 3 hours and 15 minutes
 C 3 hours and 45 minutes D 4 hours and 45 minutes

14. 3 hours 45 min.

CAS2

- CAS2 Yields PASS and Full Scale score but ALSO
- Executive Function which is the combination of a Planning and Attention subtests
- Also: Working Memory, Verbal, Nonverbal and a Visual and Auditory comparison

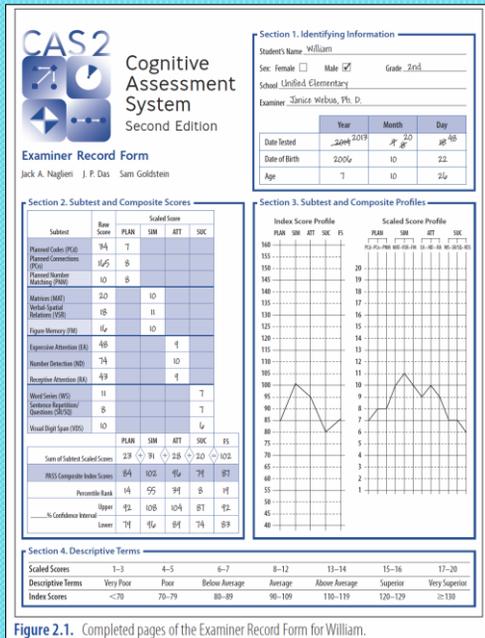


Figure 2.1. Completed pages of the Examiner Record Form for William.

EF ability and the brain

- Planning and Attention have been included in conceptualizations of Executive Function
- The next two abilities are **not** related to EF
 - We will see what they are and ...
 - See how we can improve performance when these abilities are required by using EF (strategies) to improve performance

conclusion

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Two abilities that are NOT EF

Simultaneous and Successive

conclusion

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PASS Theory

- **Simultaneous** is a neurocognitive ability a person uses to integrate stimuli into groups
 - Parts are seen as a whole
 - Each piece of information is related to others
 - Visual spatial tasks like blocks and puzzles on the Wechsler Nonverbal Scale
 - KABC Simultaneous Scale

conclusion

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Progressive Matrices

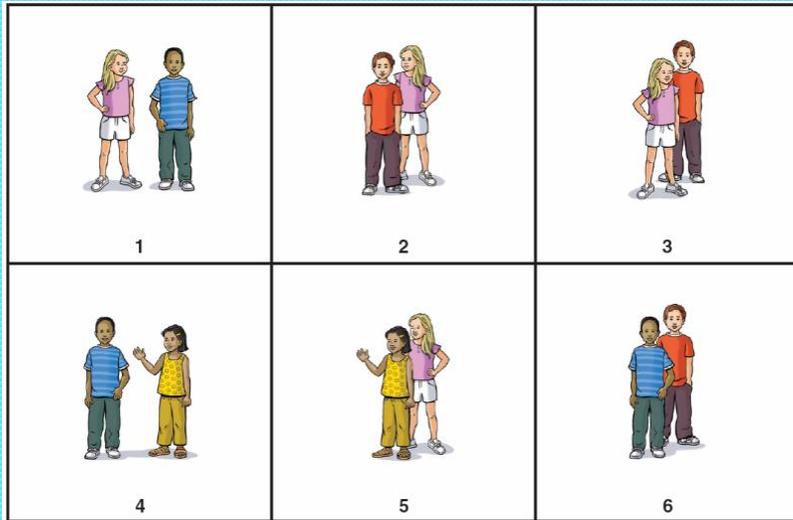
3

1 2 3 4 5

conclusion

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Verbal-Spatial Relations



Which picture shows a boy behind a girl?

Numbers from 1 to 100

How can EF be brought to this Work sheet?

Use Simultaneous processing to see that patterns

Name Jack Secret number _____

Write the numbers 1 to 100 in order.

★ 100% beautiful numbers!! 😊

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

TR20 Blank Hundred Chart © J.C. Pugh and Company

Use EF to manage low Simultaneous

- How do you help a child with low simultaneous ability?
- Teach students to USE EF – that is use strategies
- What kinds of strategies could you use for tasks that require seeing the whole?

Use EF

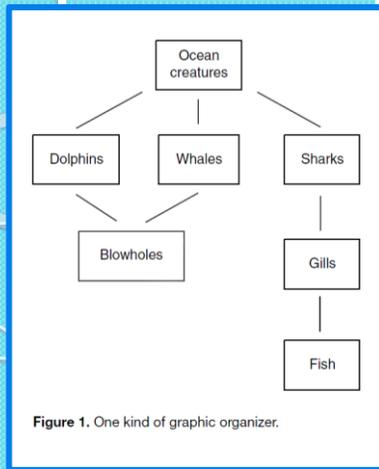


Figure 1. One kind of graphic organizer.

Graphic Organizers for Connecting and Remembering Information

Remembering and relating information is a common part of learning and daily life. Students are often expected to learn large amounts of new and unfamiliar information. Learning facts requires the student to see how information is connected or related. Students often remember this information better if they see it graphically and understand how it relates to knowledge they already have. Graphic organizers are designed to help students (and teachers) present and organize information so it is easier to understand and remember.

Graphic Organizers

New information is better remembered if it is connected to information the students already know. Graphic organizers are visual representations of information that shows the links of new information to other new and existing information. This makes the new information easier to understand and learn. Furthermore, the visual nature of graphic organizers and the links they make help students understand the connections between information parts. For example, a graphic organizer might be used to teach young children about different animals. A child learning about different kinds of animals might already know what a fish is. This knowledge can be used to graphically organize whales, sharks, and dolphins. They all live underwater, but sharks have gills and are fish. (Whales and dolphins have blowholes and breathe air, so they are not fish.) Figure 1 represents one way to map this information.

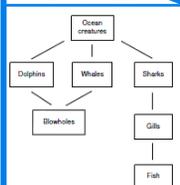


Figure 1. One kind of graphic organizer.

Another type of graphic organizer is a Venn diagram, which uses circles to demonstrate how concepts are related. Figure 2 shows the same information as Figure 1, but in the form of a Venn diagram.

How to Teach Graphic Organizers

Graphic organizers are fairly simple to create. They need not be reserved for factual information. They can be used for activities such as exploring creative concepts, organizing writing, and developing language skills. The following four steps can be used to create a graphic organizer:

1. Select information that you need to present to the child (which may be from a story, a chapter, or any concept).
2. Determine the key components that are necessary for the child to learn.

Venn Diagram

Graphic Organizers for Connecting and Remembering Information (continued)

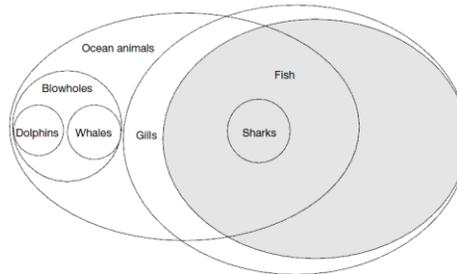


Figure 2. A Venn diagram used as a graphic organizer.

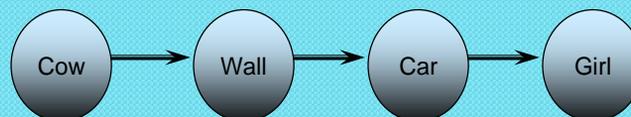
3. Create the graphic representation of the information. The illustration should include the key concepts, concepts the child already knows, and the linkages between the concepts.
4. Present the organizer to the child and discuss it to be sure he or she understands the information and sees the connections.

conclusion

83

Successive Processing Ability

- ▶ **Successive** processing is a basic cognitive ability which we use to manage stimuli in a specific serial order
 - Stimuli form a chain-like progression
 - Stimuli are not inter-related



conclusion

84

Word Series

- The child repeats a series of words in the same order the examiner says them

1. Wall-Car
2. Shoe-Key
- ...
10. Cow-Wall-Car-Girl
11. Dog-Car-Girl-Shoe-Key
- ...
27. Cow-Dog-Shoe-Wall-Man-Car-Girl

copyright

85

Sentence Questions (Ages 8-17)

- The child answers a question read by the examiner

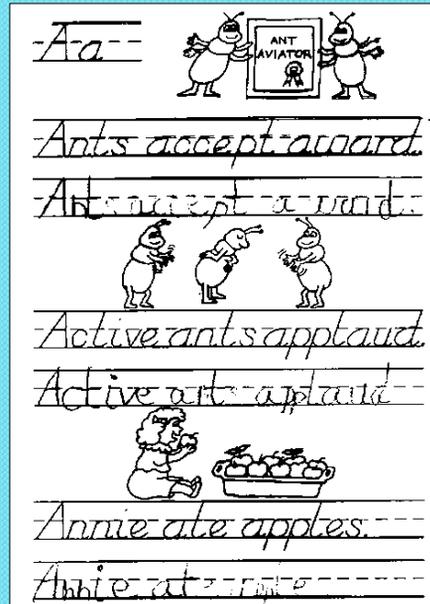
1. The blue is yellow. Who is yellow?
10. The red greened the blue with a yellow. Who used the yellow?
20. The red blues a yellow green of pinks, that are brown in the purple, and then grays the tan. What does the red do first?

copyright

86

Successive

The sequence of the sounds is emphasized in this work sheet



conclusion

87

Use EF to manage low Successive

- How do you help a child with low Successive ability?
- Teach students to USE EF – that is use strategies
- What kinds of strategies could you use for tasks that require working with information that is in a specific sequenc?

conclusion

88

Ben's Problem with Successive Ability

➤ Teach him to recognize sequences

How to Teach Successive Processing Ability

The first step in teaching children about their own abilities is to explain what Successive processing ability is. In Figure 1 (which is included in the PASS poster on the CD), we provide a fast and

**Think smart
and follow the
sequence!**



Figure 1. A graphic that helps students understand Successive processing.

simple message: "Think smart and follow the sequence!" We should begin by helping children realize that they have many different types of abilities and that Successive processing is one of them. During appropriate times during the day, remind students to closely attend to the sequence of information—when reading, presenting information in written text, examining the sequence of letters when doing spelling, solving math equations, and so forth. We need to teach children to approach *all* of their work with an understanding of how the information is sequenced. Throughout the day, the teacher should do the following:

EF strategies to overcome Successive weakness

Chunking for Reading/Decoding

Segmenting Words for Reading/Decoding and Spelling

Readi
stand
quenc
more
easily
units 1

How Decoding a written word requires the person to make sense out of printed letters and words to translate letter sequences into sounds. This demands understanding the sounds that letters represent and how letters work together to make sounds. Sometimes words can be segmented into parts for easier and faster reading. The word *into* is a good example because it contains words that a child may already know: *in* and *to*. Segmenting words can be a helpful strategy reading as well as spelling.

Pla

Look ε
Find tt
Sounc
Sounc
Sounc

How to Teach Segmenting Words

Segmenting words is an effective strategy to help students read and spell. By dividing the words into groups, students also learn about how words are constructed and how the parts are related.

Presentation Outline

- Comprehensive Model of EF
 - Historical Perspective
 - Definitions of Executive Function
- EF - Behavior
- EF - Ability (an intelligence)
- EF - Social Emotional Skills
- EF - Academic performance
- Research about EF as ability, behavior, and SE
- **Think Smart!** -- EF Skills in the Classroom
 - More lesson plans for improving components of EF
- Conclusions

conclusion

91

Phineas had Social Emotional deficit

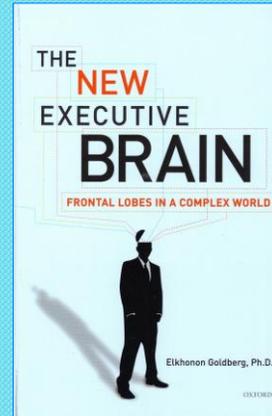
- Phineas had profound social emotional problems after his injury to the frontal lobes
- Phineas is
 - insulting
 - impulsively say things
 - uses vulgar language
 - can't manage his emotions
 - inconsistent in social situations
 - doesn't recognize he is offensive
 - loses control in interactions with others

conclusion

92

Frontal Lobes and Emotion

- Goldberg (2011, p 116-117)
 - the “emphasis in the classic studies of frontal lobe syndromes was on cognition [intelligence] rather than on affect [social emotional]”
 - ‘very few researchers have attempted to merge cognitive and emotional aspects of frontal lobe dysfunction’



conclusion

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Social Emotional Skills: From Conceptual to Assessment to Instruction

conclusion

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www.casel.org

About Why It Matters In Schools Collaborating Districts Initiative Policy & Advocacy Research

Good science links Social & Emotional Learning to the following:

STUDENT GAINS

- Social-emotional skills
- Improved attitudes about self, others, and school
- Positive classroom behavior
- 11 percentile-point gain on standardized achievement tests

REDUCED RISKS FOR FAILURE

- Conduct problems
- Aggressive behavior
- Emotional distress

Benefits of Social and Emotional Learning

Social and emotional learning improves student outcomes.

[» READ MORE](#)

Collaborating Districts Initiative
Collaborating Districts Initiative
This is a national initiative to take social and emotional learning to scale in eight large districts. Three have already been selected. Five more will be selected by December 2011.
[» READ MORE](#)

All Invited
Roger Weissberg to speak Oct. 20 in Chicago

Roger Weissberg to speak on Oct. 20 at Inverhulle of NiVo Endowed Chair of Social and Emotional Learning. Public invited.
[» READ MORE](#)

Twitter Feed

CASEL.org: @BarefootBehavior Thanks for the shout-out! We're very excited about this initiative and what it means for the future of #SEL nation-wide!
Posted 5 hours, 39 minutes ago

CASEL.org: @yannieroux Do you mean the meta-analysis? Summary here <http://it.co/8k2XBEys> with full article download link at bottom.
Posted 5 hours, 43 minutes ago

CASEL.org: This article discusses benefits students get from afterschool activities & what they mean to overall school engagement <http://it.co/YDwd4tqi>

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Social Emotional Skills

Five key social-emotional skills from CASEL

These are in many state and local standards

What is Social and Emotional Learning?

The Collaborative for Academic, Social, and Emotional Learning (CASEL) describes SEL as the process of developing the following five sets of core competencies in the context of safe, caring, well-managed, academically rigorous, and engaging learning environments:

- 1 Self-awareness**—being able to accurately assess one's feelings, interests, values, and strengths; maintaining a well-grounded sense of self-confidence
- 2 Self-management**—being able to regulate one's emotions to handle stress, control impulses, and persevere in overcoming obstacles; setting and monitoring progress toward personal and academic goals; expressing emotions effectively
- 3 Social awareness**—being able to take the perspective of and empathize with others; recognizing and appreciating individual and group similarities and differences; recognizing and using family, school, and community resources
- 4 Relationship skills**—being able to establish and maintain healthy and rewarding relationships based on cooperation; resisting inappropriate social pressure; preventing, managing, and resolving interpersonal conflict; seeking help when needed
- 5 Responsible decision-making**—being able to make decisions based on consideration of reason, ethical standards, safety concerns, social norms, respect for self and others, and likely consequences of various actions; applying decision-making skills to academic and social situations; contributing to the well-being of one's school and community.¹

CASEL.org 96

In Goldstein & Brookes (2013)

Measuring Resilience in Children: From Theory to Practice*

14

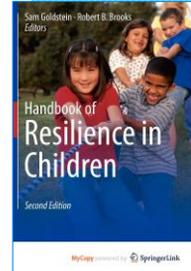
Jack A. Naglieri, Paul A. LeBuffe, and Katherine M. Ross

Introduction

The concept of resilience, like all psychological constructs, must have certain characteristics in order to be subjected to experimental testing so as to be effectively applied to benefit our constituency. A primary characteristic is that resilience must be operationally defined in a way that is reliable across time, subjects, and researchers. Once a concept is operationalized in a reliable manner, then its validity can be examined. When we have sufficiently operationalized the concept of resilience, and there is evidence that it can be measured in

a reliable and valid way, then application in clinical and educational settings becomes possible. This is an ideal sequence for the development tools for testing new concepts, but it is not how many concepts and tests used in education and psychology have been promulgated.

In practice, there is great emphasis on helping clients and pressure to implement new approaches even if they have only been minimally tested. If an idea appears logical and appears to help clients then it seems reasonable to believe that the construct possesses validity, however ill-defined that may be. Unfortunately, what seems logical and consistent with clinical experience may not be true. As noted by Garb (2003, p. 32), "Results



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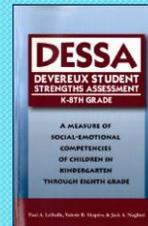
97

The DESSA Comprehensive System

- Universal screening with an 8-item, strength-based behavior rating scale, the *DESSA-mini* for universal screening and ongoing progress monitoring
- 72-item *DESSA* to find specific areas of need



Paul LeBuffe & Valerie Shapiro



©2013/18/100

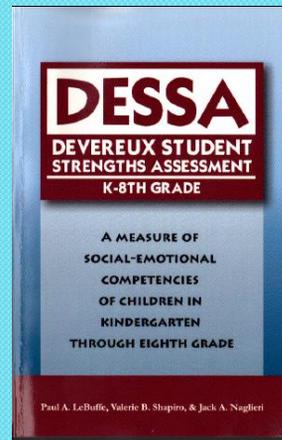
98

<http://www.centerforresilientchildren.org/>

The screenshot shows the website for the Devereux Center for Resilient Children. At the top, the logo "Devereux CENTER FOR RESILIENT CHILDREN" is on the left, and navigation links "Home | About Us | Testimonials | In The News | Newsletter | Contact Us" are on the right. Below the logo are social media icons for Facebook, Twitter, and YouTube. A horizontal menu contains "Overview", "Infants & Toddlers", "Preschool", "School-Age", and "Adults". A search bar is on the right. The main content area features a video player with a thumbnail of two smiling children. Text to the left of the video reads: "Mental health experts speak out on the importance of early childhood social and emotional screening, and their success with the Devereux Early Childhood Assessment Program." Below this is the Devereux logo and the text "Watch the video!". At the bottom, there are four featured sections: "INFORMATIONAL WEBINARS" with a woman at a computer, "DCRC RESOURCES" with "DVDs Assessment Strategies for Teachers Music RESILIENCE Research Web-based Families", "EVENT REGISTRATION" with a group of people, and "DECA-P2 DOWNLOADS" with a "NEW!" starburst and images of assessment materials.

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Assessment of Social Emotional Skills with the DESSA



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The DESSA

- Based on resilience theory & SEL principles described by CASEL
 - Identify social-emotional **strengths** and needs of elementary and middle school children (for K-8th grade)
 - 72 items and 8 scales
 - Completed by parents, teachers, and/or after-school / community program staff
 - Takes 15 minutes to complete
 - On-line administration, scoring and reporting

© 2010 CASEL

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DESSA Scales

- DESSA Norms for the 8 scales and the total (MN = 50, SD = 10)
- 2,475 children, grades K-8
- All 50 states included in sample
- Representative of US Population

Social Emotional Composite

Self Awareness

Self Management

Social Awareness

Relationship Skills

Decision Making

Goal Directed Behavior

Personal Responsibility

Optimistic Thinking

© 2010 CASEL

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The DESSA-mini

- The DESSA-mini allows for:
 - Universal screening
 - Determination of need for instruction
- Four equivalent 8-item forms
 - Ongoing Progress Monitoring
 - Completed in 1-2 minutes by teachers
 - Yields one score – Social-Emotional Total Score

Conclusion

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Four Forms of DESSA-mini

DESSA DEVEREUX STUDENT STRENGTHS ASSESSMENT - MINI (DESSA-MINI) FORM 4
 JACK A. NAGLIERI, PAUL A. LEBUFFE, AND VALERIE B. SHAPIRO

Child's Name _____ Gender _____ DOB _____ Grade _____
 Person Completing this Form _____ Relationship to Child _____
 Date of Rating _____ School/Organization _____ Classroom/Program _____

This form describes a number of behaviors seen in some children. Read the statements that follow the phrase: *During the past 4 weeks, how often did the child...* and place a check mark in the box underneath the word that tells how often you saw the behavior. Answer each question carefully. There are no right or wrong answers. Please answer every item. If you wish to change your answer, put an X through it and fill in your new choice as shown to the right.

Item #	During the past 4 weeks, how often did the child...	Never	Rarely	Occasionally	Frequently	Very Frequently	Score
1.	look forward to classes or activities at school?	0	1	2	3	4	_____
2.	show appreciation of others?	0	1	2	3	4	_____
3.	encourage positive behavior in others?	0	1	2	3	4	_____
4.	teach another person to do something?	0	1	2	3	4	_____
5.	show an awareness of her/his personal strengths?	0	1	2	3	4	_____
6.	make a suggestion or request in a polite way?	0	1	2	3	4	_____
7.	use available resources (people or objects) to solve a problem?	0	1	2	3	4	_____
8.	seek out additional knowledge or information?	0	1	2	3	4	_____

Raw Score Sum _____

http://nrepp.samhsa.gov

NREPP SAMHSA's National Registry of Evidence-based Programs and Practices

Home | About NREPP | Find an Intervention | Reviews & Submissions | Learning Center | Contact Us

NREPP is a searchable online registry of [more than 310 interventions](#) supporting mental health promotion, substance abuse prevention, and mental health and substance abuse treatment. We connect members of the public to intervention developers so they can learn how to implement these approaches in their communities.

NREPP is not an exhaustive list of interventions and inclusion in the registry does not constitute an endorsement. [Learn More >](#)

Basic Search | **Advanced Search** | **View All Interventions**

Find an Intervention

self-regulation

Find interventions reviewed by NREPP.

News
[Learn About NREPP's RSS Feed](#)

New Intervention Summary Available - 10/24/2013
 Read the newly posted summary for *InsideOut Dad*
[Read more >](#)

New Intervention Summary Available - 10/21/2013
 Read the newly posted summary for *Family Expectations*
[Read more >](#)

300th Intervention Summary Posted
 SAMHSA's NREPP reached a new milestone, publishing its 300th summary of an evidence-based substance abuse or mental health intervention. See the [SAMHSA Bulletin](#) for more information about NREPP and this milestone.

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http://nrepp.samhsa.gov

➤ Research on this intervention is described and published references provided

Descriptive Information	
Area of Interest	Mental health treatment
Outcomes	Review Date: December 2010 1) ADHD symptoms 2) Social functioning 3) Academic performance 4) School functioning
Outcome Categories	Education Mental health Social functioning
Age(s)	6-12 (N/A/None) 13-17 (Adolescent)
Gender(s)	Male Female
Race(s)/Ethnicity	Black or African American Hispanic or Latino White Ethnicity unspecified
Settings	School
Geographic Location(s)	Urban Suburban Rural and/or frontier
Implementation History	The after-school model of CDP was first implemented in 1999 in a middle school in Harrisonburg, Virginia. Since then, it has been implemented in Columbia, South Carolina; Pittsburgh, Pennsylvania; and Atlanta, Georgia; Lexington, and Logan, Ohio. The counseling model was first implemented in 2001 in Harrisonburg and has been implemented in all four of the Ohio sites. More than 1,200 students have participated in one of the four models of CDP.
NIM Funding/CSR Studies	Partially funded by National Institutes of Health; the funded in comparative effectiveness research studies. No.
Adaptation	No provision or culture specific adaptations of the intervention were identified by the developer.
Adverse Effects	No adverse effects, concerns, or unintended consequences were identified by the developer.
ICM Prevention Categories	ICM prevention categories are not applicable.

Readiness for Dissemination Ratings by Criteria (0.0-4.0 scale)

External reviewers independently evaluate the intervention's Readiness for Dissemination using three criteria:

1. Availability of implementation materials
2. Availability of training and support resources
3. Availability of quality assurance procedures

For more information about these criteria and the meaning of the ratings, see [Readiness for Dissemination](#).

Implementation Materials	Training and Support Resources	Quality Assurance Procedures	Overall Rating
3.5	4.0	3.8	3.8

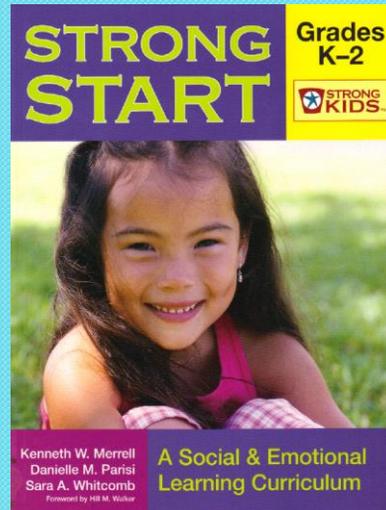
Second Step Method for Teaching Social Emotional Skills



107

Ken Merrell Strong Start

- Strong Start includes Social & Emotional learning curriculum for Kindergarten through 12th grade students



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Take Away Messages

- Social Emotional Skills are the result of EF and what the person has learned in all aspects of the environment
- Children CAN BE TAUGHT good, or bad, social emotional skills

conclusion

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Presentation Outline

- Comprehensive Model of EF
 - Historical Perspective
 - Definitions of Executive Function
- EF - Behavior
- EF - Ability (an intelligence)
- EF - Social Emotional Skills
- EF - Academic performance
- Research about EF as ability, behavior, and SE
- **Think Smart!** -- EF Skills in the Classroom
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- Conclusions

conclusion

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EF and Achievement (Naglieri & Rojahn, 2004)

Journal of Educational Psychology
2004, Vol. 96, No. 1, 114–181

Copyright 2004 by the American Psychological Association, Inc.
0022-0663/04/\$12.00 DOI: 10.1037/0022-0663.96.1.114

Construct Validity of the PASS Theory and CAS: Correlations With Achievement

Jack A. Naglieri and Johannes Rojahn
George Mason University

The relationship among Planning, Attention, Simultaneous, and Successive (PASS) processing scores of the Cognitive Assessment System (CAS) and the Woodcock-Johnson Revised Tests of Achievement (WJ-R) were examined with a sample of 1,559 students aged 5–17 years. Participants were part of the CAS standardization sample and closely represented the U.S. population on a number of important demographic variables. Pearson product-moment correlation between CAS Full Scale and the WJ-R Skills cluster was .71 for the Standard and .70 for the Basic CAS Battery scores, providing evidence for the construct validity of the CAS. The CAS correlated with achievement as well if not better than tests of general intelligence. The amount of variance in the WJ-R scores the CAS accounted for increased with age between 5- to 13-year-olds. The 4 PASS scale scores cumulatively accounted for slightly more of the WJ-R variance than the CAS Full Scale score.

There are many ways in which the validity of a theory of cognitive ability may be evaluated. Psychologists often attempt to relate information about a child's cognitive characteristics to that child's academic performance. Because cognitive ability and academic achievement share a significant portion of the same con-

achievement. For instance, subtests like General Information are also included on individual achievement tests (e.g., the Peabody Individual Achievement Test—Revised; Markwardt, 1997). Similarly, the WISC-III Vocabulary and Similarities subtests require knowledge of words, which is also assessed by vocabulary or word

11013181001

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EF and Achievement (Naglieri & Rojahn, 2004)

- Correlation between Executive Function (Planning + Attention) and overall achievement (Skills Cluster) = **.51** (N = 1,559; $p < .001$)
- P&A added significantly to the prediction of achievement after Simultaneous and Successive scores were used in the regression equation

Table 3

Pearson Product-Moment Correlations Between the CAS Basic Battery and Standard Battery Full Scale Scores and the WJ-R Subscale and Cluster Scores (N = 1,559)

Scale	CAS Standard Battery subtests			
	Planning	Simultaneous	Successive	Attention
WJ-R subtests				
Letter-Word Identification	.47	.53	.49	.42
Passage Comprehension	.43	.50	.47	.39
Calculation	.50	.47	.36	.43
Applied Problems	.49	.60	.47	.44
Dictation	.50	.53	.49	.44
Word Attack	.41	.48	.44	.37
Reading Vocabulary	.42	.53	.50	.35
Quantitative Concepts	.51	.59	.49	.44
Proofing	.44	.48	.44	.40
WJ-R clusters				
Broad Reading	.48	.55	.50	.43
Basic Reading	.47	.54	.49	.42
Reading Comprehension	.44	.54	.50	.39
Broad Math	.54	.58	.45	.47
Basic Math	.55	.58	.46	.47
Math Reasoning	.49	.60	.47	.44
Basic Writing	.51	.55	.48	.45
Skills Cluster	.54	.62	.53	.48

Note. CAS = Cognitive Assessment System; WJ-R = Woodcock-Johnson Revised Tests of Achievement.

11013181001

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Academic Tasks and EF

➤ Whenever a person has to figure out **how to solve a problem** EF is required.

- Math calculation
- Memorization of information
- Reading comprehension

conclusion

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Academic Tasks and EF

➤ How to prepare for a weekly spelling test requires EF

This Week's Spelling Words	
Here are the words for this Friday's test:	How will you learn the words?
1. found	1. Start today
2. ground	2. Study 15 minutes per day
3. mouth	3. Study with a friend
4. ouch	4. Write each word 10 times
5. couch	5. Make flashcards
6. count	6. Make a word search puzzle
7. round	
8. out	What other ways to learn these words can you think of? Write them down!
9. shout	_____
10. north	_____
11. south	_____
12. east	
13. west	
14. globe	
15. robe	

Figure 1. An example of a classroom activity that requires planning processing.

conclusion

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Feifer Assessment of Reading (FAR)

➤ Strategy use leads to better scores

Silent Reading Fluency: Text Planning

➤ 2 passages and sets of comprehension questions based on grade level; 60 seconds to read each passage

- Story is removed before asking questions.

literal from story (**Text**)

inferential from story (**Text**)

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Far Word Recall: Word Planning

PK-Grade 2

Item	Trial 2: Bicycle words	Trial 2: Musical instruments
1 chain	chain <input type="checkbox"/> R	drum <input type="checkbox"/> R
2 drum	<input type="checkbox"/>	guitar <input type="checkbox"/> R
3 pepper	wheel <input type="checkbox"/> R	trumpet <input type="checkbox"/> R
4 wheel	<input type="checkbox"/>	34a piano <input type="checkbox"/> R
5 guitar	brake <input type="checkbox"/> R	
6 celery	<input type="checkbox"/>	
7 brake	34a hand/feet <input type="checkbox"/> R	
8 trumpet		
9 tomato		

Grade 3a

Item	Trial 2: Fruits and vegetables	Trial 2: Musical instruments
1 chain	pepper <input type="checkbox"/> R	
2 drum	<input type="checkbox"/>	
3 pepper	celery <input type="checkbox"/> R	
4 wheel	<input type="checkbox"/>	
5 guitar	tomato <input type="checkbox"/> R	
6 celery	<input type="checkbox"/>	
7 brake	34a carrot <input type="checkbox"/> R	
8 trumpet		
9 tomato		
10 hand/feet		
11 piano		
12 carrot		

To calculate the Word Recall total, double the Trial 1 and Trial 2 numbers in the appropriate space below. Double the number correct and record this value in the space provided.

Trial 1	Trial 2	Word Recall (WR) total
Number correct	Repetitions	
Intrusions	Intrusions	

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- Conclusions



Executive Function Behaviors, Intelligence, and Achievement test scores

Conclusion

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EF, WISC-IV, CAS, Achievement

- Data from Sam Goldstein’s evaluation center in Salt Lake City, UT
- Children given the WISC-IV (N = 43), CAS (N = 62), and the WJIII ach

Table 8.26. Demographic Characteristics of the CAS, WISC-IV, and WJ III ACH Validity Samples

Demographic	Sample						
	CAS		WISC-IV		WJ III ACH		
	N	%	N	%	N	%	
Gender	Male	38	61.3	29	67.4	36	62.1
	Female	24	38.7	14	32.6	22	37.9
Race/Ethnic Group	Hispanic	1	1.6	1	2.3	1	1.7
	Asian	2	3.2	2	4.7	2	3.4
	White	55	88.7	38	88.4	52	89.7
	Other	4	6.5	2	4.7	3	5.2
Parental Education Level	High school diploma or less	1	1.6	0	0.0	1	1.7
	Some college or associate's degree	21	33.9	12	27.9	18	31.0
	Bachelor's degree or higher	36	58.1	26	60.5	34	58.7
	Missing information	4	6.5	5	11.6	5	8.6
Diagnostic or Educational Group	ADHD	24	38.7	15	34.9	20	34.5
	Anxiety	15	24.2	9	20.9	14	24.1
	ASD	7	11.3	5	11.6	7	12.1
	LD	3	4.8	3	7.0	3	5.2
	Mood	4	6.5	3	7.0	5	8.6
	Other	9	14.4	8	18.6	9	15.5
Total	62	100.0	43	100.0	58	100.0	
Age M (SD)	10.4 (2.9)		10.2 (2.6)		10.5 (2.7)		

Note. ADHD = Attention-Deficit/Hyperactivity Disorder; Anxiety = Anxiety Disorder; ASD = Autism Spectrum Disorder; LD = Learning Disorder; Mood = Mood Disorder.

Conclusion

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EF Behaviors (CEFI) & CAS

	CAS				
	FS	Plan	Sim	Att	Suc
CEFI					
Full Scale	.45	.49	.43	.37	.32

	WISC-IV				
	FS	VC	PR	WM	PS
CEFI					
Full Scale	.39	.44	.27	.30	.34

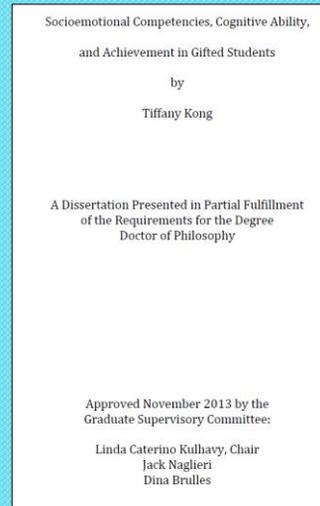
WJ-III Achievement Tests					
CEFI Scales	Total	Broad	Broad	Broad	Median
		Reading	Math	Written Language	
Full Scale	.51	.48	.49	.47	.49

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Kong (2013): IQ, SEL & Achievement

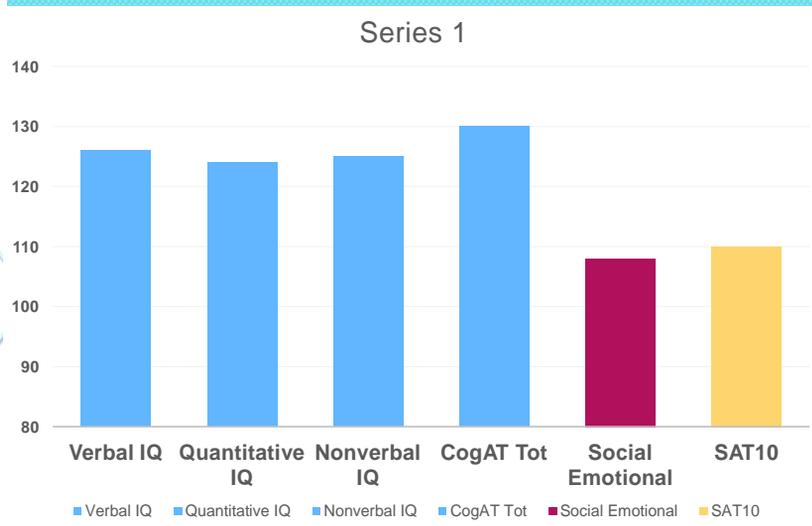
- Tiffany Kong studied CogAT, DESSA, and achievement scores for 276 elementary students grades K-8
- All gifted based on scores on verbal, quantitative, or nonverbal test scores at least 97th percentile



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Ability, Social Emotional & Skills



conclusion

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Kong (2013): IQ, SEL & Achievement

- DESSA Total correlated .44 and CogAT Total correlated .36 with Total Achievement (reading, math, language)
 - A clearer picture of the relationships between IQ (CogAT) and SEL (DESSA) with achievement was obtained from hierarchical regression analysis...

conclusion

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Kong (2013) SEL Predicts Beyond IQ (p. 44)

DESSA predicted reading, language and math scores over IQ (CogAt) scores

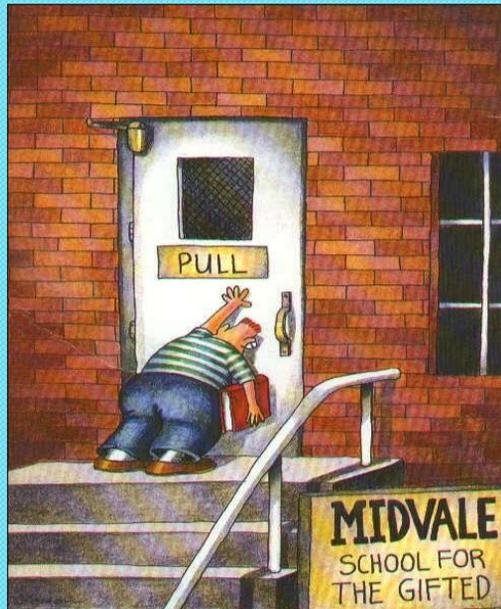
Relations between Cognitive Ability, Socioemotional Competency, and Achievement Variables

Hierarchical regression analyses were conducted to determine which scales and subtests predicted the most variance in the dependent achievement variables. Composite CogAT scores were not found to significantly predict composite achievement, $R^2\Delta = .03$, $F(1, 121) = 3.27$, $p > .05$, reading, language, or math scores over-and-above the DESSA Total scores (Table 11). On the other hand, the DESSA Total scores significantly predicted composite achievement, $R^2\Delta = .05$, $F(1, 121) = 6.99$, $p < .05$; language scores, $R^2\Delta = .03$, $F(1, 121) = 4.26$, $p < .05$; and math scores, $R^2\Delta = .05$, $F(1, 121) = 6.09$, $p < .05$, over-and-above the composite CogAT scores.

conclusion

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POOR PLANNING



conclusion

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Take Away Messages

- EF behaviors are significantly correlated with scores from a nationally normed test of academic skills (WJ-III)
- EF behaviors are significantly correlated with all four PASS scales
- EF behaviors are mostly correlated with WISC-IV Verbal scale which requires a lot of knowledge

conclusion

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Sex Differences in Executive Function

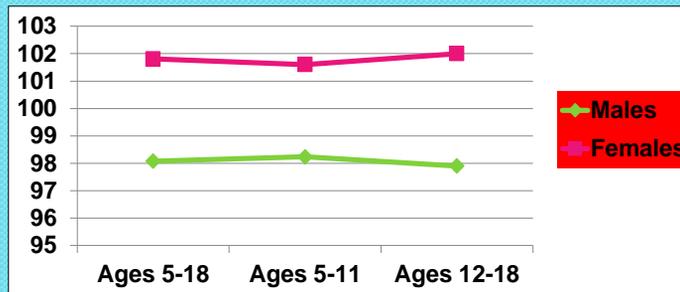
conclusion

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CEFI Sex Differences: Parent Raters

➤ Girls are Smarter than Boys

Parents	N	Mn	SD	N	Mn	SD	ES
Ages 5-18	700	98.1	14.9	699	101.8	15.0	-0.25
Ages 5-11	350	98.2	14.3	349	101.6	15.6	-0.22
Ages 12-18	350	97.9	15.4	350	102.0	14.4	-0.28



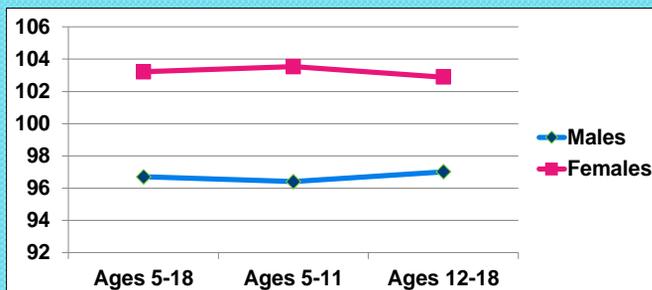
conclusion

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CEFI Sex Differences: Teacher Raters

➤ Girls are Smarter than Boys

Teachers	N	Mn	SD	N	Mn	SD	ES
Ages 5-18	700	96.7	14.4	700	103.2	15.0	-0.44
Ages 5-11	350	96.4	14.5	350	103.5	14.9	-0.49
Ages 12-18	350	97.0	14.4	350	102.9	15.0	-0.40



conclusion

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Sex Differences: Ability

Journal of Educational Psychology
2001, Vol. 93, No. 2, 430–437

Copyright 2001 by the American Psychological Association, Inc.
0022-0663/01/\$5.00 DOI: 10.1037/0022-0663.93.2.430

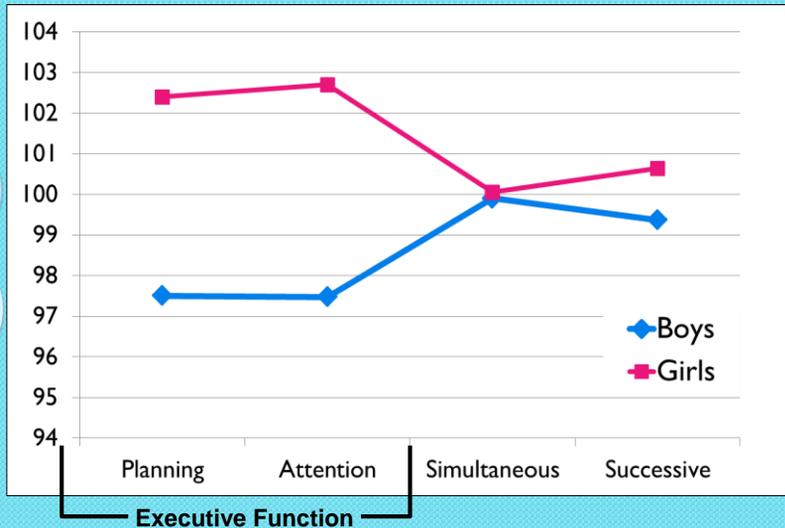
Gender Differences in Planning, Attention, Simultaneous, and Successive (PASS) Cognitive Processes and Achievement

Jack A. Naglieri
George Mason University

Johannes Rojahn
Ohio State University

Gender differences in ability and achievement have been studied for some time and have been conceptualized along verbal, quantitative, and visual-spatial dimensions. Researchers recently have called for a theory-based approach to studying these differences. This study examined 1,100 boys and 1,100 girls who matched the U.S. population using the Planning, Attention, Simultaneous, Successive (PASS) cognitive-processing theory, built on the neuropsychological work of A. R. Luria (1973). Girls outperformed boys on the Planning and Attention scales of the Cognitive Assessment System by about 5 points ($d = .30$ and $.35$, respectively). Gender differences were also found for a subsample of 1,266 children on the Woodcock-Johnson Revised Tests of Achievement Proofing ($d = .33$), Letter-Word Identification ($d = .22$), and Dictation ($d = .22$). The results illustrate that the PASS theory offers a useful way to examine gender differences in cognitive performance.

Sex Differences: Ability



Conclusion

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Sex Differences: Social Emotional

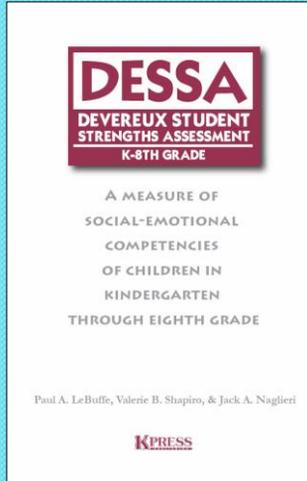


TABLE 2.6
Means, SDs, Ns, and d-ratios for DESSA T-Scores by Gender

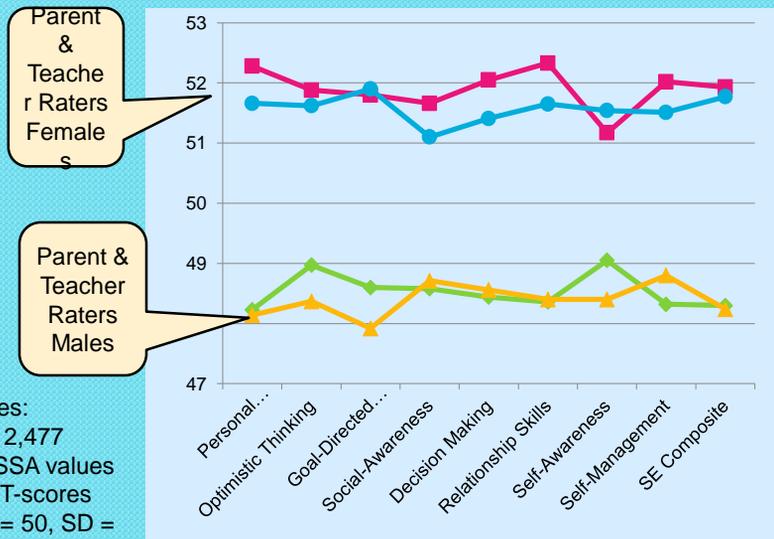
	Males			Male Female d-ratio	Females		
	Mean	SD	n		Mean	SD	n
TEACHER RATERS							
Personal Responsibility	48.23	9.98	631	-0.42	52.28	9.30	611
Optimistic Thinking	48.97	10.14	627	-0.30	51.88	9.47	612
Goal-Directed Behavior	48.60	10.05	631	-0.33	51.80	9.38	611
Social-Awareness	48.58	10.13	630	-0.31	51.66	9.64	612
Decision Making	48.44	10.08	631	-0.37	52.05	9.32	612
Relationship Skills	48.36	10.04	630	-0.41	52.33	9.30	612
Self-Awareness	49.05	10.28	631	-0.22	51.17	9.36	611
Self-Management	48.32	10.02	631	-0.39	52.02	9.18	612
Social-Emotional Composite	48.30	10.09	625	-0.38	51.93	9.02	609
PARENT RATERS							
Personal Responsibility	48.14	9.52	602	-0.36	51.66	9.87	641
Optimistic Thinking	48.37	9.86	602	-0.33	51.62	9.82	641
Goal-Directed Behavior	47.92	9.51	602	-0.41	51.90	9.96	641
Social-Awareness	48.71	9.75	602	-0.25	51.10	9.71	641
Decision Making	48.56	9.76	602	-0.29	51.41	9.62	641
Relationship Skills	48.40	9.72	602	-0.33	51.65	9.90	641
Self-Awareness	48.40	10.03	602	-0.32	51.54	9.51	641
Self-Management	48.80	9.98	602	-0.27	51.51	9.94	641
Social-Emotional Composite	48.24	9.51	602	-0.37	51.77	9.60	641

Devereux Elementary Student Strength Assessment (DESSA, LeBuffe Shapiro & Naglieri, 2009)

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Sex Differences: Social Emotional



Notes:
N = 2,477
DESSA values
are T-scores
(Mn= 50, SD =
10).

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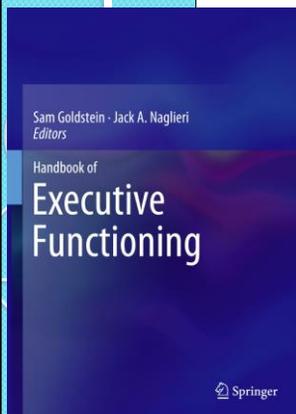
Presentation Outline

- Comprehensive Model of EF
 - Historical Perspective
 - Definitions of Executive Function
- EF - Behavior
- EF - Ability (an intelligence)
- EF - Social Emotional Skills
- EF - Academic performance
- Research about EF as ability, behavior, and SE
- **Think Smart!** -- EF Skills in the Classroom
 - More lesson plans for improving components of EF
- Conclusions

conclusion

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Kryza Practical EF Instruction



Practical Strategies for Developing Executive Functioning Skills for ALL Learners in the Differentiated Classroom

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Kathleen Kryza

It's the first week of school for Alicia, a middle school teacher in a large school district in Michigan. She's been prepping for the first days of school for weeks, getting her room ready, and planning lessons. Last week she attended staff development sessions to learn about the new district and state initiatives and mandates that must be followed this year. Starting tomorrow, she will be immersed for the next 180 school days with a full day's schedule of three different preps—seven 50-minute classes with at least 32 students in each class. She can't imagine adding one more thing to her already overfull "To Do" list. But over the summer, Alicia read a book on teaching executive functioning skills to special needs learners. She really sees the value in teaching these important skills to her most at-risk students, but when can she possibly find time to do this? And how?

Alicia, like many teachers, understands the importance of developing executive functioning skills in her students, but given the full schedule of required academic content she needs to teach,

According to Judy Willis, a neurologist turned middle school teacher and international educational consultant, "We can identify the practices that benefit all learners by looking at the skills

Intentional and Transparent

- Intentional: YOU Know why you're doing what you're doing.
- Transparent - THEY know why you're doing what you're doing.



conclusion

Why Intentional and Transparent?

- The human brain responds to knowing **WHY**.
- Teach **WITH** your students, not AT them.
- Teach kids **HOW** to learn is as important as teaching them **WHAT** to learn.



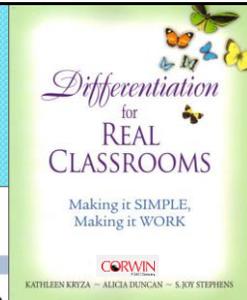
conclusion

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Kryza et al (2011)

Intentional and Transparent

- YOU know WHY you are teaching what you are teaching (Intentional).
- STUDENTS know why they are learning what they are learning (Transparent).
- Talk the talk! Tell students:
 - What they are learning
 - Why it's important to learn
 - What strategies grow effective learners
 - Reflect on learning *with* your students
 - Notice and name how they learn and what strategies help them win the learning game.



conclusion

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Kryza et al (2011)

Winning Formula for Success in Your Co-Taught Classroom

Mindsets plus **Skill Sets** equals **RESULTS!**



conclusion

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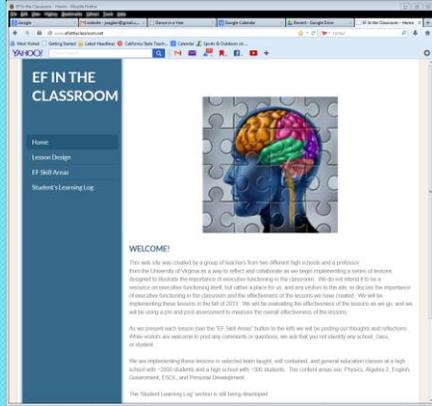
EF Lessons for High School

conclusion 139

Other Lessons from www.efintheclassroom.net

www.Efintheclassroom.net

Research support?



WELCOME!

This web site was created by a group of teachers from five different high schools and a professor from the University of Virginia in a way to reflect and collaborate as we began implementing a series of lessons designed to address the requirements of standards belonging to the Common Core. We do not intend for this a resource on our own learning but, rather a place for us, and any others to the site, to discuss the importance of research supporting the classroom and the effectiveness of the lessons we have created. We will be implementing these lessons in the fall of 2015. We will be measuring the effectiveness of the lessons as we go, and we will be using a pre and post assessment to measure the overall effectiveness of the lessons.

As we present each lesson (see the "EF Skill Areas" button to the left) we will be posting our thoughts and reflections. Other visitors are welcome to post any comments or questions, we will find you will identify any school, state, or student.

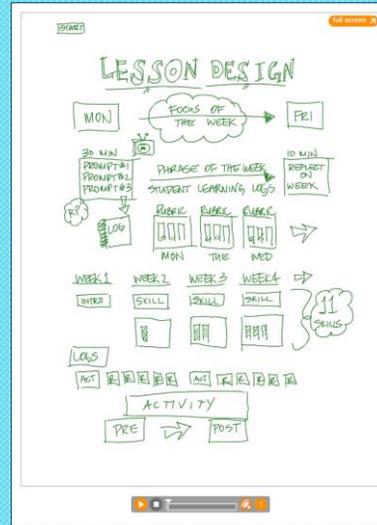
We are implementing these lessons in selected STEM, well combined, and general education classes at a high school with 2000 students and a high school with 1000 students. The content areas are Physics, Algebra 2, English, Government, ESOL, and Personal Development.

The "Student Learning Log" section is still being developed.

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Structure of the lessons

- Each topic is discussed for one week
- Monday – class lesson
- Tues-Thurs reminders
- Friday – class reflection



conclusion

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EF Lesson Plan Themes

- Attention
- Flexibility
- Inhibition
- Initiation
- Self-Monitoring
- Working Memory
- Organization
- Planning
- Emotional Regulation

conclusion

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Efintheclassroom.net

Planning Lesson

Phrase of the week: What is your plan?

<http://www.youtube.com/watch?v=bQLCZOG202k>

1. What had to happen so that the people could dance together in this video?
2. What are the parts of a good plan?
3. How do you know if a plan is any good?
4. What should you do if a plan isn't working?
5. How do we use planning in this class?

Go to student learning log and create a plan for the week.

conclusion

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Planning Lesson Student responses

- Q: What would you have to plan out?
 - They had to learn the dance steps (knowledge)
 - Someone had to start dancing (initiation)
 - Permission from train station (planning)
- Q: What are the parts of a good plan?
 - Think of possible problems (strategy generation)
 - Organize the dance (organization)
 - Practice the dance steps (initiation)
 - Have a good idea of what to do (knowledge)

conclusion

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Planning Lesson Student responses

- Q3: How do you know if a plan is any good?
 - Put the plan in action and see if it works (self-monitoring)
 - Give it a try (perhaps learn by failing)
- 1. Q4: What should you do if a plan isn't working?
 1. Fix it. (self-correction)
 2. Go home ! (a bad plan)

conclusion

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Planning Lesson Student responses

- Q5: How do you use planning in this class?
1. We don't plan in this class
 2. Mrs. XXX does all the planning in this class so you don't have to think about planning
- How might students react to being told that now they have to think and planning?
- Like the Seinfeld video

conclusion

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This Planning Lesson

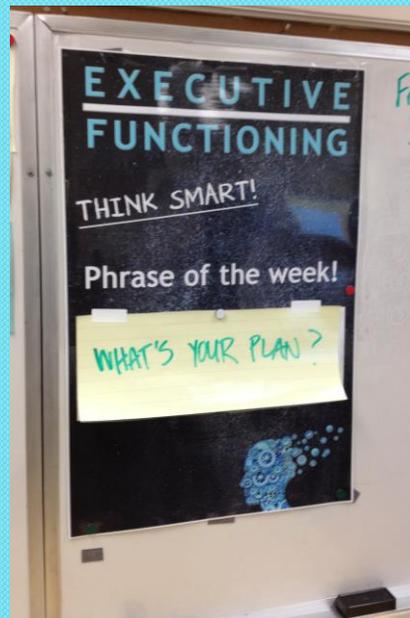
- This lesson brings to light the important distinction between planning over a long time (what was just shown) and real time planning

conclusion

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EF Instruction

- We use posters like this one to remind the students of the importance of **PLANNING**



conclusion

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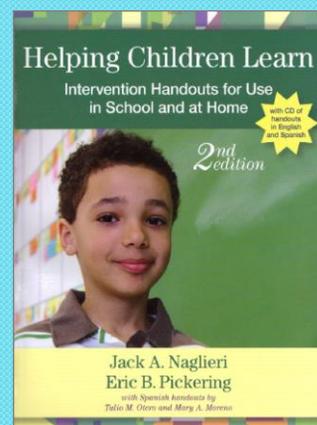
Does teaching students to use EF influence school performance?

conclusion

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Encourage Planning

- Helping Children Learn Intervention Handouts for Use in School and at Home, *Second Edition*
By Jack A. Naglieri, Ph.D., & Eric B. Pickering, Ph.D.,
- Spanish handouts by Tulio Otero, Ph.D., & Mary Moreno, Ph.D.



conclusion

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Step 1 – Talk with Students

How to Be Smart: Planning

When we say people are smart, we usually mean that they know a lot of information. But being smart also means that someone has a lot of ability to learn new things. Being smart at learning new things includes knowing and using your *thinking abilities*. There are ways you can use your abilities *better* when you are learning.

What Does Being Smart Mean?

One ability that is very important is called *Planning*. The ability to *plan* helps you figure out *how to do things*. When you don't know how to solve a problem, using Planning ability will help you figure out how to do it. This ability also helps you control what you think and do. It helps you to stop before doing something you shouldn't do. Planning ability is what helps you wait until the time is right to act. It also helps you make good decisions about what to say and what to do.

Step 1 – Talk with Students

How Can You Be Smarter?

You can be smarter if you PLAN before doing things. Sometimes people say, "Look before you leap," "Plan your work and work your plan," or "Stop and think." These sayings are about using the ability to plan. When you stop and think about *how* to study, you are using your ability to plan.

You will be able to do more if you remember to use a plan. An easy way to remember to use a plan is to look at the picture "Think smart and use a plan!" (Figure 1). You should always use a plan for reading, vocabulary, spelling, writing, math problem solving, and science.

Do you have a favorite plan for learning spelling words? Do you use flashcards or go on the Internet to learn? Do you ask the teacher or another student for help? You can learn more by using a plan for studying that works best for you.

Think smart and use a plan!



It is smart to have a plan for doing all schoolwork. When you read, you should have a plan. One plan is to look at the questions you have to answer about the story first. Then read the story to find the answers. Another plan is to make a picture of what you read so that you can see all the parts of the story. When you write you should also have a plan. Students who are good at writing plan and organize their thoughts first. Then they think about what they are doing as they write. Using a plan is a good way to be smarter about your work!

Planning

Planning Facilitation for Math Calculation

Math calculation is a complex activity that involves recalling basic math facts, following procedures, working carefully, and checking one's work. Math calculation requires a careful (i.e., planful) approach to follow all of the necessary steps. Children who are good at math calculation can move on to more difficult math concepts and problem solving with greater ease than those who are having problems in this area. For children who have trouble with math calculation, a technique that helps them approach the task planfully is likely to be useful. Planning facilitation is such a technique.

Planning facilitation helps students develop useful strategies to carefully complete math problems through discussion and shared discovery. It encourages students to think about how they solve problems, rather than just think about whether their answers are correct. This helps them develop careful ways of doing math.

How to Teach Planning Facilitation

Planning facilitation is provided in three 10-minute time periods: 1) 10 minutes of math, 2) 10 minutes of discussion, and 3) 10 more minutes of math. These steps can be described in more detail:

Step 1: The teacher should provide math worksheets for the students to complete in the first 10-minute session. This gives the children exposure to the problems and ways to solve them. The teacher gives each child a worksheet and says, "Here is a math worksheet for you to do. Please try to get as many of the problems correct as you can. You will have 10 minutes." Slight variations on this instruction are okay, but do not give any additional information.

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A Cognitive Strategy Instruction to Improve Math Calculation for Children With ADHD and LD: A Randomized Controlled Study

HAMMILL INSTITUTE
ON DISABILITIES

Journal of Learning Disabilities
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DOI: 10.1177/0022219410391190
<http://journaloflearningdisabilities.sagepub.com>



Jackie S. Iseman¹ and Jack A. Naglieri¹

Abstract

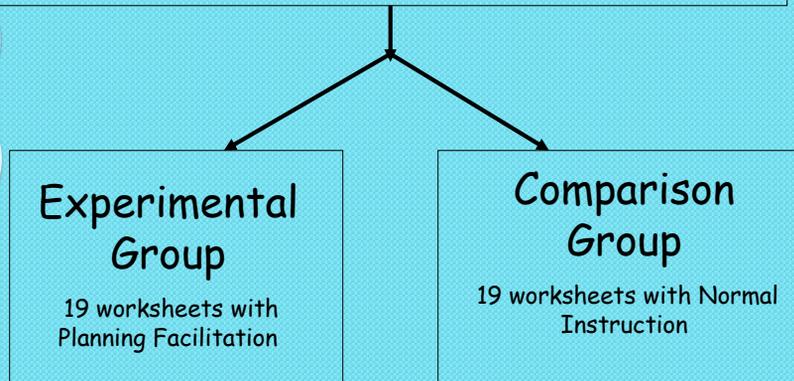
The authors examined the effectiveness of cognitive strategy instruction (Successive) given by special education teachers to students with ADHD. The experimental group were exposed to a brief cognitive strategy instruction that focused on development and application of effective planning for mathematical computation. Standardized tests of cognitive processes (Wechsler Intelligence Scale) and math worksheets completed throughout the experimental period. At 1 year follow-up, the experimental group continued to outperform the control group. Large pre-post effect sizes were found for students in the experimental group (0.85 and 0.26), Math Fluency (1.17 and 0.09), and Numerical Operations (1.17 and 0.09). At 1 year follow-up, the experimental group continued to outperform the control group. Students with ADHD evidenced greater improvement in math worksheets when provided the PASS-based cognitive strategy instruction.



Design of the Study

Experimental and Comparison Groups

7 worksheets with Normal Instruction



conclusion

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Instructional Sessions

- Math lessons were organized into “instructional sessions” delivered over 13 consecutive days
- Each instructional session was 30-40 minutes
- Each instructional session was comprised of three segments as shown below

10 minutes	10-20 minutes	10 minutes
10 minute math worksheet	Planning Facilitation or Normal Instruction	10 minute math worksheet

conclusion

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Normal Instruction and Planning Facilitation Sessions

- ▶ Normal Instruction
 - 10 minute math worksheet
 - 10 - 20 of math instruction
 - 10 minute math worksheet
- ▶ Planning Facilitation
 - 10 minute math worksheet
 - 10 minutes of planning facilitation
 - 10 minute math worksheet

conclusion

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Planning Strategy Instruction

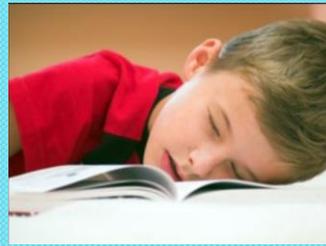
- ▶ Teachers facilitated discussions to help students become more self-reflective about use of strategies
- ▶ Teachers asked questions like:
 - What was your goal?
 - Where did you start the worksheet?
 - What strategies did you use?
 - How did the strategy help you reach your goal?
 - What will you do again next time?
 - What other strategies will you use next time?

conclusion

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Student Plans

- “My goal was to do all of the easy problems on every page first, then do the others.”
- “I do the problems I know, then I check my work.”
- “I do them (the algebra) by figuring out what I can put in for X to make the problem work.”
- “I did all the problems in the brain-dead zone first.”
- “I try not to fall asleep.”



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Student Strategies

Iseman and Naglieri

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Table 3. Students' Comments During Planning Facilitation Sessions

Goals

- “My goal was to do all of the easy problems on every page first, then do the others.”
- “To get as many correct as I can.”
- “To get as many right as quickly as possible.”
- “To take time and make sure I get them correct.”

Starting place

- “I started on the first one.”
- “I skipped around.”
- “I do the easy ones first.”
- “I look at the type of problem and the number of steps and decide which problems to do first.”

Overall plan

- “I did all the easy problems on a page and went onto the next one.”
- “I do all the addition first, then the easy minus, and then I move onto the harder ones.”
- “I do the problems I know, then I check my work.”

Specific strategies

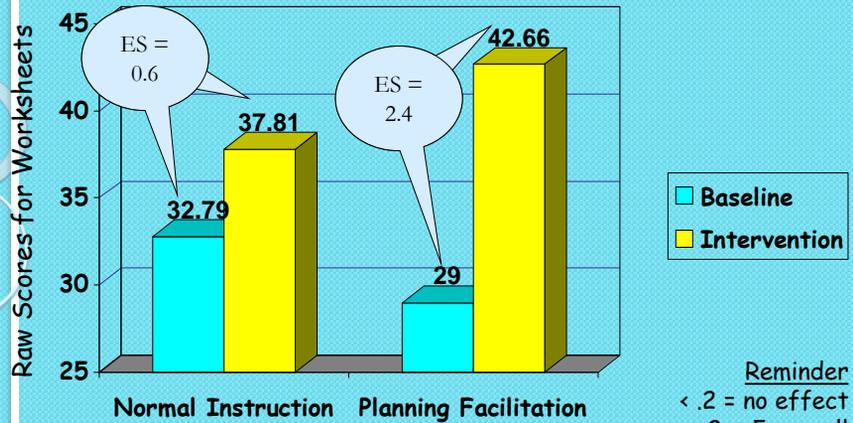
- “I simplify fractions first.”
- “Skip the longer multiplication questions.”
- “The problems that have lots of steps take more time, so I skip them.”
- “I do them [the algebra] by figuring out what I can put in for X to make the problem work.”
- “I draw lines so I don't get my columns confused [on the multiplication].”
- “I stopped drawing lines because it slowed me down.”
- “If a problem is taking a long time I skip it and come back to it if I have time.”
- “I did the ones that take the least time.”
- “Remember that anything times 0 is 0.”

Noticing patterns in the worksheets

- “I did all the problems in the brain-dead zone first.”
- “I started in the middle of the page, the problems on top take longer.”
- “Next time I'll skip the hard multiplication at the top of the first page.”

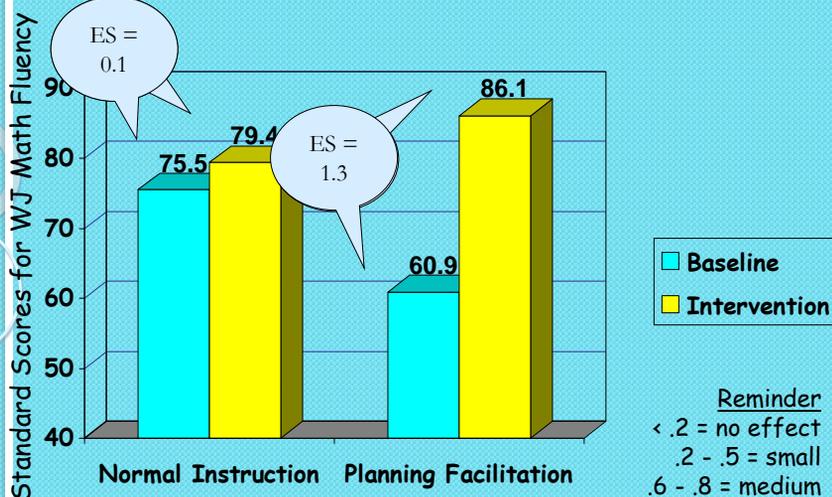
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Worksheet Means and Effect Sizes for the Students with ADHD



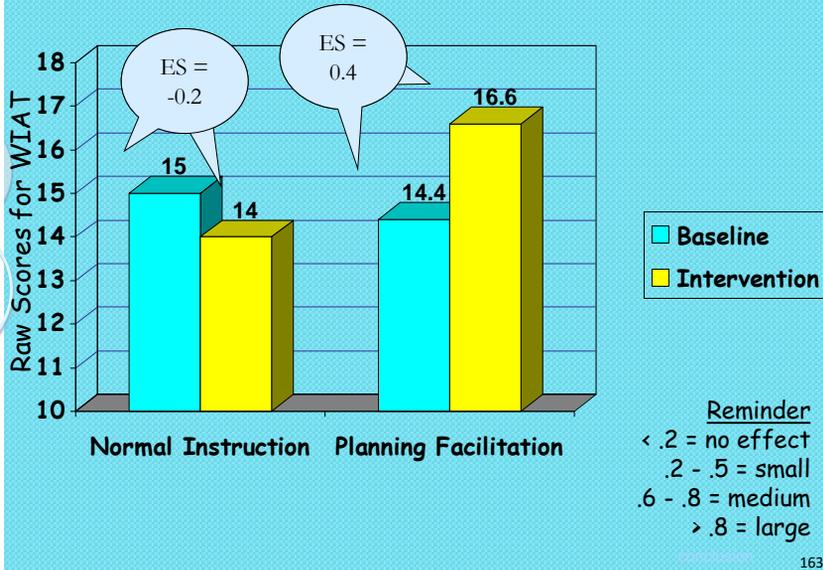
Reminder
 < .2 = no effect
 .2 - .5 = small
 .6 - .8 = medium
 > .8 = large

WJ Math Fluency Means and Effect Sizes for the Students with ADHD



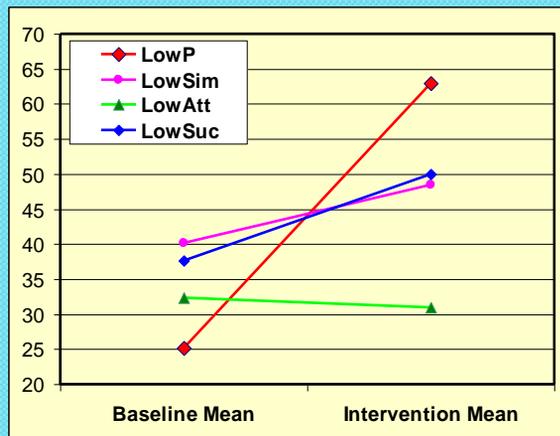
Reminder
 < .2 = no effect
 .2 - .5 = small
 .6 - .8 = medium
 > .8 = large

WIAT Numerical Operation Means and Effect Sizes for Students with ADHD



Iseman (2005)

- Baseline Intervention means by PASS profile
- Different response to the same intervention



One Year Follow-up

At 1-year follow-up, 27 of the students were retested on the WJ-III ACH Math Fluency subtest as part of the school's typical yearly evaluation of students. This group included 14 students from the comparison group and 13 students from the experimental group. The results indicated that the improvement of students in the experimental group ($M = 16.08$, $SD = 19$, $d = 0.85$) was significantly greater than the improvement of students in the comparison group ($M = 3.21$, $SD = 18.21$, $d = 0.09$).

conclusion

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Instructional Implications

- Planning Strategy Instruction is easily implemented in the classroom and can be used to improve Executive Functioning
- The method yields substantial results within a minimal of time (10 half-hour sessions over 10 days)
- Planning Strategy Instruction can be applied in math as well as other content areas (e.g., reading comprehension)

conclusion

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Presentation Outline

- Comprehensive Model of EF
 - Historical Perspective
 - Definitions of Executive Function
- EF as Behavior
- EF as an Ability (an intelligence)
- EF as Social Emotional Skills
- Research about EF as ability, behavior, and SE
- **Think Smart!** -- EF Skills in the Classroom
 - More lesson plans for improving components of EF
-  Conclusions

conclusion

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Conclusions

- The concept of EF is evolving
- CEFI results indicate that when measured using observable behaviors the term Executive Function is supported
- CEFI provides a well normed measure of EF that has demonstrated reliability & validity
- There is evidence that children can better use EF and improve achievement and behavior

conclusion

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Conclusions

- The teacher's role is to give the student knowledge of facts ***and*** to encourage the use of Executive Function
- When we give students the responsibility to figure out how to do things we teach them to **THINK SMART! and use EF**
- **This is the gift of smarter thinking**
- **This is a gift of optimism**
- **This is a gift for life success**
- **EF is about LIFE not just school**