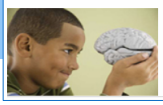

14th Annual School Neuropsychology Conference
April 1-3, 2019

Using the Discrepancy Consistency Method for SLD Identification: Application of the CAS2 with FAR and FAM

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Copies of this and other presentations are available on my web site as are articles, 10-minute solutions and PASS score analyzers

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www.schoolneuropsychpress.com

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Disclosures

- We will be speaking about publications we have authored…

4

4

Think Partners → Deeper Learning

- **Find a small group of 2-3 people**
  - **First introduce yourself**
  - **Tell something interesting about yourself**
  - **Why this session?**
  - **Your thoughts…**

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Topical Outline

- Introduction
- Definition of SLD
- Measure "basic psychological process" with CAS2
- Measure reading and math with the FAR and FAM
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  - Reading Disabilities
    - Case study Paul (Successive processing disorder)
    - Case of Nelson (Simultaneous processing disorder)
  - Math Disabilities
    - Case study Kenny (Planning and Simultaneous)
    - Case study Jackson- (Planning and Attention)
  - CAS2 Case Study Workbook
- Conclusions

6

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BIG Picture & Today's Goals

- What do we want from our tests of cognition?
  - A general picture: Average, Gifted, Intellectual Disability
  - A more detailed description of student strengths and weaknesses that helps with diagnostic decision making.
  - A way to relate neurocognitive functioning to academic skills
  - Intervention options based on cognition and skills
  - A fair and equitable way to assess ability for students who are ELL, or from diverse populations
- Today you will learn how to achieve these goals, but first a look at the two fundamental problems with our ability tests – content and theory

7

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Introduction

- Interest in intelligence and instruction
- Ex

8

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Traditional IQ and Achievement Tests

- 1975 Charles Champagne Elementary, Bethpage, NY
- Typical assessment
  - Draw A Person
  - Bender-Gestalt
  - WISC
  - Peabody Individual Achievement Test
  - Sentence Completion Test
  - Developmental history
  - other measures as needed

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Traditional IQ and Achievement Tests

- When I started working as a school psychologist in 1975…I noticed that parts of the WISC were VERY similar to parts of the achievement test I was giving
  - In fact the Peabody Individual Achievement Test (1970) had a General Information and Arithmetic subtests JUST LIKE THE WISC!
- HOW DOES THAT MAKE SENSE?
- WHY DO WE HAVE THIS PROBLEM?

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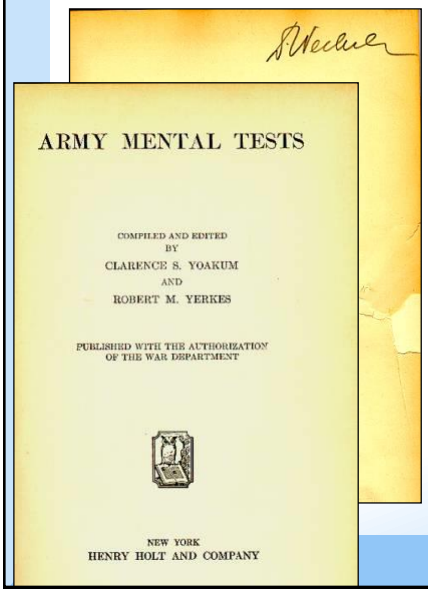
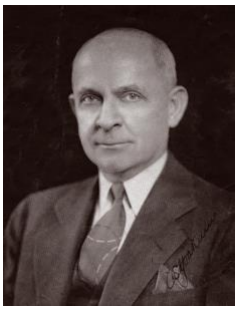
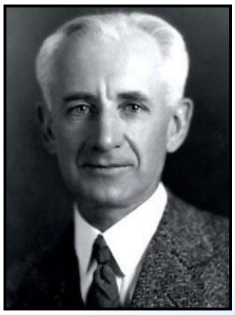
From Alpha/Beta to Wechsler IQ







- Yoakum & Yerkes (1920) summarized the methods used by the military to

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From Alpha/Beta to Wechsler IQ

- Army Alpha
  - Synonym- Antonym
  - Disarranged Sentences
  - Number Series
  - Arithmetic Problems
  - Analogies
  - Information
- Army Beta
  - Maze
  - Cube Imitation
  - Cube Construction
  - Digit Symbol
  - Pictorial Completion
  - Geometrical Construction

Verbal & Quantitative

Nonverbal

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Thinking vs Knowing

- Scales on IQ tests that are confounded by knowledge
  - WISC-V
    - Verbal Comprehension: Vocabulary, Similarities, Information & Comprehension
    - Fluid Reasoning: Figure Weights, Picture Concepts, Arithmetic
  - WJ-IV
    - Comprehension Knowledge: Vocabulary & General Information
    - Fluid Reasoning: Number Series & Concept Formation
    - Auditory Processing: Phonological Processing
  - K-ABC
    - Knowledge / GC: Riddles, Expressive Vocabulary, Verbal Knowledge

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The First IQ TEST: Alpha (Verbal)

1. Bull Durham is the name of	**tobacco**
2. The Mackintosh Red is a kind of	**fruit**
3. The Oliver is a	**typewriter**
4. A passenger locomotive type is the	**Mogul**
5. Stone & Webster are well know	**engineers**
6. The Brooklyn Nationals are called	**Superbas**
7. Pongee is a	**fabric**
8. Country Gentleman is a kind of	**corn**
9. The President during the Spanish War was	**Mckinley**
10. Fatima is a make of	**cigarette**

From: Psychological Examining the United States Army (Yerkes, 1921, p. 213)

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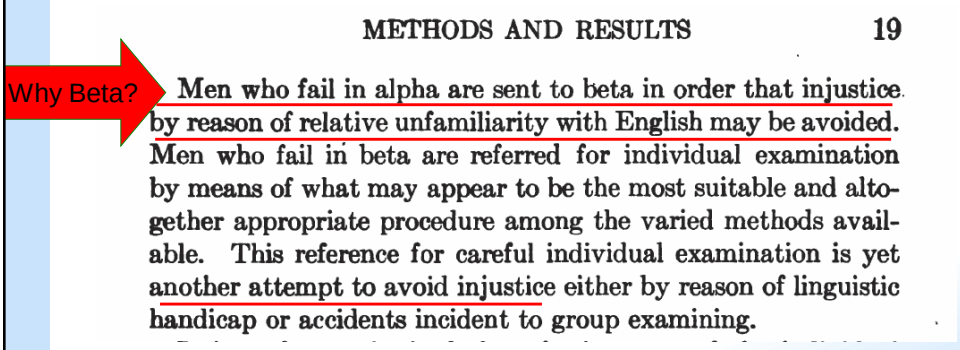
1927 Army Testing (Yoakum & Yerkes)



METHODS AND RESULTS 19

Why Beta?

Men who fail in alpha are sent to beta in order that injustice by reason of relative unfamiliarity with English may be avoided. Men who fail in beta are referred for individual examination by means of what may appear to be the most suitable and altogether appropriate procedure among the varied methods available. This reference for careful individual examination is yet another attempt to avoid injustice either by reason of linguistic handicap or accidents incident to group examining.

Note there is no mention of measuring verbal and nonverbal intelligences – **it was a social justice issue.**

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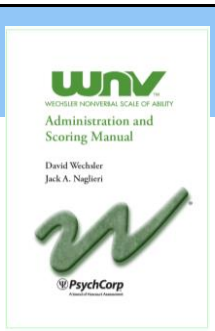
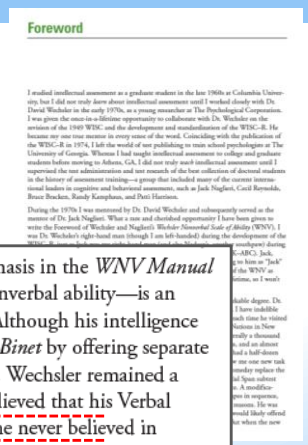
Spearman's *g*





Foreword

Alan S. Kaufman, PhD
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Yale Child Study Center
Yale University School of Medicine

of nonverbal assessment many paces forward. In addition, the emphasis in the *WNV Manual* that the Full Scale measures *general ability nonverbally*—and *not* nonverbal ability—is an important distinction that further ties the WNV to Dr. Wechsler. Although his intelligence tests in the 1930s and 1940s departed from the one-score *Stanford-Binet* by offering separate Verbal and Performance IQs as well as a profile of scaled scores, Dr. Wechsler remained a firm believer in Spearman's *g* theory throughout his lifetime. He believed that his Verbal and Performance Scales represented different ways to access *g*, but he never believed in nonverbal intelligence as being separate from *g*. Rather, he saw the Performance Scale as the most sensible way to measure the general intelligence of people with hearing impairments, language disorders, or limited proficiency in English. And that is precisely what the WNV is intended to do.

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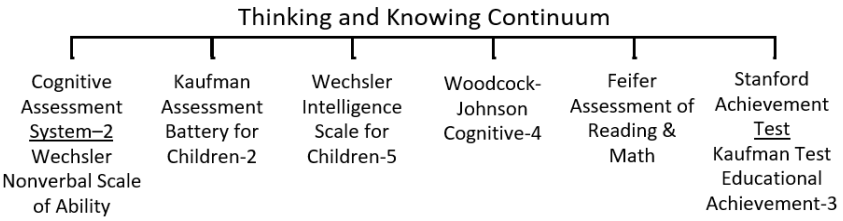
Continuum from Thinking to Knowing

- The obvious connection between educational opportunity and scores on tests of vocabulary and arithmetic in the Wechsler Scales, was noted by Matarazzo (1972)
  - "a man's vocabulary is necessarily influence by his education and cultural opportunities (p. 218)"
  - Referring to the Arithmetic subtest, "its merits are lessened by the fact that it is influenced by education (p. 203)".
- The recognition of the role played by education in tests of intelligence is clearly demonstrated as is the problem it presents.



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Intelligence Tests and Prediction

- DO you need Verbal and Quantitative tests to predict achievement?
- This is a testable question
- But remember that traditional IQ tests have achievement in them, artificially inflating the correlation to academic tests
- PASS tests do not include achievement

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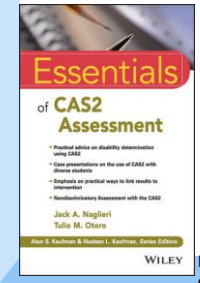
Correlations: We can do better

- Average correlations between IQ Scales with total achievement scores from *Essentials of CAS2 Assessment* Naglieri & Otero (2017)



Correlations Between Ability and Achievement Test Scores			Average Correlation: All Scales	Average Correlation: Scales without achievement
WISC-V	Verbal Comprehension	.74		
WIAT-III	Visual Spatial	.46		
N = 201	Fluid Reasoning	.40		
	Working Memory	.63		
	Processing Speed	.34	.53	.47
WJ-IV COG	Comprehension Knowledge	.50		
WJ-IV ACH	Fluid Reasoning	.71		
N = 825	Auditory Processing	.52		
	Short Term Working Memory	.55		
	Cognitive Processing Speed	.55		
	Long-Term Retrieval	.43		
	Visual Processing	.45	.54	.50
KABC-II	Sequential/Gsm	.43		
WJ-III ACH	Simultaneous/Gv	.41		
N = 167	Learning/Glr	.50		
	Planning/Gf	.59		.48
	Knowledge/GC	.70	.53	
CAS	Planning	.57		
WJ-III ACH	Simultaneous	.67		
N=1,600	Attention	.50		
	Successive	.60		.59

Note: WJ-IV Scales Comp-Know= Vocabulary and General Information; Fluid Reasoning = Number Series and Concept Formation; Auditory Processing = Phonological processing.

Note: All correlations are reported in the ability tests' manuals. Values were averaged within each ability test using Fisher z transformations.

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IT DOESN'T HAVE TO BE SO…

COMPLICATED

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Paul 4th grade

Presenting Concerns: Reading & Solving longer math equations

WISCV Scales	COMPOSITE SCORE	RANGE	PERCENTILE RANK
Verbal Comprehension Index	89	Below Average	23%
Visual Spatial Index	84	Below Average	14%
Fluid Reasoning Index	82	Below Average	12%
Working Memory Index	72	Very Low	3%
Processing Speed Index	76	Very Low	6%
FULL SCALE SCORE	**81**	**Below Average**	**10%**
WIAT III Reading	87	Below Average	19%
WIAT III Math	90	Average	25%
WIAT III Writing	94	Average	34%

Questions: #1 Does Paul qualify for SPED?
#2 Can you write an IEP based upon this data?

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NASP 2011 LD POSITION STATEMENT

NATIONAL ASSOCIATION OF SCHOOL PSYCHOLOGISTS

- Specific learning disabilities are endogenous in nature and are characterized by **neurologically** based deficits in cognitive processesthat interfere with the acquisition of academic skills.
- Specific learning disabilities are **heterogeneous**—there are various types of learning disabilities, and there is no single defining academic or cognitive deficit or characteristic common to all types of specific learning disabilities.
- Relying upon an **ability–achievement** discrepancy as the sole means of identifying children with specific learning disabilities is at odds with scientific research and with best practice (Gresham & Vellutino, 2010).

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California Dyslexia Law

The California "Dyslexia Bill" has two main focuses:

1. AB 1369 text requires an additional section be added to CA Eligibility Criteria for Specific Learning Disability (SLD). This addition, Section 56334, reads: "The State Board of Education shall include "phonological processing" in the description of basic psychological processes in Section 3030 of Title 5 of the California Code of Regulations."
2. The bill calls for the Superintendent of Public Instruction to develop program guidelines for dyslexia to be used to assist teachers and parents to plan, provide, evaluate, and improve educational services to students with dyslexia. These guidelines are to be available to the public in time for implementation in the 2017-18 school year. The Superintendent's guidelines will not change current law nor require the use of any specific curriculum in instruction of students. Instead, they will give guidance for staff in understanding implementation of instructional programs. Further information on the guidelines will be covered later in this document.

As mentioned above, AB1369 requires the addition of "phonological processing" to the "basic psychological processes" in the Eligibility Criteria for Specific Learning Disability (SLD). The bill does not establish a new eligibility category, it simply adds phonological processes to the existing processing areas defined in the current SLD eligibility criteria (CCR Section 56320 § 3030).

Basic Psychological Processes Prior to AB1369	Basic Psychological Processes After AB1369
1. Attention	1. Attention
2. Visual processing	2. Visual processing
3. Auditory processing	3. Auditory processing
4. Sensory-motor skills	4. Sensory-motor skills
5. Cognitive abilities including:	5. Phonological processing
a. Association	6. Cognitive abilities including:
b. Conceptualization	a. Association
c. Expression	b. Conceptualization
	c. Expression

Note: As of Oct. 1, 2016, the addition of phonological processing has not been officially included into the existing California SLD Eligibility Criteria (C.C.R. Title 5). Existing SLD Eligibility Criteria defines SLD as "a disorder in one or more of the basic psychological processes … including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, *dyslexia*, and developmental aphasia"

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Defining Dyslexia

- *"Dyslexia is characterized by difficulties with **accurate** and / or **fluent** word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the **phonological component** of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge."*

- International Dyslexia Association

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Problems with the "*Phonological Deficit*" Model of Reading

1. **Assumes dyslexia is a homogenous condition.**
2. **Does not account for the developmental trajectory of phonological awareness being more significant with younger than older readers (Araujo et al., 2010; Frijters et al., 2011).**
3. **The model fails to account why numerous phonological skills are preserved for disabled readers (Shany & Share, 2011).**
4. **The model suggests that phonological training is the only course of intervention.**
5. **Inconsistent with IDA definition and neuroscience.**

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Is CHC the same as Neuropsychology?

- **CHC aims to comprehensively define and quantify every aspect of cognitive processing. Its ultimate goal is to broaden our definition and perspective of "IQ".**
- **CHC validates its claims through statistical rigor and factor analytic modeling (16 Broad and 70 Narrow abilities).**

- **Neuropsychology is the study of the brain and nervous system.**
  - *** Validates claims through brain imaging and not necessarily through factor analysis.**
  - *** Greater emphasis on frontal lobe functioning (EF) and affective components.**
  - *** Both approaches are attempting to integrate themselves in order to agree on which processes are related solely to the academic skill in question.**

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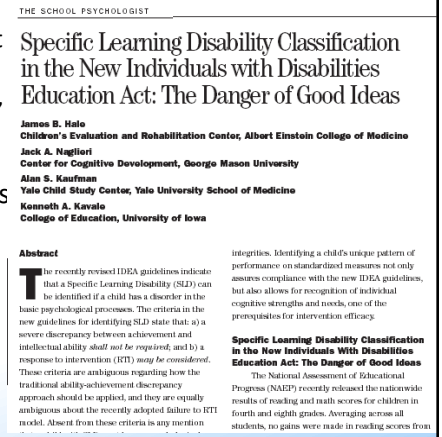
Hale, Naglieri, Kaufman, & Kavale (2004)

- The IDEA definition of SLD is
  - "… a disorder in 1 or more of the basic psychological processes … [that results] in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations."
- Neither the IQ/achievement discrepancy model nor RTI evaluates basic psychology processes
- "Establishing a disorder in the basic psychology processes is *essential* for determining SLD"
- But first we have to define "basic psychology processes"



THE SCHOOL PSYCHOLOGIST

Specific Learning Disability Classification in the New Individuals with Disabilities Education Act: The Danger of Good Ideas

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Jack A. Naglieri
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Abstract

The recently revised IDEA guidelines indicate that a Specific Learning Disability (SLD) can be identified if a child has a disorder in the basic psychological processes. The criteria in the new guidelines for identifying SLD state that: a) a severe discrepancy between achievement and intellectual ability *shall not be required*, and b) a response to intervention (RTI) *may be considered*. These criteria are ambiguous regarding how the traditional ability-achievement discrepancy approach should be applied, and they are equally ambiguous about the recently adopted failure to RTI model. Absent from these criteria is any mention integrities. Identifying a child's unique pattern of performance on standardized measures not only assures compliance with the new IDEA guidelines, but also allows for recognition of individual cognitive strengths and needs, one of the prerequisites for intervention efficacy.

Specific Learning Disability Classification in the New Individuals With Disabilities Education Act: The Danger of Good Ideas

The National Assessment of Educational Progress (NAEP) recently released the nationwide results of reading and math scores for children in fourth and eighth grades. Averaging across all students, no gains were made in reading scores from

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BIG Picture & Today's Goals

- We will merge PASS theory as measured by the CAS2 with the Feifer Assessment of Reading and Feifer Assessment of Math
- Determining if a student has a specific learning disability is founded on the assumption that a 'disorder in basic psychological processes' is related to a specific academic weakness
  - Because the CAS2 and the FAR/FAM are based on the same neurocognitive theory of functioning, then an ideal pairing is achieved
    - THAT is what you get from CAS2 with FAR and FAM

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What all PSW Models Should Have in Common

- Based on a **theory of learning** driven by our knowledge of the brain.
- Be grounded in statistical **reliability** and **validity.**
- Be **culturally fair** and sensitive to students with diverse backgrounds.
- **NEVER** be mechanistic. Use in conjunction with student's background, curriculum exposure, response to previous interventions, and overall social-emotional development to determine a specific learning disability.
- **INFORM, INFORM, INFORM** intervention decision making!!!

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Intelligence as Neurocognitive Abilities

- In Das and Naglieri's first meeting (February 11, 1984) they proposed that cognitive ability was better REinvented as PASS processes so we built the **C**ognitive **A**ssessment **S**ystem (Naglieri & Das, 1997).
- The CAS was the first *test* of its kind to be built on a specific *theory* of brain function not Army Alpha and Beta

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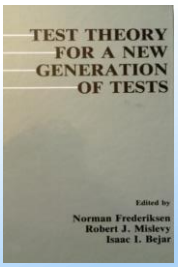
Defining Neurocognitive Abilities

- How did we identify 'basic psychological processes'?
  - We recognized the limitations of developing a theory from factor analysis – "*a research program dominated by factor analyses of test intercorrelations is incapable of producing an explanatory theory of human intelligence*" (Lohman & Ippel, 1993, p. 41)
  - We used research from cognitive and neuropsychology to construct a way to measure basic psychological processes



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Why PASS and CAS2?

- CAS2 is based on a **THEORY** of brain function
  - Luria's concept of the three functional units -> PASS
- We measure basic neurocognitive processes
  - Not Vocabulary, Arithmetic, or other knowledge based subtests
- The test is easily administered and scored (online available)
- PASS theory drives interpretation (not subtests)
- PASS theory has considerable validity:
  - Profiles for different types of SLD for PSW
  - Fair and equitable assessment by race, ethnicity, and language
  - PASS scores and intervention
- We measure thinking (PASS) not knowing (achievement)

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Cognition or Knowledge?

- What does the student have to **know** to complete a task?
  - This is dependent on *instruction*
- How does the student have to **think** to complete a task?
  - This is dependent on the *brain* – ***PASS***
- We must assess ability and achievement separately

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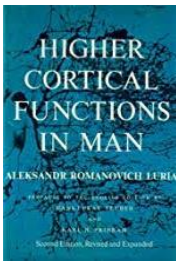
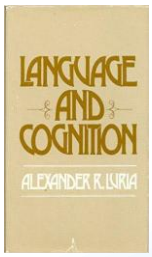
What do we mean by thinking?





- Thinking means brain function
- That means we conceptualize thinking as basic psychological processes related to different brain areas
- What functions do different parts of the brain provide?
- We looked to A. R. Luria for the answers

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PASS Comprehensive System

(Naglieri, Das, & Goldstein, 2014)

For eligibility determination

CAS2 Rating Scale (4 subtests)	**CAS2 Brief** (4 subtests)	**CAS2 Core** (8 subtests)	**CAS2 Extended** (12 subtests)
Total Score Planning Simultaneous Attention Successive	Total Score Planning Simultaneous Attention Successive	Full Scale Planning Simultaneous Attention Successive	Full Scale Planning Simultaneous Attention Successive Supplemental Scales Executive Function Working Memory Verbal / Nonverbal Visual / Auditory

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PASS Neurocognitive Theory

- **P**lanning = THINKING ABOUT HOW YOU DO WHAT YOU DECIDE TO DO
- **A**ttention = BEING ALERT AND RESISTING DISTRACTIONS
- **S**imultaneous = GETTING THE BIG PICTURE
- **S**uccessive = FOLLOWING A SEQUENCE

PASS = 'basic psychological processes'

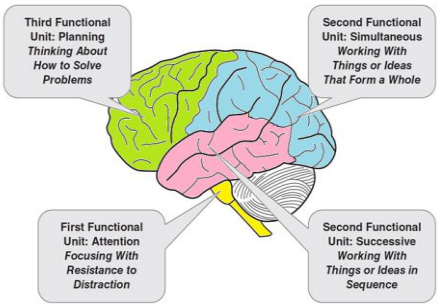

Figure 1.2 Three Functional Units and Associated Brain Structures

From: *Essentials of CAS2 Assessment*. Naglieri & Otero, 2017

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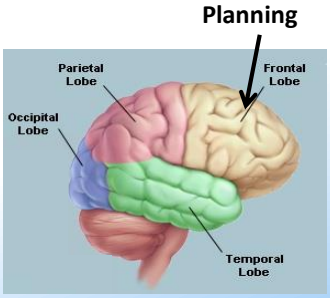
PASS Theory: Planning

- **Planning** is a term used to describe a neurocognitive function similar to metacognition and executive function
  - Planning is needed for setting goals, making decisions, predicting the outcome of one's own and others actions, impulse control, strategy use and retrieval of knowledge
- ***Planning*** helps students make decisions about *how* to solve *any* kind of a problem from academics to social situations and life in general



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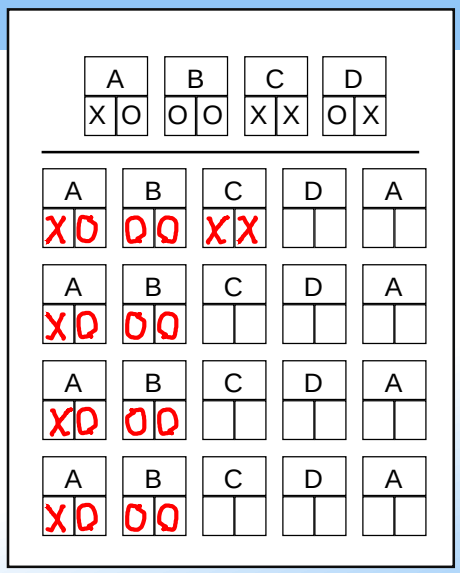
Planned Codes 1

- Child fills in the codes in the empty boxes
- Children are encouraged to think of a good way to complete the page



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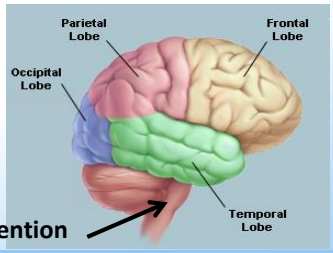
PASS Theory: Attention

- **Attention** is a basic psychological process we use to selectively attend to some stimuli and ignores others
  - Listening, as opposed to hearing
  - focused cognitive activity
  - selective attention
  - resistance to distraction
- Attention provides focus despite distractions in the class and maintenance of effort over time despite continued noises.



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CAS2 Expressive Attention

- The child says the color not the word
- Score is time and number correct

RED	BLUE	GREEN	YELLOW
YELLOW	GREEN	RED	BLUE
RED	YELLOW	YELLOW	GREEN
BLUE	GREEN	RED	BLUE
GREEN	YELLOW	RED	YELLOW

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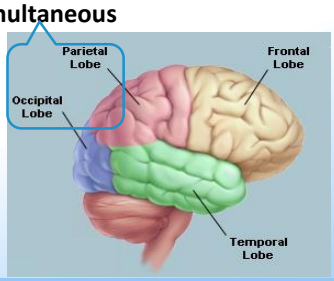
PASS Theory: Simultaneous

- **Simultaneous** processing is used to recognize patterns
  - Stimuli are seen as a whole
  - Each piece must be related to the other
  - Understanding grammar
  - Whole language
  - Seeing word as a whole
  - Verbal concepts
  - Geometry, math word problems
  - Getting the BIG picture
  - Noticing nuance

Simultaneous



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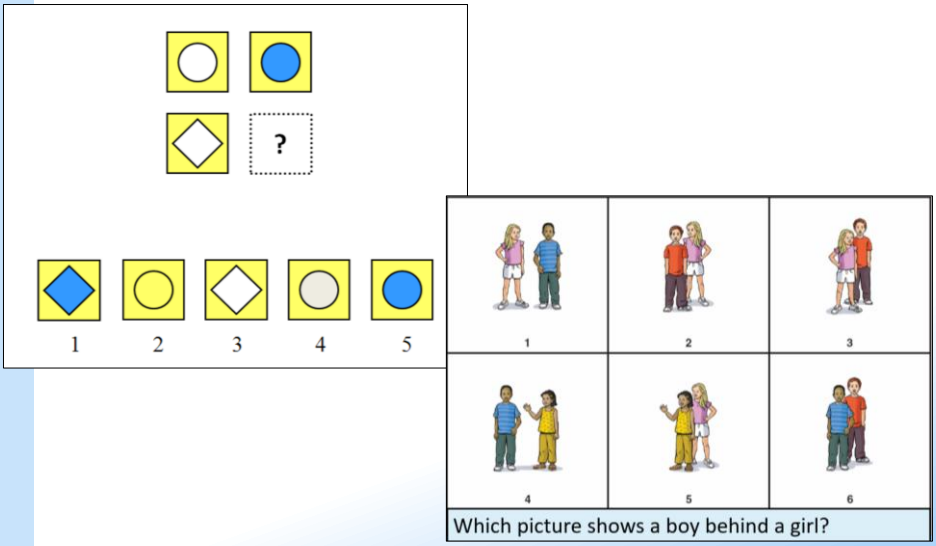
Simultaneous Subtests



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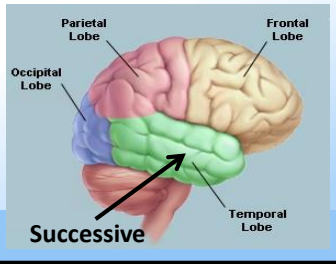
PASS Theory: Successive

- **Successive** processing is used when information is in a specific serial order
  - Remembering the sequence of events in a story
  - Sequence of words, sentences, paragraphs
  - Comprehension of written instructions
  - Understanding the syntax of sentences
  - Decoding words and phonological tasks
  - Letter-sound correspondence
- ***Successive*** helps students sequence movements, recall of things in order and the association of the sounds with letters.



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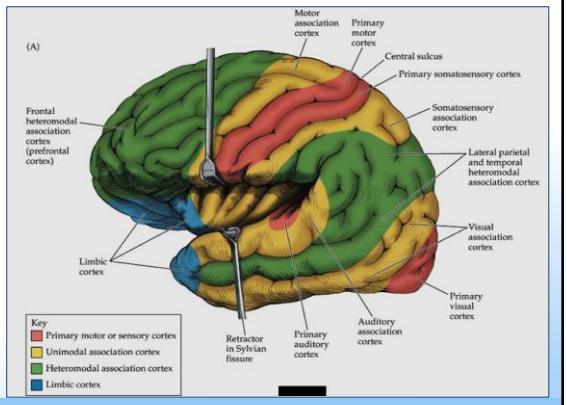
Successive Subtests Across Modalities

- Word Recall
  - Book Shoe Girl Dog Car Man Cow Key
- Visual Digit Span

4 3 8 6 1

- **Heteromodal** association cortex merges information from primary and unimodal association cortices



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PASS, CAS2 and Race Ethnic Differences

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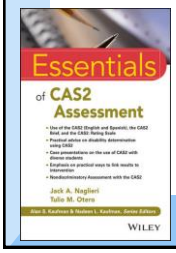
Race Differences

Table 1.6 Standard Score Mean Differences by Race on Traditional and Nontraditional Intelligence Tests

Test	Difference
Traditional IQ Tests	
SB-IV (matched samples)	12.6
WISC-IV (normative sample) WISC-V (normative sample) = 11.6	11.5
WJ-III (normative sample)	10.9
WISC-IV (matched samples) WISC-V (Sex PEL adjusted) = 8.7	10.0
Nontraditional Tests	
K-ABC (normative sample)	7.0
K-ABC (matched samples)	6.1
KABC-II (matched samples)	5.0
CAS2 (normative sample)	6.3
CAS (demographic controls of normative sample)	4.8
CAS2 (demographic controls of normative sample)	4.3

Note: The data for these results are reported for the Stanford-Binet IV from Wasserman (2000); Woodcock-Johnson III from Edwards and Oakland (2006); Kaufman Assessment Battery for Children from Naglieri (1986); Kaufman Assessment Battery for Children II from Lichenberger, Sotelo-Dynega, and Kaufman (2009); CAS from Naglieri, Rojahn, Matto, and Aquilino (2005); CAS2 from Naglieri, Das, and Goldstein (2014a); and Wechsler Intelligence Scale for Children IV (WISC-IV) from O'Donnell (2009).



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Naglieri, Rojahn, Matto (2007)

Hispanic White difference on CAS Full Scale of 4.8 standard score points (matched)

Available online at www.sciencedirect.com
ScienceDirect
ELSEVIER
Intelligence 35 (2007) 568–579
INTELLIGENCE

Hispanic and non-Hispanic children's performance on PASS cognitive processes and achievement☆

Jack A. Naglieri [a,*], Johannes Rojahn [a], Holly C. Matto [b]

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Received 16 May 2006; received in revised form 6 November 2006; accepted 6 November 2006
Available online 8 January 2007

Abstract

Hispanics have become the largest minority group in the United States. Hispanic children typically come from working class homes with parents who have limited English language skills and educational training. This presents challenges to psychologists who assess these children using traditional IQ tests because of the considerable verbal and academic (e.g., quantitative) content. Some researchers have suggested that intelligence conceptualized on the basis of psychological processes may have utility for assessment of children from culturally and linguistically diverse populations because verbal and quantitative skills are not included. This study examined Hispanic children's performance on the Cognitive Assessment System (CAS; [Naglieri, J.A., and Das, J.P. (1997). Cognitive Assessment System. Itasca, IL: Riverside.]) which is based on the Planning, Attention, Simultaneous, and Successive (PASS) theory of intelligence. The scores of Hispanic (N=244) and White (N=1956) children on the four PASS processes were obtained and the respective correlations between PASS and achievement compared. Three complementary sampling methodologies and data analysis strategies were chosen to compare the Ethnic groups. Sample size was maximized using nationally representative groups and demographic group differences were minimized using smaller matched samples. Small differences between Hispanic and non-Hispanic children were found when ability was measured with tests of basic PASS processes. In addition, the correlation between the PASS constructs and achievement were substantial for both Hispanic and non-Hispanic children and were not significantly different between the groups.
Published by Elsevier Inc.

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PASS scores – English and Spanish

Bilingual Hispanic Children's Performance on the English and Spanish Versions of the Cognitive Assessment System

Jack A. Naglieri
George Mason University
Tulio Otero
Columbia College, Elgin Campus
Brianna DeLauder
George Mason University
Holly Matto
Virginia Commonwealth University

This study compared the performance of referred bilingual Hispanic chi on the Planning, Attention, Simultaneous, Successive (PASS) theory as sured by English and Spanish versions of the Cognitive Assessment Sy (CAS; Naglieri & Das, 1997a). The results suggest that students scored sim on both English and Spanish versions of the CAS. Within each version CAS, the bilingual children earned their lowest scores in Successive proce regardless of the language used during test administration. Small mean d ences were noted between the means of the English and Spanish versions fo Simultaneous and Successive processing scales; however, mean Full Scale s were similar. Specific subtests within the Simultaneous and Successive s were found to contribute to the differences between the English and Sp versions of the CAS. Comparisons of the children's profiles of cognitive w ness on both versions of the CAS showed that these children performed sist

APPLIED NEUROPSYCHOLOGY: CHILD, 0: 1–9, 2012
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ISSN: 2162-2965 print/2162-2973 online
DOI: 10.1080/21622965.2012.670547

The Neurocognitive Assessment of Hispanic English-Language Learners With Reading Failure

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Lauren Gonzales
George Mason University, Fairfax, Virginia
Jack A. Naglieri
University of Virginia, Fairfax, Virginia

This study examined the performance of referred Hispanic English-language learners ($N = 40$) on the English and Spanish versions of the *Cognitive Assessment System* (CAS; Naglieri & Das, 1997). The CAS measures basic neuropsychological processes based on the Planning, Attention, Simultaneous, and Successive (PASS) theory (Naglieri & Das, 1997; Naglieri & Otero, 2011c). Full Scale (FS) scores as well as PASS processing scale

Conclusions:
Strengths and weaknesses in PASS scores across these two studies were identical 93% of the time.

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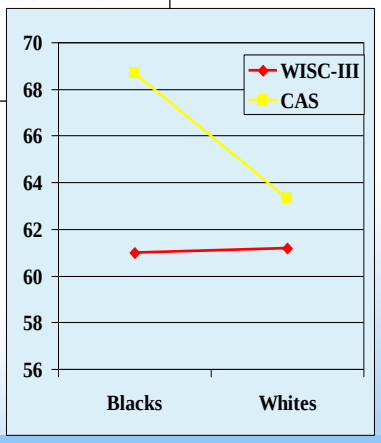
Naglieri & Rojahn (2001)

- Significantly lower VIQ (62) than PIQ (67) for African-Americans but *not* whites (V=65, P=63)
- African-Americans were more likely to be *incorrectly* labeled ID because of lower Verbal IQ scores

American Journal on Mental Retardation, 2001, Vol. 106, No. 4, 359–367

Intellectual Classification of Black and White Children in Special Education Programs Using the WISC-III and the Cognitive Assessment System

Jack A. Naglieri
George Mason University
Johannes Rojahn
The Ohio State University



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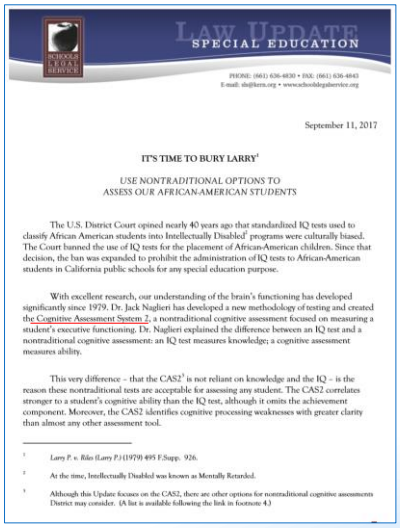
…we recommend using the CAS2…



LAW UPDATE
SPECIAL EDUCATION

SCHOOLS LEGAL SERVICE

PHONE: (661) 636-4830 • FAX: (661) 636-4843
E-mail: slo@kern.org • www.schoolslegalservice.org

September 11, 2017

IT'S TIME TO BURY LARRY[1]

USE NONTRADITIONAL OPTIONS TO ASSESS OUR AFRICAN-AMERICAN STUDENTS

The U.S. District Court opined nearly 40 years ago that standardized IQ tests used to classify African American students into Intellectually Disabled[2] programs were culturally biased. The Court banned the use of IQ tests for the placement of African-American children. Since that decision, the ban was expanded to prohibit the administration of IQ tests to African-American students in California public schools for any special education purpose.

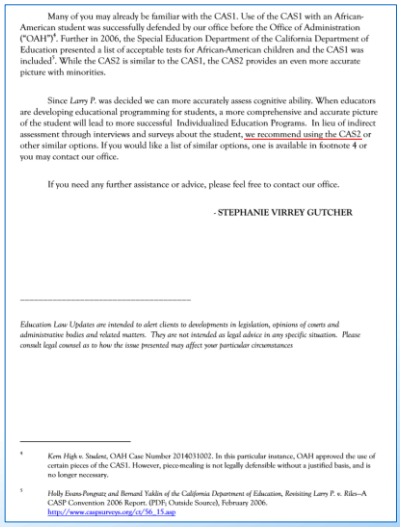
With excellent research, our understanding of the brain's functioning has developed significantly since 1979. Dr. Jack Naglieri has developed a new methodology of testing and created the Cognitive Assessment System 2, a nontraditional cognitive assessment focused on measuring a student's executive functioning. Dr. Naglieri explained the difference between an IQ test and a nontraditional cognitive assessment: an IQ test measures knowledge; a cognitive assessment measures ability.

This very difference – that the CAS2[3] is not reliant on knowledge and the IQ – is the reason these nontraditional tests are acceptable for assessing any student. The CAS2 correlates stronger to a student's cognitive ability than the IQ test, although it omits the achievement component. Moreover, the CAS2 identifies cognitive processing weaknesses with greater clarity than almost any other assessment tool.

1 *Larry P. v. Riles* (*Larry P.*) (1979) 495 F.Supp. 926.

2 At the time, Intellectually Disabled was known as Mentally Retarded.

3 Although this Update focuses on the CAS2, there are other options for nontraditional cognitive assessments District may consider. (A list is available following the link in footnote 4.)



Many of you may already be familiar with the CAS1. Use of the CAS1 with an African-American student was successfully defended by our office before the Office of Administration ("OAH")[4]. Further in 2006, the Special Education Department of the California Department of Education presented a list of acceptable tests for African-American children and the CAS1 was included[5]. While the CAS2 is similar to the CAS1, the CAS2 provides an even more accurate picture with minorities.

Since *Larry P.* was decided we can more accurately assess cognitive ability. When educators are developing educational programming for students, a more comprehensive and accurate picture of the student will lead to more successful Individualized Education Programs. In lieu of indirect assessment through interviews and surveys about the student, we recommend using the CAS2 or other similar options. If you would like a list of similar options, one is available in footnote 4 or you may contact our office.

If you need any further assistance or advice, please feel free to contact our office.

- STEPHANIE VIRREY GUTCHER

Education Law Updates are intended to alert clients to developments in legislation, opinions of courts and administrative bodies and related matters. They are not intended as legal advice in any specific situation. Please consult legal counsel as to how the issue presented may affect your particular circumstances

4 *Kern High v. Student*, OAH Case Number 2014031002. In this particular instance, OAH approved the use of certain pieces of the CAS1. However, piece-mealing is not legally defensible without a justified basis, and is no longer necessary.

5 *Holly Evans-Pongratz and Bernard Yaklin of the California Department of Education, Revisiting Larry P. v. Riles–A CASP Convention 2006 Report.* (PDF; Outside Source), February 2006. http://www.caspsurveys.org/ct/56_15.asp

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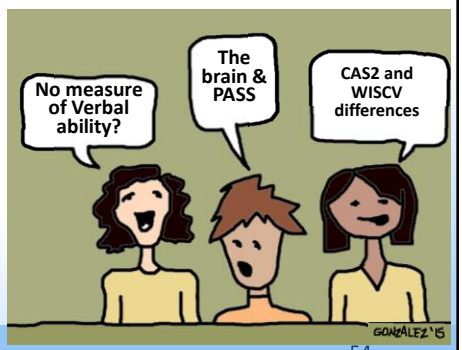
Think Partners→ Deeper Learning

- **Topic: PASS and CAS2**
  - What are your thoughts about PASS?
  - Questions about CAS2?
  - Modalities matter?



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Topical Outline

- Introduction
- Definition of SLD
- Measure "basic psychological process" with CAS2
- SF Measure reading and math with the FAR and FAM
- Using the Discrepancy Consistency Method
  - Reading Disabilities
    - Case study Paul (Successive processing disorder)
    - Case of Nelson (Simultaneous processing disorder)
  - Math Disabilities
    - Case study Kenny (Planning and Simultaneous)
    - Case study Jackson- (Planning and Attention)
  - CAS2 Case Study Workbook
- Conclusions

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Limitations of Traditional Achievement Tests: WHY vs WHERE

WIAT III Reading Comprehension: Each passage read silently; story stays in front of student while answering free recall questions. *Examiner assumes an EF deficit*.

GORT V: Each passage is read out loud, and then the story is taken away. Questions are multiple choice. *Examiner assumes a Working Memory deficit.*

WJ IV Passage Comprehension: A closed procedure where the student reads a short passage and identifies a missing key word that makes sense in the context of the passage. *More a measure of semantic and syntactic knowledge than true comprehension.*

KTEA III: Can read silently or out loud. Student reads each question and story remains in view when answering. *Examiner is unsure of what strategy is implemented to derive a response.*

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FAR: Semantic Concepts

Synonyms Presentation

error

earn blunder correct
chance grasp

Antonyms Presentation

divide

reject deride split
combine hinder

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FAR: Word Recall

❑ PK–Grade 2

Item	
1.	chain
2.	drum
3.	pepper
4.	wheel
5.	guitar
6.	celery
7.	brake
8.	trumpet
9.	tomato

Trial 2: Bicycle words			Intrusions
chain	❑	R	
wheel	❑	R	
brake	❑	R	
3rd+ handlebars	❑	R	

Trial 2: Musical instruments			Intrusions
drum	❑	R	
guitar	❑	R	
trumpet	❑	R	
3rd+ piano	❑	R	

❑ Grades 3+

Item	
1.	chain
2.	drum
3.	pepper
4.	wheel
5.	guitar
6.	celery
7.	brake
8.	trumpet
9.	tomato
10.	handlebars
11.	piano
12.	carrot

Trial 2: Fruits and vegetables			Intrusions
pepper	❑	R	
celery	❑	R	
tomato	❑	R	
3rd+ carrot	❑	R	

	Number correct	Repetitions	Intrusions
Trial 2 subtotals			

To calculate the Word Recall total, transfer the Trial 1 and Trial 2 subtotals to the appropriate spaces below. Sum the number correct subtotals and record this value in the space provided.

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

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FAR: Silent Reading Fluency

2 passages and 8 questions

Grades 11+ Story 1

The legacy of James Madison goes well beyond that created by being the fourth president of the United States. In fact, perhaps no other individual in history has had a more profound role in shaping the basic tenets of our society. A noted political philosopher, Madison was the principal author of the Constitution and introduced the Bill of Rights, considered by many to play an essential part in maintaining a balance of power between the individual and the federal government. Some Bill of Rights clauses include the right to free speech, the right to a free press, the right to bear arms, and the right to free assembly. Furthermore, it was Madison who argued for a three-branch federal system, which ultimately became the basis for our government today. His great adversary, Alexander Hamilton, proposed a republic dominated by a strong central government and national bank. Madison combated this notion by forging an alliance with Thomas Jefferson to create the Democratic-Republican Party. Madison eventually retired to Virginia and served as a college chancellor to the University of Virginia until his death. Today, James Madison University, also in Virginia, remains a thriving institution in his honor.

Grades 11 + Story 1 Questions

1. What number president was Madison?
2. Who was Madison's chief political adversary?
3. Who did Madison form an alliance with to create the Democratic-Republican party?
4. What college did Madison eventually preside over?
5. What Bill of Rights clauses does the passage mention?
6. Beyond being one of our presidents, what are Madison's other legacies to the American people?
7. What does the word "free" imply in this passage?
8. Why do you think Madison opposed a republic dominated by a strong central government?

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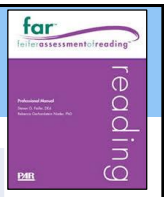
Planning and FAR



FAR Subtests	Involvement of Planning
Semantic Concepts– a multiple choice test requiring the student to select the correct antonym or synonym of a target word.	Poor planning results in impulsive responding of choices when words presented in multiple choice format.
Word Recall – requires the student to repeat back a list of words over a series of two trials. The second trial requires the student to recall a word from a selected list.	Lack of a strategy leads to poor word recall.
Silent Reading Fluency – requires the student to silently read a passage, and then answer a series of literal and inferential questions about the story. Reading rate is also recorded as well.	Poor planning leads to inconsistent recall of passages.

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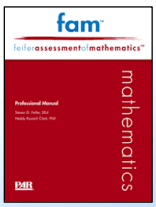
Traditional Math Achievement Tests

- Wechsler Individual Achievement Test- 3rd Edition
- Woodcock Johnson IV Achievement Test
- Kaufman Test of Educational Achievement (KTEA-III)
- Test of Early Mathematics Ability – 3rd Edition (TEMA-3)
- Comprehensive Mathematical Abilities Test (CMAT)
- Test of Mathematical Abilities -3rd Edition (TOMA-3)
- WRAT-5
- Academic Achievement Battery (AAB)

Diagnostic Achievement Tests

- KEYMATH-3 (2007)
- PAL-II (2007)



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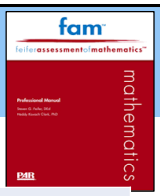
Planning and FAM



FAM Subtests	Involvement of Planning
Sequences – the student attempts to identify the missing picture or missing number from a visual pattern or sequence.	Measures **deductive reasoning** to determine an underlying pattern.
Equation Building – the student selects an equation that best represents how to solve a mathematical word problem.	**Generalization** of number sense toward application of mathematical problems in a real-world context.
Perceptual Estimation – the student identifies which of two pictures has more items without counting them. Older students are required to estimate the approximate number of items in a picture based upon a picture cue.	**Plan** a response based upon cues from picture cue.
Addition Knowledge – a timed task requiring the student to identify the missing addends to addition problems presented in an array in 60 seconds.	Cognitive **flexibility** of addition concepts
Subtraction Knowledge – a timed task requiring the student to identify the missing minuends to subtraction problems presented in an array in 60 seconds.	Cognitive **flexibility** of subtraction concepts
Multiplication Knowledge – a timed task requiring the student to identify the missing factors to multiplication problems presented in an array in 60 seconds.	Cognitive **flexibility** of multiplication concepts
Division Knowledge – a timed task requiring the student to identify the missing dividends or divisors to division problems presented in an array in 60 seconds.	Cognitive **flexibility** of division concepts

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Correspondence of PASS, FAR, & FAM

Feifer Assessment of Reading

Feifer Assessment of Reading	Planning	Attention	Simultaneous	Successive
Phonological Index				X
Phonemic Awareness				X
Nonsense Word Decoding				X
Isolated Word Reading Fluency			X	X
Oral Reading Fluency			X	X
Positioning Sounds				X
Fluency Index			X	
Rapid Automatic Naming			X	
Verbal Fluency	X			
Visual Perception		X		
Irregular Word Reading Fluency			X	
Orthographical Processing		X	X	
Comprehension Index	X	X		
Semantic Concepts	X		X	
Word Recall	X	X		
Print Knowledge		X		
Morphological Processing				X
Silent Reading Fluency: Comprehension	X	X	X	

Feifer Assessment of Mathematics

Feifer Assessment of Mathematics	Planning	Attention	Simultaneous	Successive
Procedural Index				X
Forward Number Count		X		X
Backward Number Count		X		X
Numeric Capacity		X		X
Sequences	X			X
Object Counting		X		X
Verbal Index			X	
Rapid Number Naming			X	
Addition Fluency		X	X	
Subtraction Fluency		X	X	
Multiplication Fluency		X	X	
Division Fluency		X	X	
Linguistic Math Concepts	X		X	
Semantic Index	X		X	
Spatial Memory		X	X	
Equation Building	X		X	X
Perceptual Estimation	X		X	
Number Comparison		X	X	
Addition Knowledge	X	X		
Subtraction Knowledge	X	X		
Multiplication Knowledge	X	X		
Division Knowledge	X	X		

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CASE STUDY: ALEJANDRO (C.A. 7-0 GRADE 1)

REASON FOR REFERRAL

- From Naglieri & Otero, 2017 Essentials of CAS2 Assessment
- Academic problems:
  - Could not identify letters/sounds
  - October 2013: Could only count to 39
  - All ACCESS scores of 1
- Behavior:
  - Difficulty following directions
  - Attention concerns
  - Refusal/defiance

Note: All pictures are not actual students assessed.

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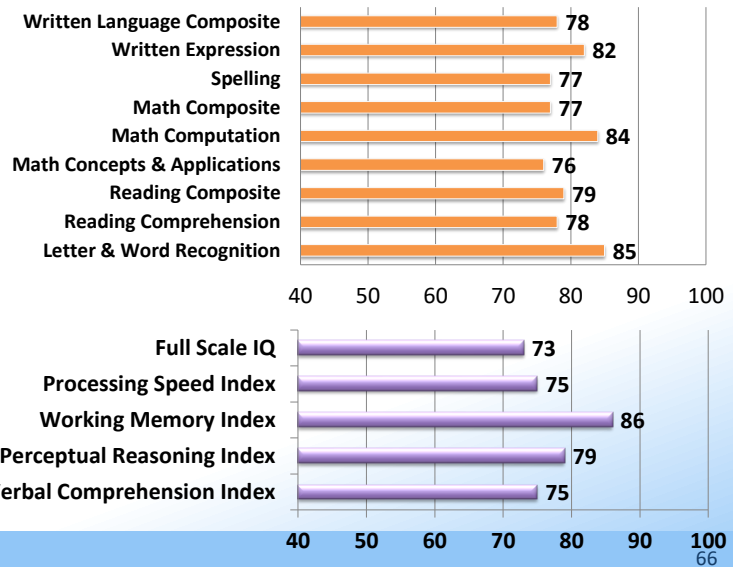
WISC-IV ASSESSMENT



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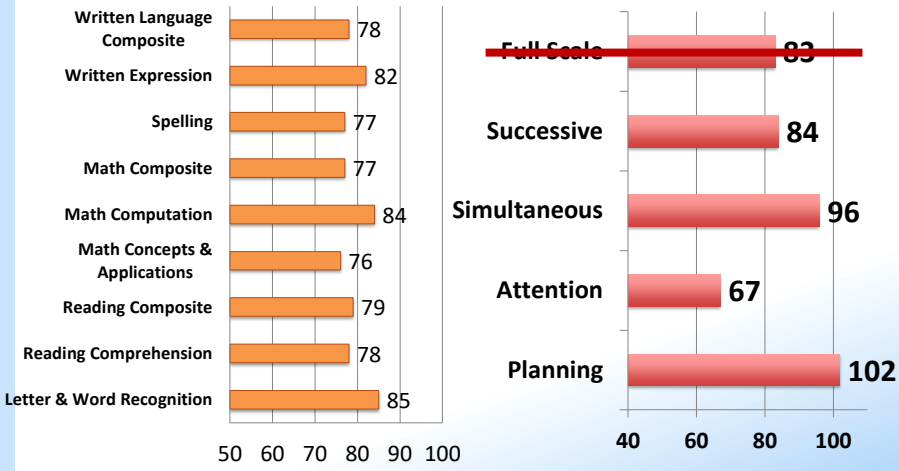
Alejandro's Results



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Alejandro and PASS (by Dr. Otero)

- Alejandro is not a slow learner.
- He has good scores in basic psychological processes:
  - Simultaneous = 96 and Planning = 102
- He has a "disorder in one or more of the basic psychological processes"
  - Attention = 67 and Successive = 84
- And he has academic failure despite appropriate instruction and no other issues, but there is evidence of a specific learning disability (Attention and Successive) with similarly low academic scores.
- This fits the Discrepancy Consistency Method

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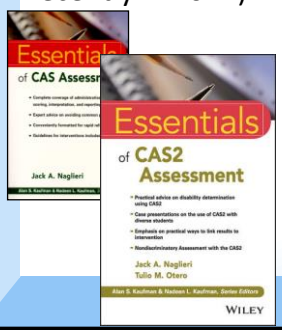
Discrepancy Consistency Method (DCM)

- The Discrepancy Consistency Method (DCM) was first introduced in 1999 (most recently in 2017)



Pattern of Strengths and Weaknesses Using the Discrepancy/Consistency Method for SLD Determination

Three methods for detecting a pattern of strengths and weaknesses (PSW) that can be used as part of the process of identifying a student with a specific learning disability (SLD) have been suggested by Naglieri in 1999, Hale and Fiorello in 2004, and by Flanagan, Ortiz, and Alfonso in 2007. These authors share the same goal: to present a procedure to detect a PSW in scores that can be used to identify an SLD (sometimes referred to as a third option; Zirkel & Thomas, 2010). Despite differences in the composition of the scores used and the definitions of what constitutes a basic psychological process, these methods all rely on finding a combination of differences as well as similarities in scores across academic and cognitive tests. Our approach to operationalizing a PSW is called the Discrepancy/Consistency Method (DCM) for the identification of SLD. Determining SLD is essentially based on the combination of PASS and achievement test scores. The method involves a systematic examination of variability of PASS and academic achievement test scores which has

DON'T FORGET 3.5

The essence of the Discrepancy/Consistency Method is two discrepancies and one consistency.

Discrepancy 1:
Significant variability among the PASS scores indicating a weakness in one or more of the basic psychological processes

Discrepancy 2:
Significant difference between high PASS scores and low achievement test scores

Consistency:
No significant difference between low PASS scores and low achievement

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Discrepancy Consistency Method

- The Discrepancy Consistency Method is used to determine if there is evidence of "a disorder in 1 or more of the basic psychological processes … which manifests itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations."
- The disorder in 1 or more basic psychological processes is found when a student shows a pattern of strengths and weaknesses in basic psychological processes, **and**…
- The imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations is found when a student shows a pattern of strengths and weaknesses in achievement
- The result is two discrepancies and a consistency

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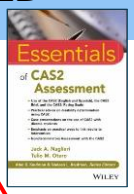
Discrepancy Consistency Method for SLD

- **Discrepancy #1** between high and low processing scores
- **Discrepancy #2** between high processing and low achievement
- **Consistency** between low processing and low achievement



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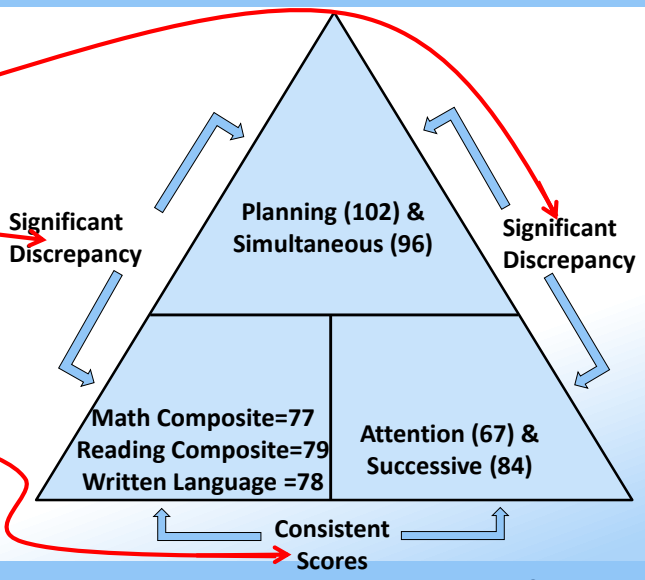
Discrepancy Consistency Method for SLD

- Discrepancy between high and low processing scores
- Discrepancy between high processing and low achievement
- Consistency between low processing and low achievement



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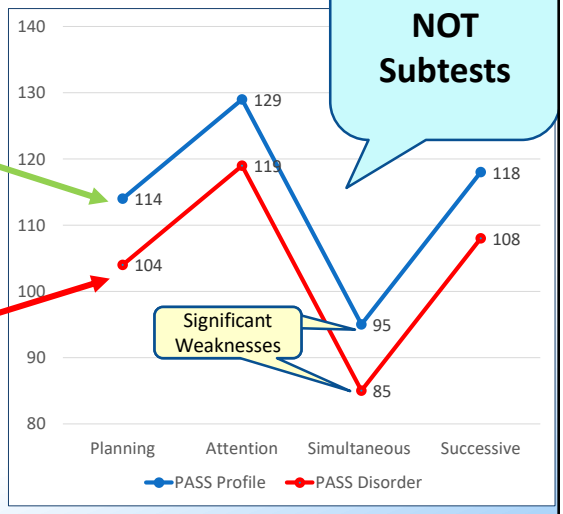
How to Determine a Disorder

- Two sets of PASS scores were studied
  - Significant variation in relation to student's average has *instructional relevance*
  - Significant variation in relation to student's average AND a standard score less than 90 (< 25th %tile) *supports designation as SLD*



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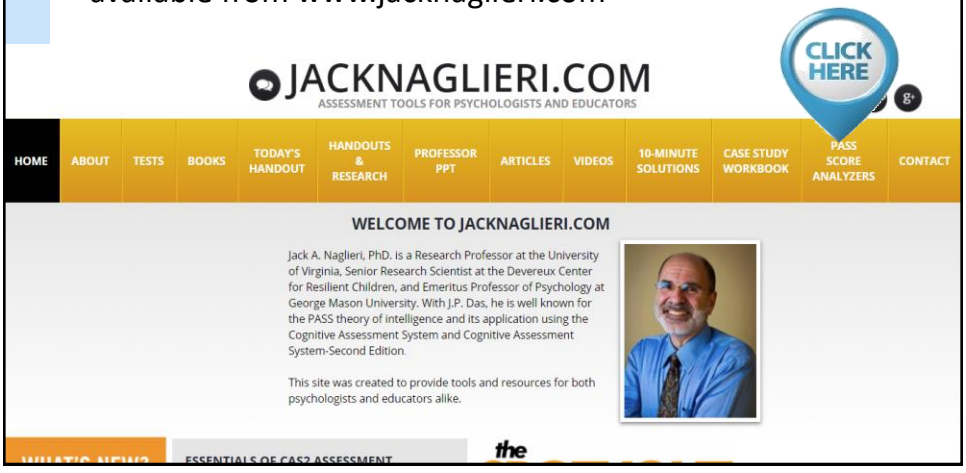
CAS2 Achievement PSW Analyzers

- A ***free*** excel worksheet that analyzes the relationships between the CAS2 with various achievement tests is available from www.jacknaglieri.com



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CAS2 Analyzer Options

- FREE CAS2 Analyzers are available for the WIAT-3, WJ-4, and KTEA-3 on www.jacknaglieri.com
- But WHY do I suggest the combination of PASS scores from CAS2 with the FAR and FAM?
  - FAR and FAM are elegantly inter-related to the CAS2 because PASS processes underlie reading and math skills
    - For example, when you determine if a student is using a strategy when doing reading comprehension on the FAR you can tie that to the CAS2 Planning score
    - Or when a student struggles with decoding words you can connect that to the CAS2 Successive processing score
    - The connection between low scores on the FAR and/or FAM with PASS is so important because it explains WHY student struggles AND what to do about it

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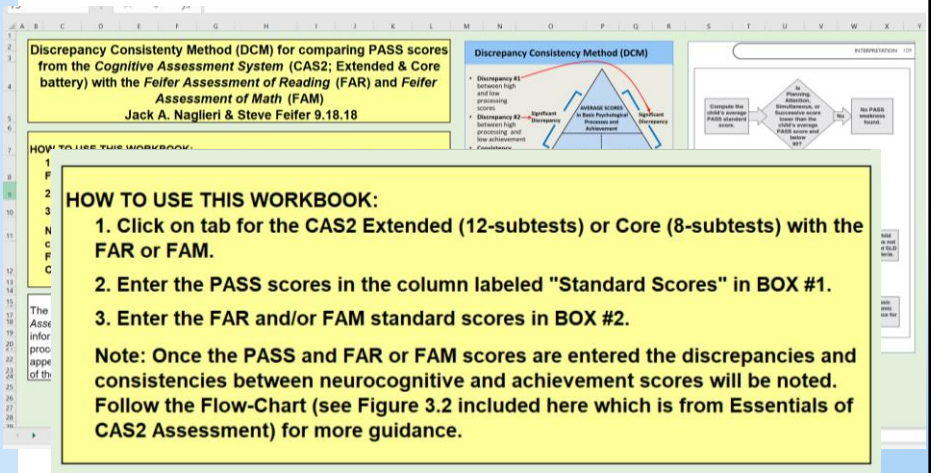
CAS2, FAR & FAM PSW Analyzer

- Instructions tab Page 1



PASS: A new way to think about and measure intelligence

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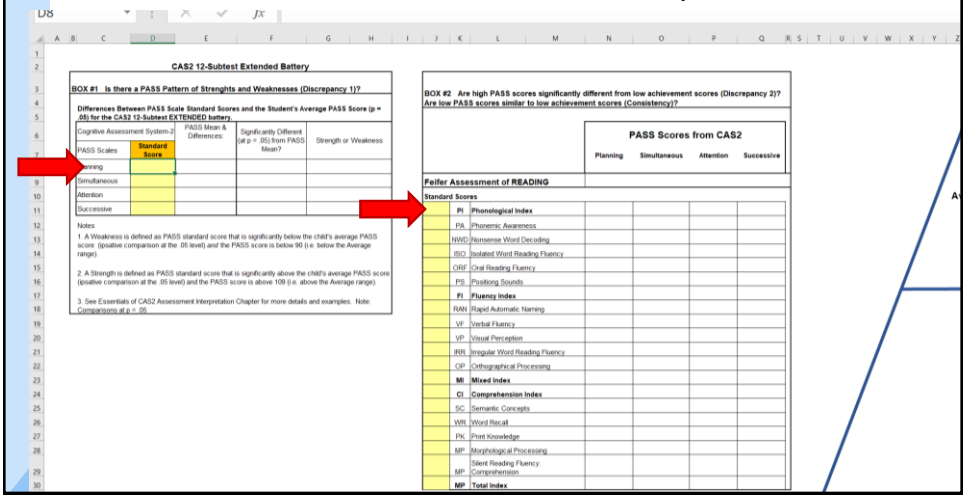
CAS2, FAR & FAM PSW Analyzer

- CAS2 Extended and FAR analysis on Page 2
  - Enter PASS and FAR standard scores in the yellow boxes



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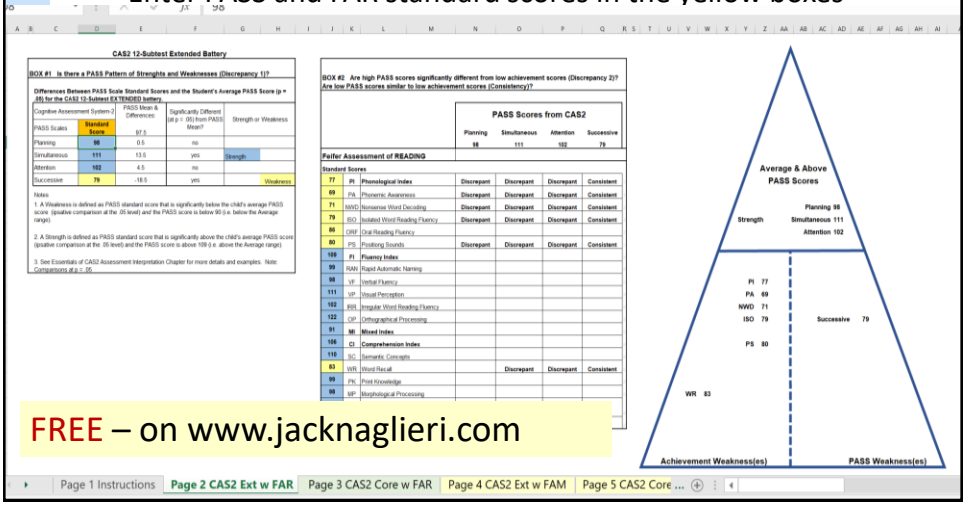
CAS2, FAR & FAM PSW Analyzer

- CAS2 Extended and FAR analysis on Page 2
  - Enter PASS and FAR standard scores in the yellow boxes



FREE – on www.jacknaglieri.com

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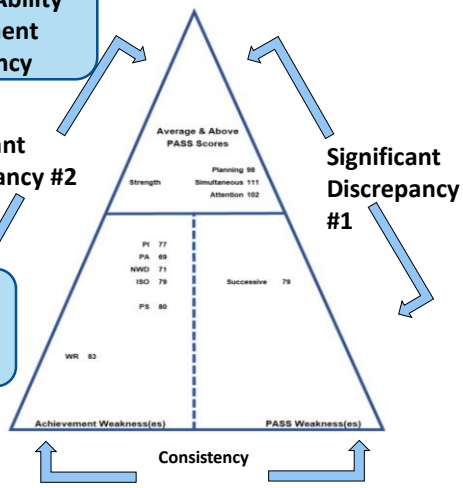
CAS2, FAR & FAM PSW Analyzer

- Discrepancy #1 Successive processing is a weakness
- Discrepancy #2 between good PASS and poor FAR scores
- Consistency between Successive and FAR achievement scores

Note: This is a traditional Ability Achievement Discrepancy

Significant Discrepancy #2

The Consistency tells you *WHY the student fails*



Significant Discrepancy #1

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CAS2, FAR & FAM PSW Analyzer

- CAS2, FAR & FAM Correspondence

Correspondence of FAR and PASS	Planning	Attention	Simultaneous	Successive
Phonemic Awareness - measures rhyming, blending, segmenting, and manipulating sounds.				x
Positioning Sounds - a phonemic localization task determining sound positions.				x
Nonsense Word Decoding - the student decodes a series of nonsense words.				x
Isolated Word Reading Fluency - the student reads a list of words in 60 seconds.			x	x
Oral Reading Fluency - the student reads a passage composed of the same words as the Isolated Word Reading Fluency task.			x	x
Rapid Automatic Naming - the student names either objects, letters, or stencils.			x	
Visual Perception - the student identifies letters or words printed backwards from an array.		x	x	
Verbal Fluency - the student retrieves words from a category, or items that start with a letter.	x	x		
Orthographic Processing - the student recalls a letter, or group of letters, from a target word.		x	x	
Irregular Word Reading Fluency - the student reads a list of phonologically irregular words.			x	
Semantic Concepts - the student identifies the correct antonym or synonym of a target word.	x		x	
Word Recall - the student repeats back a list of words over two trials.	x	x		
Morphological Processing - the student selects the correct prefix, suffix, or stem that completes a target word.				x
Silent Reading Fluency - the student answers questions after reading a passage silently.	x	x	x	x

Note: The correspondence of PASS with FAR and FAM needs to be carefully examined for each student. The table above is a starting point, and should b used flexibly. For example, whereas Planning is anticipated to play a key role for some subtests on the FAR and FAM, it could also have a greater influenc on many of these measures if the student's reaction when having difficulty is to withdraw or impulsively choose an answer (i.e., use a bad Plan).

Correspondence of FAM and PASS	Planning	Attention	Simultaneous	Successive
Phonemic Awareness - measures rhyming, blending, segmenting, and manipulating sounds.				x
Positioning Sounds - a phonemic localization task determining sound positions.				x
Nonsense Word Decoding - the student decodes a series of nonsense words.				x
Isolated Word Reading Fluency - the student reads a list of words in 60 seconds.			x	x
Oral Reading Fluency - the student reads a passage composed of the same words as the Isolated Word Reading Fluency task.			x	x
Rapid Automatic Naming - the student names either objects, letters, or stencils.			x	
Visual Perception - the student identifies letters or words printed backwards from an array.		x	x	
Verbal Fluency - the student retrieves words from a category, or items that start with a letter.	x	x		
Orthographic Processing - the student recalls a letter, or group of letters, from a target word.		x	x	
Irregular Word Reading Fluency - the student reads a list of phonologically irregular words.			x	
Semantic Concepts - the student identifies the correct antonym or synonym of a target word.	x		x	
Word Recall - the student repeats back a list of words over two trials.	x	x		
Morphological Processing - the student selects the correct prefix, suffix, or stem that completes a target word.				x
Silent Reading Fluency - the student answers questions after reading a passage silently.	x	x	x	x

Note: The correspondence of PASS with FAR and FAM needs to be carefully examined for each student. The table above is a starting point, and should be used flexibly. For example, whereas Planning is anticipated to play a key role for some subtests on the FAR and FAM, it could also have a greater influence on many of these measures if the student's reaction when having difficulty is to withdraw or impulsively choose an answer (i.e., use a bad Plan).

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PASS and DCM for Eligibility and Intervention

From a practitioner perspective:

- DCM provides clarity for SLD eligibility
- PASS shines light on strengths that would go unnoticed via knowledge-based cognitive assessment
- Better understanding for using strengths to mitigate weaknesses
- Simple explanations for parents, teachers *AND* students
- Process approach to developing strategies and interventions for learning challenged students

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CAS2 Illustrative Case Studies

- A ***free*** CAS2 Case Workbook with illustrative examples of how to identify different PASS processing disorders and academic weakness, with interventions, is available

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Rules are Made to be Broken – Case of Lilly

- Lilly was retained last year now in 2nd grade.
  - Second language learner, Spanish spoken at home.
  - Based on oral language dominance is stronger in English.
  - Lilly can speak Spanish, however she prefers English.
  - All instruction in the monolingual English program.
  - Showing adequate progress based on TELPAS scores regarding language proficiency.
  - Teachers referred for an evaluation due to lack of progress in all areas, especially in Math.

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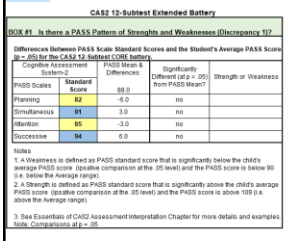
Rules are Made to be Broken – Case of Lilly

- No significant ipsative results; BUT Planning = 82, Attention = 85 and these are *consistent* with Early Reading Skills (85), Spelling (85), and Math Problem Solving (84)
- Successive (94) and Simultaneous (91) significantly *discrepant* from Math Fluency (65 & 76), Pseudoword Decoding (77) and Numerical operations (74)



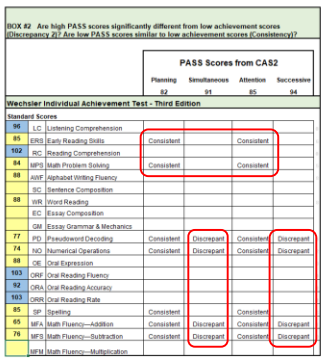
CAS2 12-Subtest Extended Battery

BOX #1 Is there a PASS Pattern of Strengths and Weaknesses (Discrepancy 1)?

Differences Between PASS Scale Standard Scores and the Student's Average PASS Score (p < .05) for the CAS2 12-Subtest CORE battery

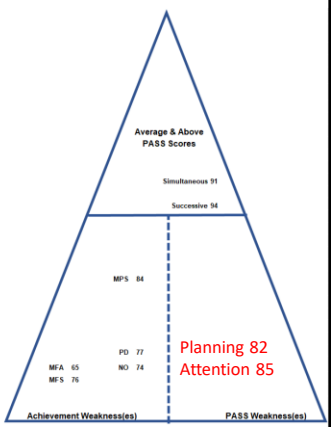
Cognitive Assessment System-2		PASS Mean 6 Differences:	Significantly Different (at p < .05) from PASS Mean?	Strength or Weakness
PASS Scales	Standard Score	88.0		
Planning	82	-6.0	no	
Simultaneous	91	3.0	no	
Attention	85	-3.0	no	
Successive	94	6.0	no	

Notes
1. A Weakness is defined as PASS standard score that is significantly below the child's average PASS score (ipsative comparison at the .05 level) and the PASS score is below 90 (i.e. below the Average range)
2. A Strength is defined as PASS standard score that is significantly above the child's average PASS score (ipsative comparison at the .05 level) and the PASS score is above 109 (i.e. above the Average range)
3. See Essentials of CAS2 Assessment Interpretation Chapter for more details and examples.
Note: Comparisons at p = .05



BOX #2 Are high PASS scores significantly different from low achievement scores (Discrepancy 2)? Are low PASS scores similar to low achievement scores (Consistency)?

			PASS Scores from CAS2			
			Planning 82	Simultaneous 91	Attention 85	Successive 94
Wechsler Individual Achievement Test - Third Edition						
Standard Scores						
96	LC	Listening Comprehension				
85	ERS	Early Reading Skills	Consistent		Consistent	
102	RC	Reading Comprehension				
84	MPS	Math Problem Solving	Consistent		Consistent	
88	AHF	Alphabet Writing Fluency				
	SC	Sentence Composition				
88	WR	Word Reading				
	EC	Essay Composition				
	GM	Essay Grammar & Mechanics				
77	PD	Pseudoword Decoding	Consistent	Discrepant	Consistent	Discrepant
74	NO	Numerical Operations	Consistent	Discrepant	Consistent	Discrepant
88	OE	Oral Expression				
103	ORF	Oral Reading Fluency				
92	ORA	Oral Reading Accuracy				
103	ORR	Oral Reading Rate				
85	SP	Spelling	Consistent		Consistent	
65	MFA	Math Fluency—Addition	Consistent	Discrepant	Consistent	Discrepant
76	MFS	Math Fluency—Subtraction	Consistent	Discrepant	Consistent	Discrepant
	MFM	Math Fluency—Multiplication				



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Think Partners → Deeper Learning

- **Topic: Your Thoughts about these cases**
  - Which case was most helpful?
  - Does the Discrepancy Consistency Method make sense?

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Topical Outline

- Introduction
- Definition of SLD
- Measure "basic psychological process" with CAS2
- Measure reading and math with the FAR and FAM
- Using the Discrepancy Consistency Method
  - SF Reading Disabilities
    - Case study Paul (Successive processing disorder)
    - Case of Nelson (Simultaneous processing disorder)
  - Math Disabilities
    - Case study Kenny (Planning and Simultaneous)
    - Case study Jackson- (Planning and Attention)
  - CAS2 Case Study Workbook
- Conclusions

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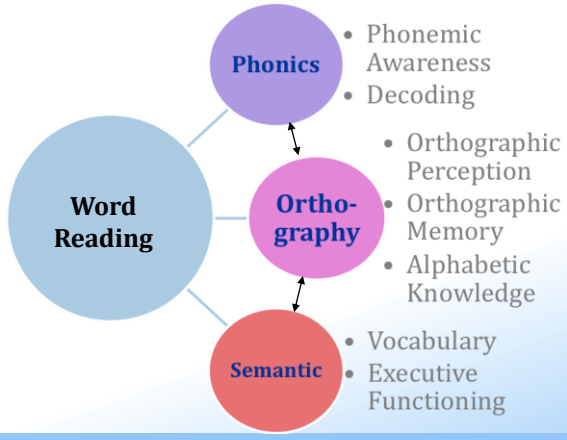
Multiple Cueing Systems of Reading

- **Recognizes that both phonological and orthographic and semantic cues can facilitate word recognition.**



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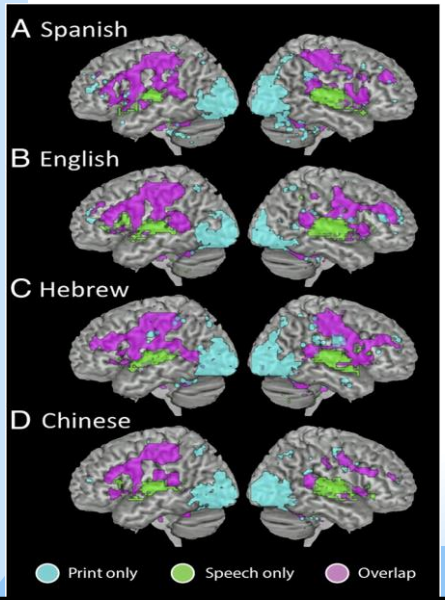
A Universal Reading Brain

Rueckl et al., (2015). Universal brain signature of proficient reading: Evidence from four contrasting languages. **Proceedings of the National Academy of Sciences**; 112(50): 15510–15515



- Proficient reading entails the convergence of phonological and orthographic processing systems onto a common network of neural structures dominated by the left perisylvian regions of the brain.
- Dyslexics in transparent orthographic systems, such as Spanish, German, Italian, Greek have difficulty in acquiring reading speed as a hallmark deficit of dyslexia (Ziegler et al., 2003; Davies et al., 2007; Constantinidou & Stainthorp, 2009; Wimmer et al., 2010).

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FAR SUBTYPES OF READING DISORDERS

(1) Dysphonetic Dyslexia – difficulty sounding out words in a phonological manner.

(2) Surface Dyslexia – difficulty with the rapid and automatic recognition of words in print.

(3) Mixed Dyslexia – multiple reading deficits characterized by impaired phonological and orthographic processing skills. Most severe form of dyslexia.

(4) Comprehension Deficits – mechanical side of reading is fine but difficulty persists deriving meaning from print.

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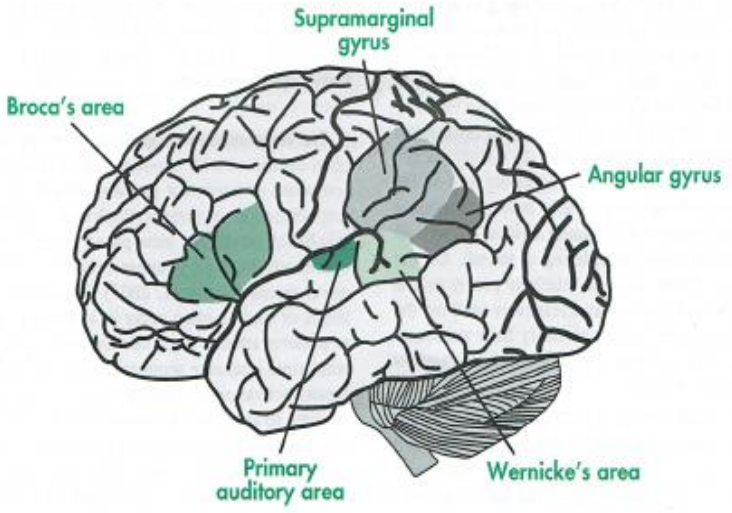
FAR SUBTYPES OF READING DISORDERS



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FAR SUBTEST STRUCTURE

Index	Subtest	Grade range	Approximate administration time in minutes
Phonological Index (PI)	Phonemic Awareness (PA)	PK to college	5 to 10
	Nonsense Word Decoding (NWD)	Grade 2 to college	2
	Isolated Word Reading Fluency (ISO)	K to college	1
	Oral Reading Fluency (ORF)	K to college	2 to 3
	Positioning Sounds (PS)	PK to college	3 to 4
Fluency Index (FI)	Rapid Automatic Naming (RAN)	PK to college	2
	Verbal Fluency (VF)	PK to college	2
	Visual Perception (VP)	PK to college	1
	Orthographical Processing (OP)	K to college	8
	Irregular Word Reading Fluency (IRR)	Grade 2 to college	1
Comprehension Index (CI)	Semantic Concepts (SC)	PK to college	5 to 8
	Word Recall (WR)	PK to college	4
	Print Knowledge (PK)	PK to Grade 1	4
	Morphological Processing (MP)	Grade 2 to college	7
	Silent Reading Fluency (SRF)	Grade 2 to college	8

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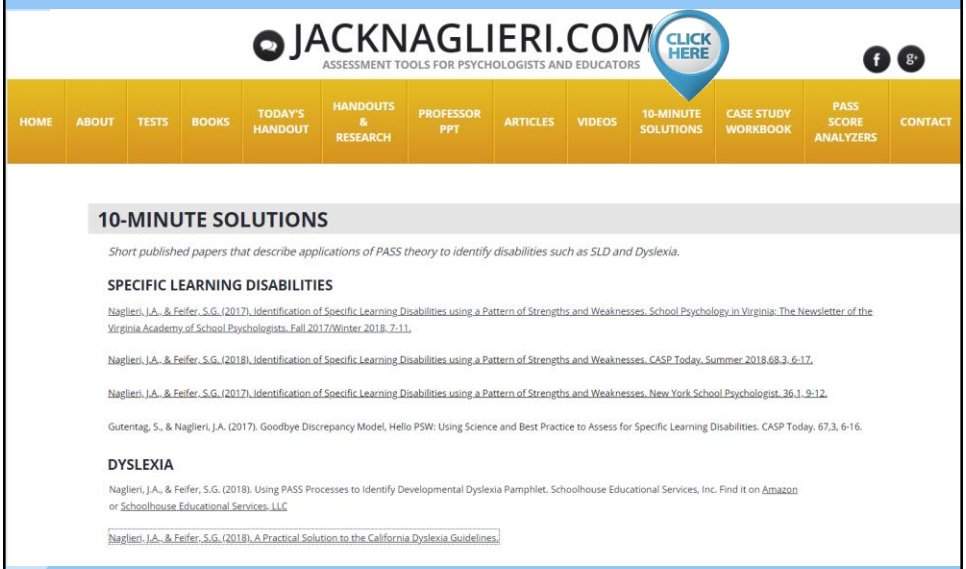
Dyslexia in California



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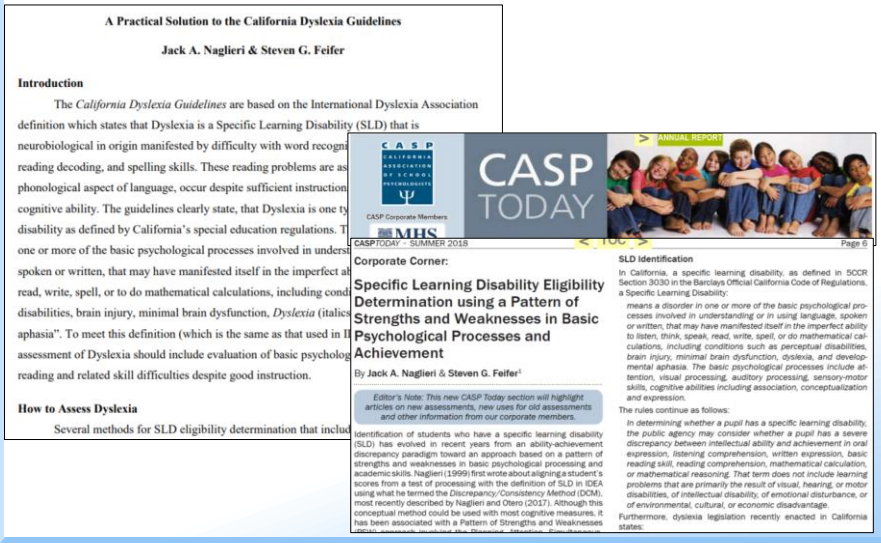
PSW & Dyslexia Papers (www.jacknaglieri.com)



A Practical Solution to the California Dyslexia Guidelines

Jack A. Naglieri & Steven G. Feifer

Introduction

The *California Dyslexia Guidelines* are based on the International Dyslexia Association definition which states that Dyslexia is a Specific Learning Disability (SLD) that is neurobiological in origin manifested by difficulty with word recogni reading decoding, and spelling skills. These reading problems are as phonological aspect of language, occur despite sufficient instruction cognitive ability. The guidelines clearly state, that Dyslexia is one ty disability as defined by California's special education regulations. T one or more of the basic psychological processes involved in unders spoken or written, that may have manifested itself in the imperfect ab read, write, spell, or to do mathematical calculations, including cond disabilities, brain injury, minimal brain dysfunction, *Dyslexia* (italics aphasia". To meet this definition (which is the same as that used in I assessment of Dyslexia should include evaluation of basic psycholog reading and related skill difficulties despite good instruction.

How to Assess Dyslexia

Several methods for SLD eligibility determination that includ

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ANNUAL REPORT

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Corporate Corner:

Specific Learning Disability Eligibility Determination using a Pattern of Strengths and Weaknesses in Basic Psychological Processes and Achievement

By Jack A. Naglieri & Steven G. Feifer[1]

Editor's Note: This new CASP Today section will highlight articles on new assessments, new uses for old assessments and other information from our corporate members.

Identification of students who have a specific learning disability (SLD) has evolved in recent years from an ability-achievement discrepancy paradigm toward an approach based on a pattern of strengths and weaknesses in basic psychological processing and academic skills. Naglieri (1999) first wrote about aligning a student's scores from a test of processing with the definition of SLD in IDEA using what he termed the *Discrepancy/Consistency Method* (DCM), most recently described by Naglieri and Otero (2017). Although this conceptual method could be used with most cognitive measures, it has been associated with a Pattern of Strengths and Weaknesses

SLD Identification

In California, a specific learning disability, as defined in 5CCR Section 3030 in the Barclays Official California Code of Regulations, a Specific Learning Disability:

means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may have manifested itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The basic psychological processes include attention, visual processing, auditory processing, sensory-motor skills, cognitive abilities including association, conceptualization and expression.

The rules continue as follows:

In determining whether a pupil has a specific learning disability, the public agency may consider whether a pupil has a severe discrepancy between intellectual ability and achievement in oral expression, listening comprehension, written expression, basic reading skill, reading comprehension, mathematical calculation, or mathematical reasoning. That term does not include learning problems that are primarily the result of visual, hearing, or motor disabilities, of intellectual disability, of emotional disturbance, or of environmental, cultural, or economic disadvantage.

Furthermore, dyslexia legislation recently enacted in California states:

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Topical Outline

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    - Case study Paul (Successive processing disorder)
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  - Math Disabilities
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    - Case study Jackson- (Planning and Attention)
  - CAS2 Case Study Workbook
- Conclusions

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Case of Paul: 4th grade referral

- **Case of Paul** -A 9 year old in 4th grade
  - Problems in reading and math
  - Can't remember the sequence of steps when doing math and math facts
  - Good memory for details
  - Can't sound out words
  - Poor spelling
  - Poor reading comprehension

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Paul – age 9 years

WISCV	COMPOSITE SCORE	RANGE	PERCENTILE RANK
Verbal Comprehension	89	Below Average	23%
Visual Spatial	84	Below Average	14%
Fluid Reasoning	82	Below Average	12%
Working Memory	72	Very Low	3%
Processing Speed	76	Very Low	6%
FULL SCALE SCORE	81	Below Average	10%
WIAT III Reading	87	Below Average	19%
WIAT III Math	90	Average	25%
WIAT III Writing	94	Average	34%

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Paul – age 9 years

FAR index	Standard score (95% CI)	Percentile	Qualitative descriptor
Phonological Index	75	5%	Moderately Below Average
Fluency Index	92	30%	Average
Mixed Index	81	10%	Below Average
Comprehension Index	97	42%	Average
FAR Total Index	**84**	**14%**	**Below Average**

KEY INTERPRETATION	Score	Percentile	Descriptor
Nonsense Word Decoding – requires the student to decode a series of nonsense words presented in order of increasing difficulty .	71	3%	Moderately Below Average
Irregular Word Reading Fluency – the student reads a list of phonologically irregular words arranged in order of increasing difficulty in 60 seconds.	95	37%	Average

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Paul – age 9 years

CAS-2	STANDARD SCORE	Classification
Planning	**92**	**Average**
Simultaneous	**92**	**Average**
Attention	**110**	**Average**
Successive	**75**	**Very Low**
Full Scale is not reported		

Differences Between PASS Scale Standard Scores and the Student's Average PASS Score Required for Significance for the CAS2 12-Subtest EXTENDED battery AGES 8-18 Years.

Ages 8-18 YEARS

Cognitive Assessment System - 2		Difference from PASS Mean of:	Significantly Different (at $p < .05$) from	Strength or Weakness	
PASS Scales	Standard Score	92.3			
Planning	92	-0.3	no		
Simultaneous	92	-0.3	no		
Attention	110	17.8	yes	Strength	
Successive	75	-17.3	yes		Weakness

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Think Partners → Deeper Learning

- **Topic: Your Thoughts about Paul**
  - discuss his pattern of strengths and weaknesses in ability and skills
  - What can you conclude?

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WISC-V and CAS2

- **Why are the WISC-V and CAS2 scores so different?**
- **Because the two test measure VERY different things**
- **The only similarity is:**

Verbal Comprehension	Planning
Visual Spatial	Attention
Fluid Reasoning	Simultaneous
Working Memory	Successive
Processing Speed	

- But note, Working Memory on WISC-V includes Digit span Backwards which is Successive and Planning (Schofield & Ashman)

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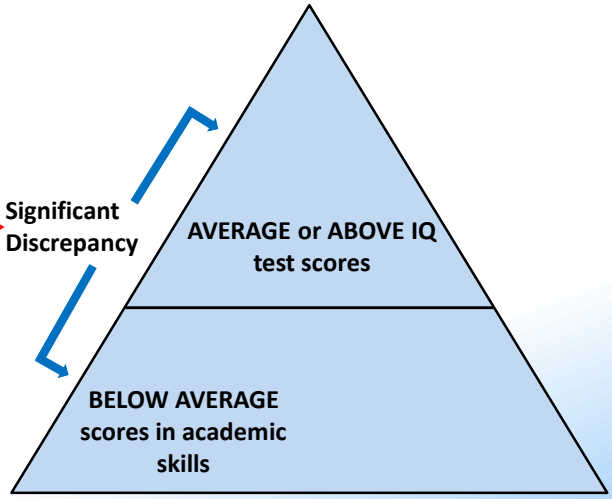
Traditional Discrepancy Approach

- **Discrepancy** between high IQ and low achievement test scores



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SLD Eligibility: We can do better

- Identify Specific Learning Disabilities (SLD) using the **Discrepancy/Consistency Method** (*Essentials of CAS2 Assessment* by Naglieri & Otero, 2017)
  - based on theoretically defined measures of neurocognitive processes rather than traditional IQ achievement discrepancy
  - The Pattern of Strengths and Weaknesses (PSW) will based on basic psychological processing scores combined with academic test scores

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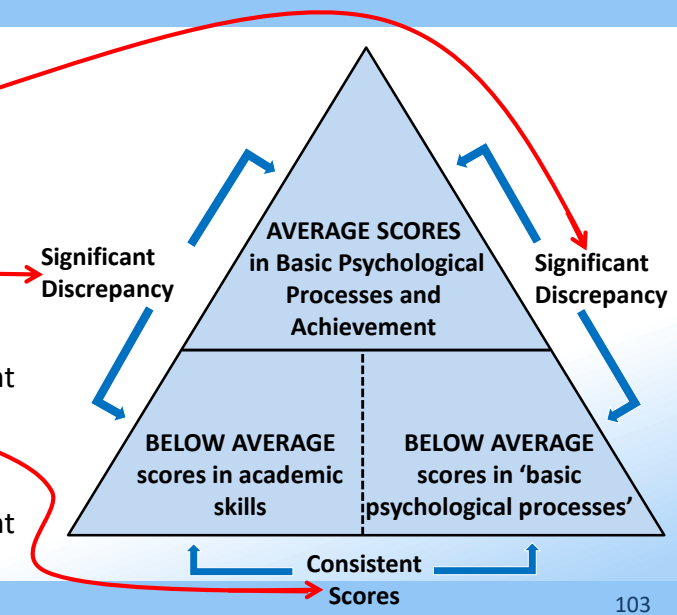
Discrepancy Consistency Method (DCM)

- **Discrepancy** between high and low processing scores
- **Discrepancy** between high processing and low achievement
- **Consistency** between low processing and low achievement



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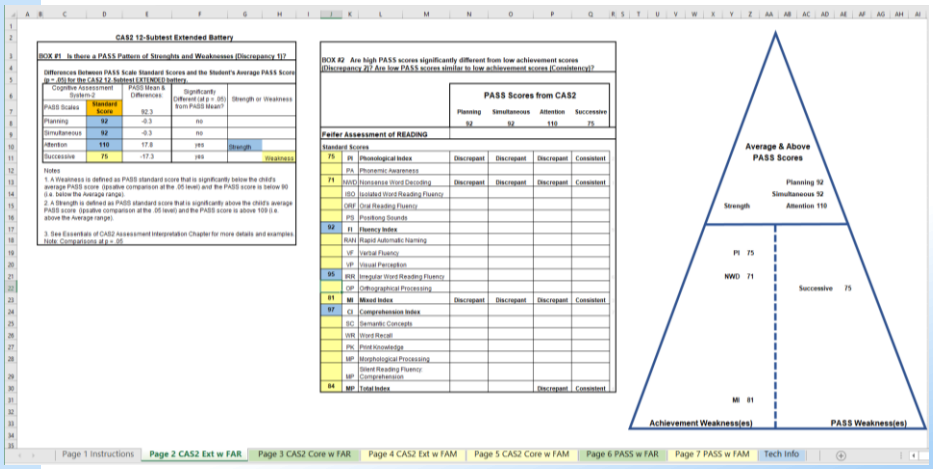
CAS2 FAR Analyzer Results for Paul

- Discrepancy Consistency Results show a PSW



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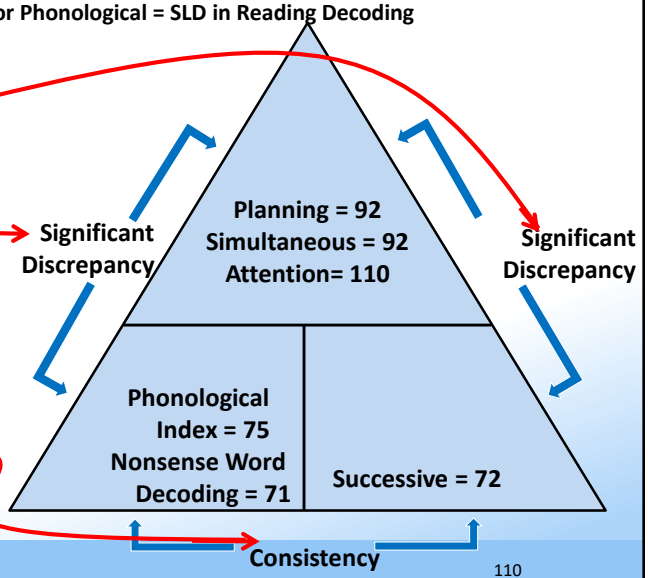
Discrepancy Consistency Method - Paul

Poor Successive + Poor Phonological = SLD in Reading Decoding

- Discrepancy between high and low processing scores
- Discrepancy between high processing and low achievement
- Consistency between low processing and low achievement



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Intervention Plan for Paul

- Explain his PASS scores to engage the student in the solutions and build confidence
- Build on His Strengths
  - Help him use his Planning, Attention, Simultaneous and Strengths to support challenges with Successive processing
- Encourage the use of metacognitive strategies (P) that can him perform better when tasks demand Successive processing
  - See Naglieri and Pickering's book

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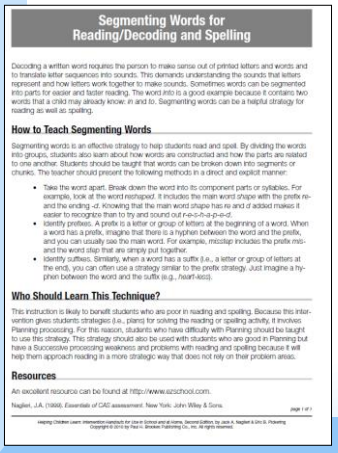
Interventions related to PASS

- *Helping Children Learn Intervention Handouts for Use in School and at Home*, *Second Edition* (Naglieri, & Pickering 2011)



Segmenting Words for Reading/Decoding and Spelling

Decoding a written word requires the person to make sense out of printed letters and words and 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 two words that a child may already know: *in* and *to*. Segmenting words can be a helpful strategy for reading as well as spelling.

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 to one another. Students should be taught that words can be broken down into segments or chunks. The teacher should present the following methods in a direct and explicit manner:

- Take the word apart. Break down the word into its component parts or syllables. For example, look at the word *reshaped*. It includes the main word *shape* with the prefix *re-* and the ending *-d*. Knowing that the main word shape has *re* and *d* added makes it easier to recognize than to try and sound out *r-e-s-h-a-p-e-d*.
- Identify prefixes. A prefix is a letter or group of letters at the beginning of a word. When a word has a prefix, imagine that there is a hyphen between the word and the prefix, and you can usually see the main word. For example, *misstep* includes the prefix *mis-* and the word *step* that are simply put together.
- Identify suffixes. Similarly, when a word has a suffix (i.e., a letter or group of letters at the end), you can often use a strategy similar to the prefix strategy. Just imagine a hyphen between the word and the suffix (e.g., *heart-less*).

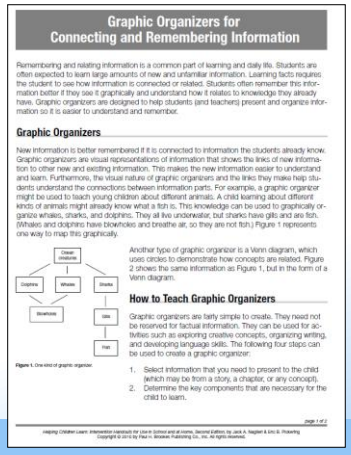
Who Should Learn This Technique?

This instruction is likely to benefit students who are poor in reading and spelling. Because this intervention gives students strategies (i.e., plans) for solving the reading or spelling activity, it involves Planning processing. For this reason, students who have difficulty with Planning should be taught to use this strategy. This strategy should also be used with students who are good in Planning but have a Successive processing weakness and problems with reading and spelling because it will help them approach reading in a more strategic way that does not rely on their problem areas.

Resources

An excellent resource can be found at http://www.ezschool.com.

Naglieri, J.A. (1988). *Essentials of CAS assessment*. New York: John Wiley & Sons.



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 graphically.

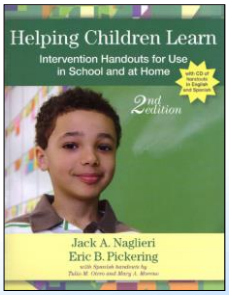
Figure 1. One kind of graphic organizer

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.



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FAR INTERPRETIVE REPORT WRITER

Fundations	FAR INTERPRETIVE REPORT WRITER: Targeted Reading Programs
Alphabetic Phonics	A multisensory phonological approach to reading that is an extension of the traditional Orton-Gillingham model. There are 11 fast-paced activities embedded within each lesson to develop automaticity with phonics skills.
Read Well	A top-down reading and language arts solution that emphasizes a mixture of instruction to the class as a whole, smaller groups, and individual student practice.
Lexia Primary Reading	A self-paced computer-based program that helps students develop reading skills. The program identifies when students would benefit from additional support, and automatically notifies the teacher with individualized feedback and recommendations.
Fast Forword Language to Reading	A scientifically-based 8-12 week reading intervention that boosts students' reading levels by one or two grades. Focuses on phonemic awareness, phonics, fluency, comprehension, and vocabulary.
Voyager Time Warp Plus	A summer reading intervention that encompasses 80 hours-worth of material. Phonemic awareness, phonics and word analysis, fluency, vocabulary, and comprehension are covered thoroughly through daily practice.
System 44	Teaches foundational reading skills to students Grades 3+. This computer-based platform encourages students to think critically and interact with the text as they learn phonics and comprehension.
Academy of Reading	An intervention program that helps students with phonemic awareness, phonics, fluency, vocabulary, and comprehension. This online program Includes real-time reading assessments and progress monitoring.
Words Their Way	A developmental spelling, phonics, and vocabulary program with numerous activities geared toward developing orthographic knowledge. Sorting, constructing a word wall, and creating a word study notebook are essential components of the program.

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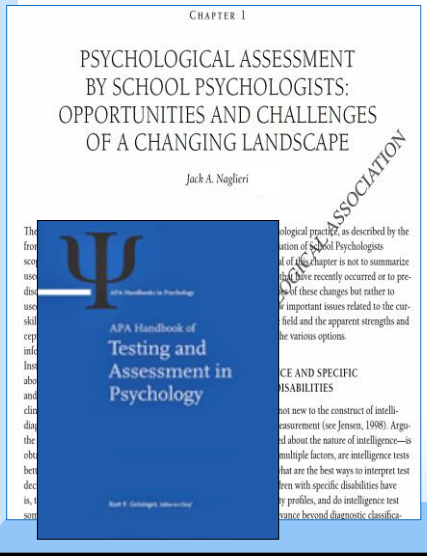
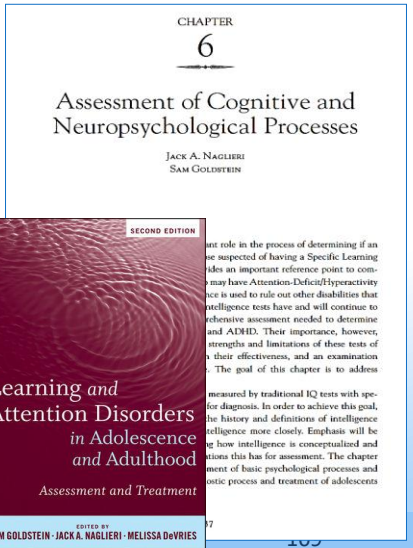
Test Profile Studies – Validity matters


CHAPTER 1

PSYCHOLOGICAL ASSESSMENT BY SCHOOL PSYCHOLOGISTS: OPPORTUNITIES AND CHALLENGES OF A CHANGING LANDSCAPE

Jack A. Naglieri


CHAPTER 6

Assessment of Cognitive and Neuropsychological Processes

JACK A. NAGLIERI
SAM GOLDSTEIN

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Naglieri & Goldstein (2011)

GROUP PROFILES BY ABILITY TEST

Because ability tests play such an important role in the diagnostic process, it is crucial to understand the sensitivity each test may have to any unique characteristics of those with an SLD or attention deficit. Clinicians need to know if an adolescent or adult has a specific deficit in ability that is related to a specific academic learning problem. There has been considerable research on, for example, Wechsler subtest profile analysis, and most researchers conclude that no profile has diagnostic utility for individuals with SLD or ADHD (Kavale & Forness, 1995). The failure of subtest profiles has led some to argue (e.g., Naglieri, 1999) that scale, rather than subtest, variability should

1. We need to know if intelligence tests yield distinctive profiles

2. Subtest profile analysis is UNSUPPORTED so use scale profiles instead

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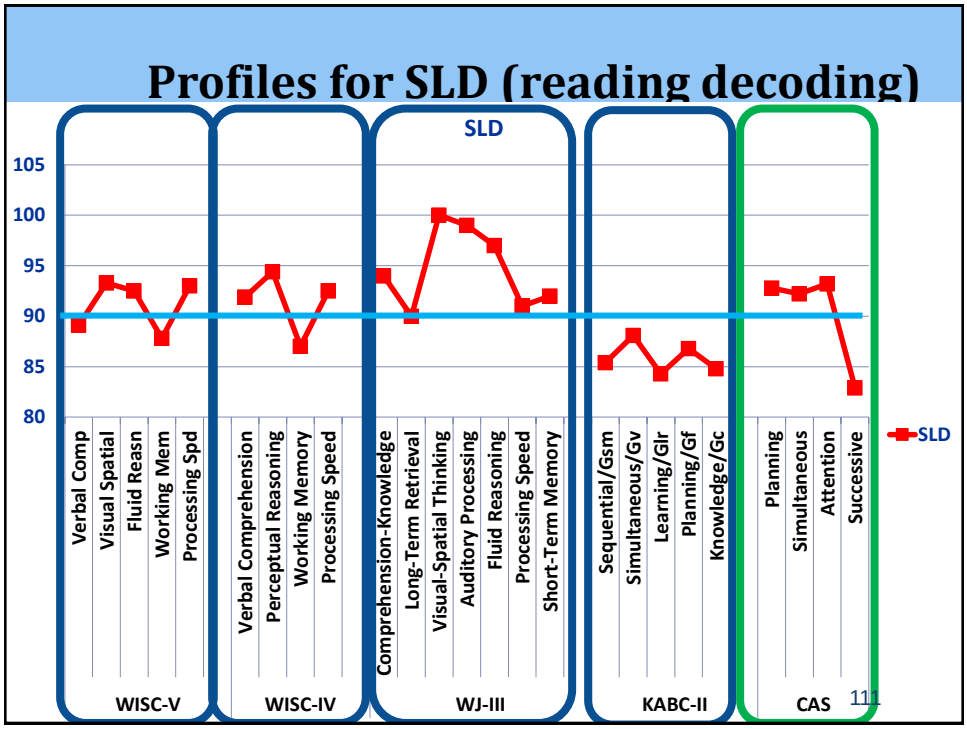
Profiles for SLD (reading decoding)
SLD
105
100
95
90
85
80
Verbal Comp
Visual Spatial
Fluid Reasn
Working Mem
Processing Spd
Verbal Comprehension
Perceptual Reasoning
Working Memory
Processing Speed
Comprehension-Knowledge
Long-Term Retrieval
Visual-Spatial Thinking
Auditory Processing
Fluid Reasoning
Processing Speed
Short-Term Memory
Sequential/Gsm
Simultaneous/Gv
Learning/Glr
Planning/Gf
Knowledge/Gc
Planning
Simultaneous
Attention
Successive
SLD
WISC-V
WISC-IV
WJ-III
KABC-II
CAS
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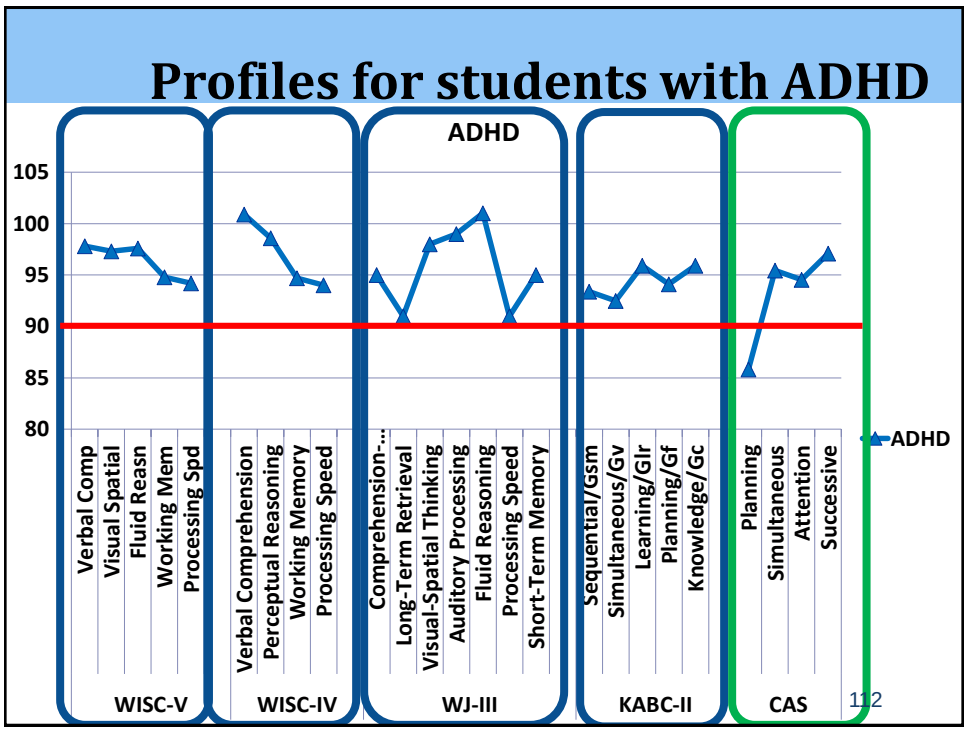
Profiles for students with ADHD
ADHD
105
100
95
90
85
80
Verbal Comp
Visual Spatial
Fluid Reasn
Working Mem
Processing Spd
Verbal Comprehension
Perceptual Reasoning
Working Memory
Processing Speed
Comprehension-...
Long-Term Retrieval
Visual-Spatial Thinking
Auditory Processing
Fluid Reasoning
Processing Speed
Short-Term Memory
Sequential/Gsm
Simultaneous/Gv
Learning/Glr
Planning/Gf
Knowledge/Gc
Planning
Simultaneous
Attention
Successive
ADHD
WISC-V
WISC-IV
WJ-III
KABC-II
CAS
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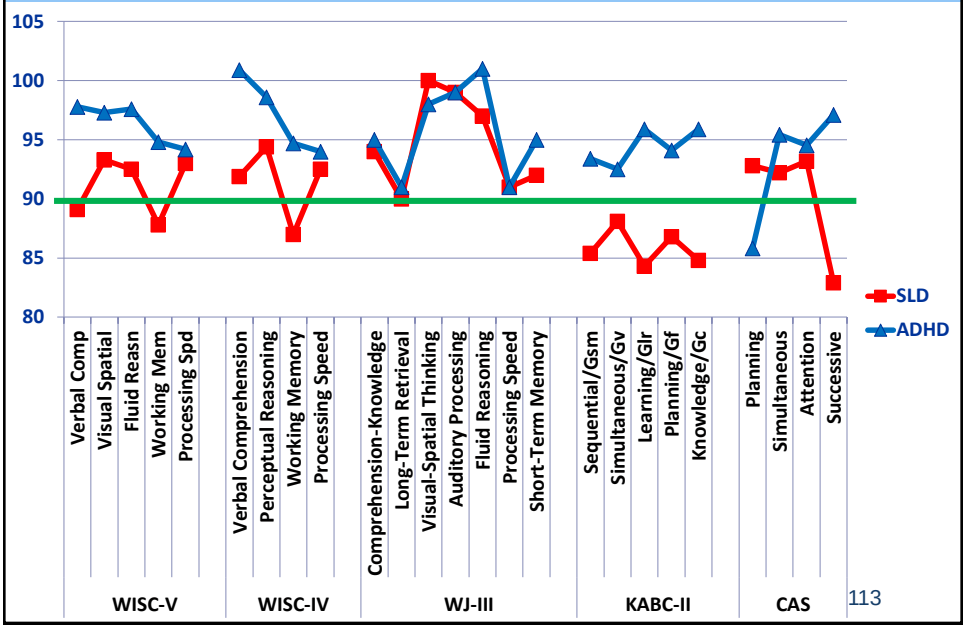
Profiles for SLD (reading decoding) & ADHD



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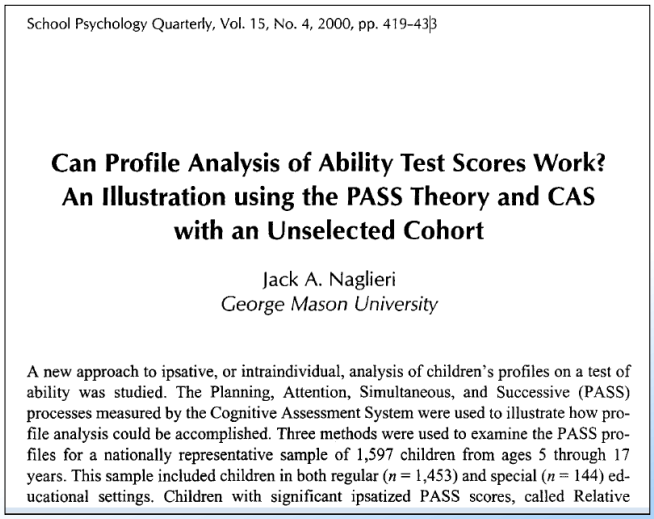
PASS Profiles and Educational Placement

Students receiving special education were more than four times as likely to have at least one PASS weakness and a comparable academic weakness than those in regular education



School Psychology Quarterly, Vol. 15, No. 4, 2000, pp. 419-43[illegible]

Can Profile Analysis of Ability Test Scores Work? An Illustration using the PASS Theory and CAS with an Unselected Cohort

Jack A. Naglieri
George Mason University

A new approach to ipsative, or intraindividual, analysis of children's profiles on a test of ability was studied. The Planning, Attention, Simultaneous, and Successive (PASS) processes measured by the Cognitive Assessment System were used to illustrate how profile analysis could be accomplished. Three methods were used to examine the PASS profiles for a nationally representative sample of 1,597 children from ages 5 through 17 years. This sample included children in both regular (n = 1,453) and special (n = 144) educational settings. Children with significant ipsatized PASS scores, called Relative

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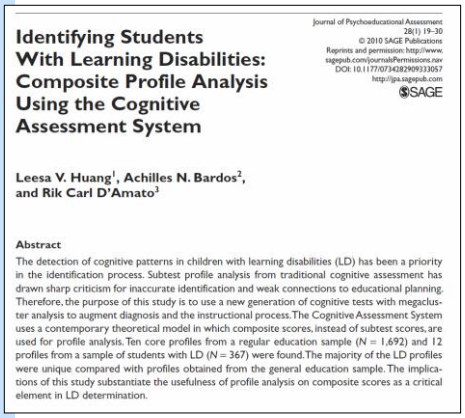
SLD Profiles on CAS



Journal of Psychoeducational Assessment
28(1) 19–30
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DOI: 10.1177/0734282909333057
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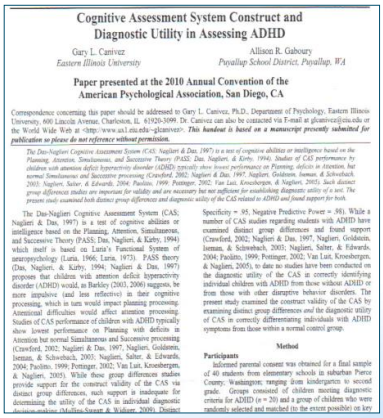
Identifying Students With Learning Disabilities: Composite Profile Analysis Using the Cognitive Assessment System

Leesa V. Huang[1], Achilles N. Bardos[2], and Rik Carl D'Amato[3]

Abstract

The detection of cognitive patterns in children with learning disabilities (LD) has been a priority in the identification process. Subtest profile analysis from traditional cognitive assessment has drawn sharp criticism for inaccurate identification and weak connections to educational planning. Therefore, the purpose of this study is to use a new generation of cognitive tests with megacluster analysis to augment diagnosis and the instructional process. The Cognitive Assessment System uses a contemporary theoretical model in which composite scores, instead of subtest scores, are used for profile analysis. Ten core profiles from a regular education sample (N = 1,692) and 12 profiles from a sample of students with LD (N = 367) were found. The majority of the LD profiles were unique compared with profiles obtained from the general education sample. The implications of this study substantiate the usefulness of profile analysis on composite scores as a critical element in LD determination.

12 profiles were found, most were unique from the general sample



Cognitive Assessment System Construct and Diagnostic Utility in Assessing ADHD

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Eastern Illinois University

Allison R. Gaboury
Puyallup School District, Puyallup, WA

Paper presented at the 2010 Annual Convention of the American Psychological Association, San Diego, CA

Correspondence concerning this paper should be addressed to Gary L. Canivez, Ph.D., Department of Psychology, Eastern Illinois University, 600 Lincoln Avenue, Charleston, IL 61920-3099. Dr. Canivez can also be contacted via E-mail at glcanivez@eiu.edu or the World Wide Web at <http://www.ux1.eiu.edu/~glcanivez>. *This handout is based on a manuscript presently submitted for publication so please do not reference without permission.*

The Das-Naglieri Cognitive Assessment System (CAS: Naglieri & Das, 1997) is a test of cognitive abilities or intelligence based on the Planning, Attention, Simultaneous, and Successive Theory (PASS: Das, Naglieri, & Kirby, 1994). Studies of CAS performance by children with attention deficit hyperactivity disorder (ADHD) typically show lowest performance on Planning, deficits in Attention, but normal Simultaneous and Successive processing (Crawford, 2002; Naglieri & Das, 1997; Naglieri, Goldstein, Iseman, & Schwebach, 2003; Naglieri, Salter, & Edwards, 2004; Paolito, 1999; Pottinger, 2002; Van Luit, Kroesbergen, & Naglieri, 2005). Such distinct group differences studies are important for validity and are necessary but not sufficient for establishing diagnostic utility of a test. The present study examined both distinct group differences and diagnostic utility of the CAS related to ADHD and found support for both.

The Das-Naglieri Cognitive Assessment System (CAS: Naglieri & Das, 1997) is a test of cognitive abilities or intelligence based on the Planning, Attention, Simultaneous, and Successive Theory (PASS; Das, Naglieri, & Kirby, 1994) which itself is based on Luria's Functional System of neuropsychology (Luria, 1966; Luria, 1973). PASS theory (Das, Naglieri, & Kirby, 1994; Naglieri & Das, 1997) proposes that children with attention deficit hyperactivity disorder (ADHD) would, as Barkley (2003, 2006) suggests, be more impulsive (and less reflective) in their cognitive processing, which in turn would impact planning processing. Attentional difficulties would affect attention processing. Studies of CAS performance of children with ADHD typically show lowest performance on Planning with deficits in Attention but normal Simultaneous and Successive processing (Crawford, 2002; Naglieri & Das, 1997; Naglieri, Goldstein, Iseman, & Schwebach, 2003; Naglieri, Salter, & Edwards, 2004; Paolito, 1999; Pottinger, 2002; Van Luit, Kroesbergen, & Naglieri, 2005). While these group differences studies provide support for the construct validity of the CAS via distinct group differences, such support is inadequate for determining the utility of the CAS in individual diagnostic decision-making (Mayfield Sweet & Widaman, 2006). Distinct Specificity = .95; Negative Predictive Power = .98). While a number of CAS studies regarding students with ADHD have examined distinct group differences and found support (Crawford, 2002; Naglieri & Das, 1997; Naglieri, Goldstein, Iseman, & Schwebach, 2003; Naglieri, Salter, & Edwards, 2004; Paolito, 1999; Pottinger, 2002; Van Luit, Kroesbergen, & Naglieri, 2005), to date no studies have been conducted on the diagnostic utility of the CAS in correctly identifying individual children with ADHD from those without ADHD or from those with other disruptive behavior disorders. The present study examined the construct validity of the CAS by examining distinct group differences *and* the diagnostic utility of CAS in correctly differentiating individuals with ADHD symptoms from those within a normal control group.

Method

Participants

Informed parental consent was obtained for a final sample of 40 students from elementary schools in suburban Pierce County, Washington; ranging from kindergarten to second grade. Groups consisted of children meeting diagnostic criteria for ADHD (n = 20) and a group of children who were randomly selected and matched (to the extent possible) on key

the CAS correctly identified students who demonstrated behaviors consistent with ADHD diagnosis

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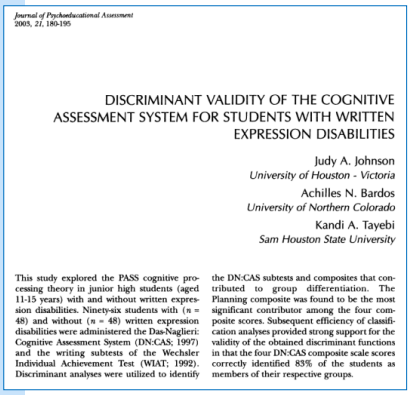
SLD Profiles on CAS



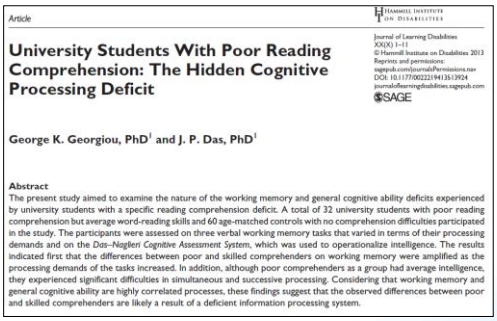
Journal of Psychoeducational Assessment
2005, 21, 180-195

DISCRIMINANT VALIDITY OF THE COGNITIVE ASSESSMENT SYSTEM FOR STUDENTS WITH WRITTEN EXPRESSION DISABILITIES

Judy A. Johnson
University of Houston - Victoria
Achilles N. Bardos
University of Northern Colorado
Kandi A. Tayebi
Sam Houston State University

This study explored the PASS cognitive processing theory in junior high students (aged 11-15 years) with and without written expression disabilities. Ninety-six students with (n = 48) and without (n = 48) written expression disabilities were administered the Das-Naglieri: Cognitive Assessment System (DN:CAS; 1997) and the writing subtests of the Wechsler Individual Achievement Test (WIAT; 1992). Discriminant analyses were utilized to identify the DN:CAS subtests and composites that contributed to group differentiation. The Planning composite was found to be the most significant contributor among the four composite scores. Subsequent efficiency of classification analyses provided strong support for the validity of the obtained discriminant functions in that the four DN:CAS composite scale scores correctly identified 83% of the students as members of their respective groups.

CAS…yields information that [differentiates] students [with] learning disability in writing"



Article

University Students With Poor Reading Comprehension: The Hidden Cognitive Processing Deficit

Journal of Learning Disabilities
XX(X) 1–11
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DOI: 10.1177/0022219413513924
journaloflearningdisabilities.sagepub.com
SAGE

George K. Georgiou, PhD[1] and J. P. Das, PhD[1]

Abstract
The present study aimed to examine the nature of the working memory and general cognitive ability deficits experienced by university students with a specific reading comprehension deficit. A total of 32 university students with poor reading comprehension but average word-reading skills and 60 age-matched controls with no comprehension difficulties participated in the study. The participants were assessed on three verbal working memory tasks that varied in terms of their processing demands and on the *Das–Naglieri Cognitive Assessment System*, which was used to operationalize intelligence. The results indicated first that the differences between poor and skilled comprehenders on working memory were amplified as the processing demands of the tasks increased. In addition, although poor comprehenders as a group had average intelligence, they experienced significant difficulties in simultaneous and successive processing. Considering that working memory and general cognitive ability are highly correlated processes, these findings suggest that the observed differences between poor and skilled comprehenders are likely a result of a deficient information processing system.

Despite average intelligence college students with poor reading comprehension were low on Simultaneous and Successive processing scores from the CAS

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Topical Outline

- Introduction
- Definition of SLD
- Measure "basic psychological process" with CAS2
- Measure reading and math with the FAR and FAM
- Using the Discrepancy Consistency Method
  - Reading Disabilities
    - Case study Paul (Successive processing disorder)
    - SE Case of Nelson (Simultaneous processing disorder)
  - Math Disabilities
    - Case study Kenny (Planning and Simultaneous)
    - Case study Jackson- (Planning and Attention)
  - CAS2 Case Study Workbook
- Conclusions

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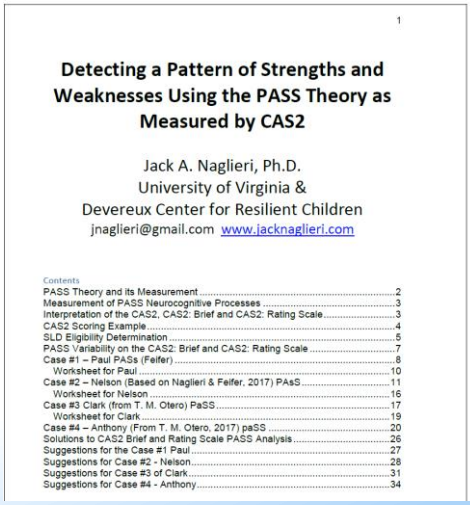
Case Study – Let's do it together…

- The case of Nelson
- We will determine if he has a PASS weakness?
- What interventions are appropriate?



1

Detecting a Pattern of Strengths and Weaknesses Using the PASS Theory as Measured by CAS2

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Devereux Center for Resilient Children
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Contents

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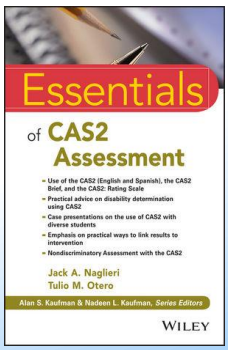
Case of Nelson (Naglieri & Feifer, 2017, Intervention Chapter 5)

- Nelson (9 year-old 4th grader) for 3 years
  - difficulty with spelling and written language math facts, and inconsistent with reading comprehending skills.
  - difficulty keeping pace with his peers and often failed to complete his work in a timely manner.
  - The Child Development Team (CDT) recommended a comprehensive psychological evaluation.



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Case of Nelson (Naglieri & Feifer, 2017)

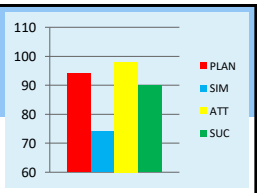

Table 5.2 Nelson's CAS2 Scoring

PASS Scales	Scaled Score	Percentile	Ability Range
CAS2 Planning: The ability to apply a strategy and self-monitor performance while working toward a solution	94	34	Average
CAS2 Attention: The ability to selectively focus on a stimulus while inhibiting responses from competing stimuli	98	45	Average
CAS2 Simultaneous Processing: The ability to reason and problem-solve by integrating separate elements into a conceptual whole, often involving visual-spatial tasks	74	4	Very low
CAS2 Successive Processing: The ability to put information into a serial order or particular sequence	90	25	Average
CAS2 Total Composite Score	89	23	Below average

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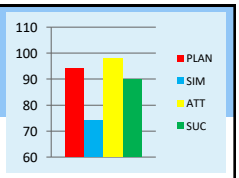
Case of Nelson (Naglieri & Feifer, 2017)



CAS2 12-Subtest Extended Battery

BOX #1 Is there a PASS Pattern of Strenghts and Weaknesses (Discrepancy 1)?

Differences Between PASS Scale Standard Scores and the Student's Average PASS Score (p = .05) for the CAS2 12-Subtest EXTENDED battery.

Cognitive Assessment System-2 PASS Scales	Standard Score	PASS Mean & Differences: 88.8	Significantly Different (at p = .05) from PASS Mean?	Strength or Weakness
Planning	94	5.2	no	
Simultaneous	74	-14.8	yes	Weakness
Attention	98	9.2	yes	
Successive	89	0.2	no	

Notes
1. A Weakness is defined as PASS standard score that is significantly below the child's average PASS score (ipsative comparison at the .05 level) *and* the PASS score is below 90 (i.e. below the Average range).
2. A Strength is defined as PASS standard score that is significantly above the child's average PASS score (ipsative comparison at the .05 level) and the PASS score is above 109 (i.e. above the Average range).

3. See Essentials of CAS2 Assessment Interpretation Chapter for more details and examples.
Note: Comparisons at p = .05

BOX #2 Are high PASS scores significantly different from low achievement scores (Discrepancy 2)? Are low PASS scores similar to low achievement scores (Consistency)?

			PASS Scores from CAS2			
			Planning 94	Simultaneous 74	Attention 98	Successive 89
Kaufman Test of Educational Achievement 3rd Edition						
Standard Scores						
	LWR	Letter & Word Recognition				
83	RC	Reading Comprehension		Consistent	Discrepant	
	NWD	nonsense Word Decoding				
	PP	Phonological Processing				
	WRF	Word Recognition Fluency				
	DF	Decoding Fluency				
80	SRF	Silent Reading Fluency		Consistent	Discrepant	
	RV	Reading Vocabulary				
	MCA	Math Concepts and Applications				
87	MCA	Math Computation				
89	MF	Math Fluency				
	WE	Written Expression				
86	SP	Spelling				
88	WF	Writing Fluency				
	LC	Listening Comprehension				
	OE	Oral Expression				
	AF	Associational Fluency				
	ONF	Object Naming Facility				
	LNF	Letter Naming Facility				

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Case of Nelson (Naglieri & Feifer, 2017)

Table 5.6 Nelson's Scores on the Feifer Assessment of Reading (FAR)

FAR Index	Standard Score (95% CI)	Percentile	Qualitative Descriptor
Phonological Index	90 (±5)	25	Average
Fluency Index	73 (±7)	3	Moderately below average
Mixed Index	81 (±5)	10	Below average
Comprehension Index	97 (±8)	42	Average
FAR Total Index	84 (±5)	14	Below average

Table 5.3 Nelson's Scores on the KTEA-III Reading Subtests

Reading	Age Norms	Percentile	Range
Reading Comprehension: The student reads a word and points to its corresponding picture or reads a simple instruction and responds by performing the action.	83 ± 10	13	Below average
Silent Reading Fluency: The student is required to read as many statements as possible in 2 minutes and must respond either "yes" or "no" as to whether each statement is valid.	80 ± 11	9	Below average
KTEA-III Reading Composite Score	81 ± 6	10	Below average

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Case of Nelson (Naglieri & Feifer, 2017)

Table 5.4 Nelson's Scores on the KTEA-III Math Subtests

Math	Age Norms	Percentile	Range
Math Computation: The student solves math equations in the response booklet including addition and subtraction.	87 ± 10	19	Below average
Math Fluency: This is a timed task requiring the student to solve as many single-digit addition, subtraction, multiplication, and division problems in a minute.	89 ± 11	23	Below average
KTEA-III Math Composite Score	90 ± 6	25	Average
Spelling: The student is required to spell words of increasing difficulty dictated by the examiner.	86 ± 5	18	Below average
Writing Fluency: The student has 5 minutes to write as many sentences as possible describing various pictures.	88 ± 14	21	Below average
KTEA-III Written Language	87 ± 6	19	Below average

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Case of Nelson (Naglieri & Feifer, 2017)

- Nelson's history of reading problems and interventions to address this, slower reading speed, difficulty reading phonetically irregular words, and poor **Simultaneous**

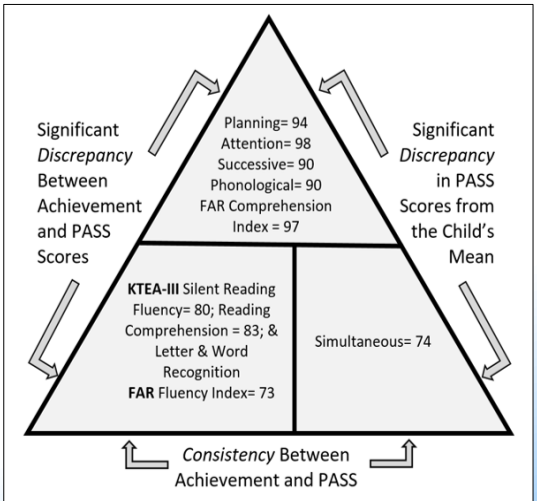

Figure 5.5 Nelson's Discrepancy/Consistency Method of SLD Results

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Topical Outline

- Introduction
- Definition of SLD
- Measure "basic psychological process" with CAS2
- Measure reading and math with the FAR and FAM
- Using the Discrepancy Consistency Method
  - Reading Disabilities
    - Case study Paul (Successive processing disorder)
    - Case of Nelson (Simultaneous processing disorder)
  - Math Disabilities
    - Case study Kenny (Planning and Simultaneous)
    - Case study Jackson- (Planning and Attention)
  - CAS2 Case Study Workbook
- Conclusions

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What is a Math Disability?

***Dyscalculia** – children with specific math-related deficits, including : a) Learning and retrieving mathematical facts

(Language Retrieval)

b) Executing math calculation procedures

(Working Memory)

c) Basic number sense and concept development

(Executive Functioning)

Math Learning Disability (MLD) - a generic term referring to children whose math performance in the classroom is substantially below age- and grade-level expectations. Often used when there is unexpected underachievement.

* Up to **20%** of school age children have MLD or persistent difficulty with math (Iuculano et al., 2015)

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Steven G. Feifer, DEd

Dyscalculia Subtypes

- **Procedural** – a deficit in the ability to count, order, or sequence numbers or mathematical procedures. Often, there are limitations with symbolic working memory and pattern recognition. **(PASS: Successive)**

- **Verbal** – an inability to use language-based procedures to assist in arithmetic skills. Difficulties with rapid number identification skills, and retrieving stored mathematical facts. **(PASS: Attention)**

- **Semantic** – a core deficit in both visual-spatial and conceptual components of mathematics . Deficits include poor estimation skills, difficulty aligning numbers in columns, poor magnitude representations, and difficulty selecting a particular mathematical strategy to solve real world problems. **(Planning & Simultaneous)**

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- A neurodevelopmental assessment of mathematics
- Pre-K to College (Ages 4-21)
- Normative sample included 1,061 students
- 19 subtests in complete battery
- Diagnoses **3** subtypes of math disorders
- Includes the FAM-S dyscalculia screening battery
- Total Fam index score and **3** math index scores:
  - a) Procedural subtype
  - b) Verbal subtype
  - c) Semantic subtype
- **Qualification Level:** S or B

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Structure of the FAM

Index	Subtest	Grade range	Approximate administration time
Procedural Index (PI)	Forward Number Count (FNC)	PK to college	5 minutes
	Backward Number Count (BNC)	K to college	5 minutes
	Numeric Capacity (NCA)	PK to college	3 minutes
	Sequences (SEQ)	PK to college	5 minutes
	Object Counting (OC)	PK to Grade 2	5 minutes
Verbal Index (VI)	Rapid Number Naming (RNN)	PK to college	1 minute
	Addition Fluency (AF)	K to college	1 minute
	Subtraction Fluency (SF)	K to college	1 minute
	Multiplication Fluency (MF)	Grade 3 to college	1 minute
	Division Fluency (DF)	Grade 3 to college	1 minute
	Linguistic Math Concepts (LMC)	PK to college	6 minutes
Semantic Index (SI)	Spatial Memory (SM)	PK to college	5 minutes
	Equation Building (EB)	Grade 3 to college	4 to 6 minutes
	Perceptual Estimation (PE)	PK to college	5 minutes
	Number Comparison (NCO)	PK to college	2 minutes
	Addition Knowledge (AK)	K to college	2 minutes
	Subtraction Knowledge (SK)	K to college	2 minutes
	Multiplication Knowledge (MK)	Grade 3 to college	2 minutes
	Division Knowledge (DK)	Grade 3 to college	2 minutes

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    - Case study Jackson- (Planning and Attention)
  - CAS2 Case Study Workbook
- Conclusions

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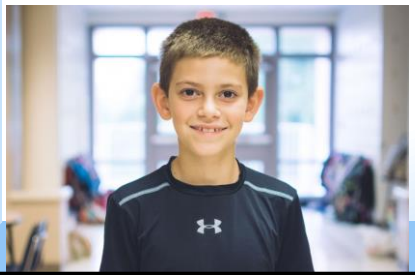
Kenny – 8 years old

- 3rd grade and struggles retaining basic math facts.
- Often fails most tests and quizzes.
- Limited conceptual understanding of math.
- Tends to count on his fingers when working.
- Reading and writing skills commensurate with age and grade level.



* No behavior or attention concerns.

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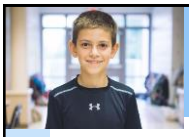

Kenny 8 years-old

CAS-2	COMPOSITE SCORE	RANGE	PERCENTILE RANK
Planning: the ability to apply a strategy, and self-monitor and self- correct performance while working toward a solution.	**79**	**Poor**	**8%**
Attention: the ability to selectively focus on a stimulus while inhibiting responses from competing stimuli.	**103**	**Average**	**58%**
Simultaneous Processing- is the ability to reason and problem solve by integrating separate elements into a conceptual whole, and often requires strong visual-spatial problem solving skills.	**74**	**Poor**	**5%**
Successive Processing- is the ability to put information into a serial order or particular sequence.	**94**	**Average**	**34%**
CAS-2 COMPOSITE SCORE	**88**	**Below Average**	**21%**

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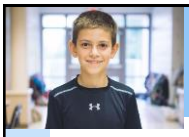

Kenny 8 Years-old

KTEA III Math Subtests	Standard Score	Percentile	Range
Math Concepts & Applications – the student responds orally to applied math problems involving number concepts, time, and measurement.	80	9%	Below Average
Math Computation – an untimed test requiring student to solve math equations including addition, subtraction, multiplication and division.	88	21%	Below Average
Math Fluency – the student solves as many basic problems as possible in one minute	85	16%	Below Average
KTEA III Math Composite	82	12%	Below Average

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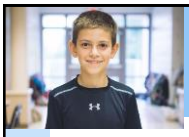

Kenny 8 Years-old

FAM Index	Standard Score	Percentile	Range
Procedural Index – measures the ability to count, order, and/or sequence numbers.	90	25%	Average
Verbal Index – measures the ability to automatically identify numbers, retrieve facts, and understand math terminology.	83	13%	Below Average
Semantic Index – measures the ability to determine magnitude representations, estimation, pattern recognition, and quantitative reasoning.	75	5%	Moderately Below Average
FAM TOTAL INDEX	79	8%	Moderately Below Average

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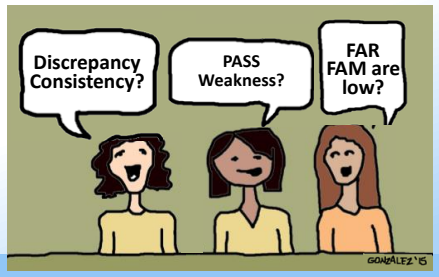
Think Partners → Deeper Learning

- **Topic: Your Thoughts about Kenny**
  - discuss his pattern of strengths and weaknesses in ability and skills
  - Is there a PASS weakness and similarly low achievement score?



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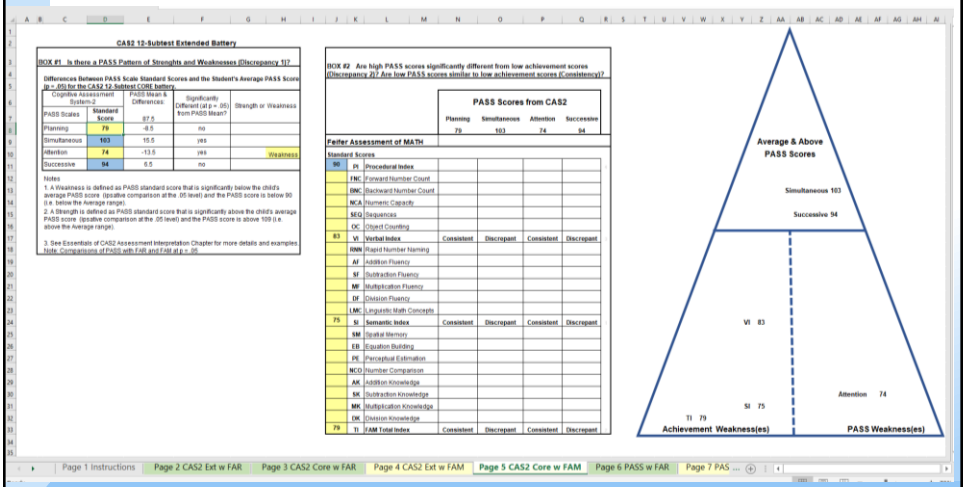
CAS2 & FAM Analyzer Results for Kenny

- Discrepancy Consistency Method shows a PSW



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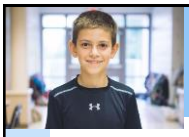
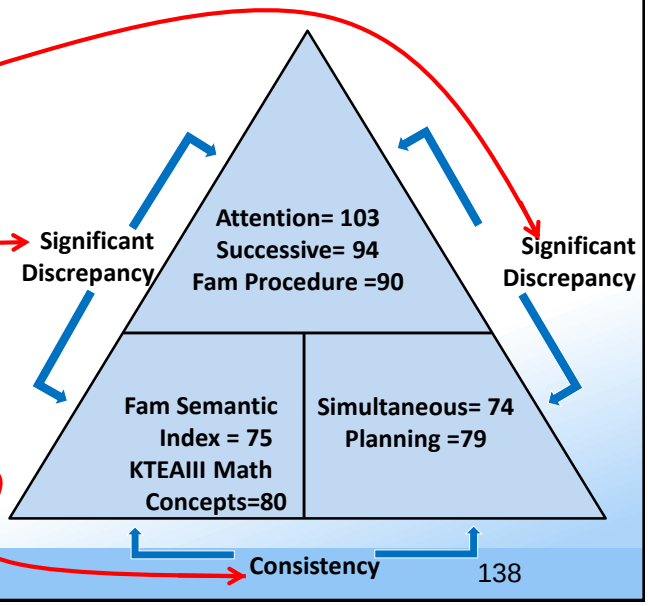


Discrepancy Consistency for Kenny

- Discrepancy between high and low processing scores
- Discrepancy between high processing and low achievement
- Consistency between low processing and low achievement



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CAS-2 Simultaneous and Math

➢**Simultaneous Processing**– the ability to integrate separate elements into a conceptual whole, and often requires visual-spatial problem solving skills.

➢**Simultaneous & Math** – underscores the ability to subitize, estimate, align columns of numbers, and develop a visual-spatial representation (nonsymbolic) of magnitudes and amounts. Essential in the core development of "number sense".

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How to Pair CAS2 & FAM

➢**CAS2** - determine if there is a cognitive processing weakness (i.e. Planning & Simultaneous) and whether that particular weakness directly impacts mathematics.

➢**FAM**: The Semantic Index on the FAM is heavily dependent upon both Planning and Simultaneous processing.

Poor **Planning** (CAS-2) ✚ Poor **Semantic Index** (FAM) 〓
SLD in Mathematical Problem Solving (**Semantic Dyscalculia)**

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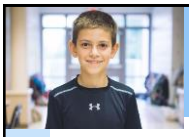

FAM Report Writer:
Semantic Dyscalculia

1. Math Word Walls – create classroom charts or individual desk laminates with math vocabulary terms, magnitude representations through pictures, and numeric equations and facts as a reference guide.

2. Answers Provided – administer math worksheets with the answers already provided to the equations. Half should be correct answers, and the other half are incorrect. Have the student identify all of the correct answers and verbally explain "why" the answer is correct, and draw a picture to demonstrate "why" the answer is not correct.

3. Think in Pictures – present word problems to students, and have them draw a picture or represent the equation using a picture, outline, or bar graph, not a numeric equation. This will develop greater conceptual understanding and heighten magnitude representational skills. The Singapore math curriculum is based upon a bar graph representation to assist students.

4. Language Notebook - Create a notebook with a vocabulary list of specific math terminology. Have Kenny define math terms and write their meanings by giving specific examples.

5. Equation Dictation – Have Kenny write or "set up" a math equation from a verbal sentence.

6. Fact Family Charts - Create a math fact family chart and place it in a clear sheet protector. The sheet protector works as a dry erase board, so students can write in the fact family with a dry erase marker as the instructor says the problem aloud.

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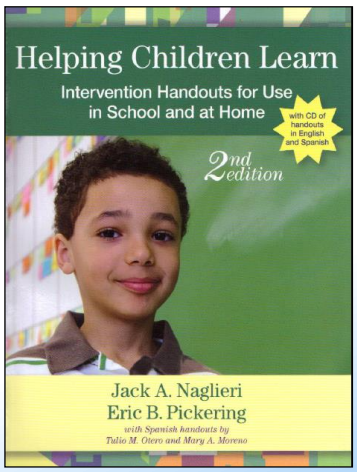
Helping Children Learn Resources

- Kenny needs:
- To understand his PASS strengths (Successive & Attention) and weaknesses (Planning & Simultaneous)
  - Planning Facilitation
    - Strategies for Learning Basic Math Facts
    - Touch Math for Calculation



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Hammill Institute on Disabilities

Journal of Learning Disabilities
44(2) 184–195

DOI: 10.1177/0022219410391190
http://journaloflearningdisabilities
.sagepub.com
SAGE

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

Jackie S. Iseman[1] and Jack A. Naglieri[1]

Abstract

The authors examined the effectiveness of cognitive strategy instruction
Successive) given by special education teachers to students with ADHD
experimental group were exposed to a brief cognitive strategy instructi
development and application of effective planning for mathematical comp
standard math instruction. Standardized tests of cognitive processes a
students completed math worksheets throughout the experimental ph
Johnson Tests of Achievement, Third Edition, Math Fluency and *Wechsle*
Numerical Operations) were administered pre- and postintervention, a
follow-up. Large pre–post effect sizes were found for students in the exp
math worksheets (0.85 and 0.26), Math Fluency (1.17 and 0.09), and Nu
At 1 year follow-up, the experimental group continued to outperform t
students with ADHD evidenced greater improvement in math worksh
(which measured the skill of generalizing learned strategies to other sin
when provided the PASS-based cognitive strategy instruction.

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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
Control Group	Complete math worksheet	Normal Math Instruction	Complete math worksheet
Experimental Group	Complete math worksheet	Planning Facilitation	Complete math worksheet

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Planning (Metacognitive) 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?

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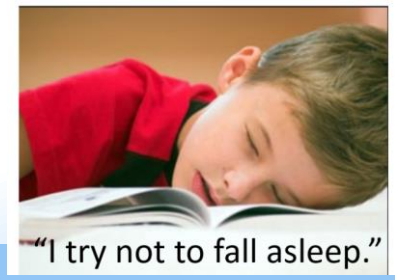
Student Plans

- "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."



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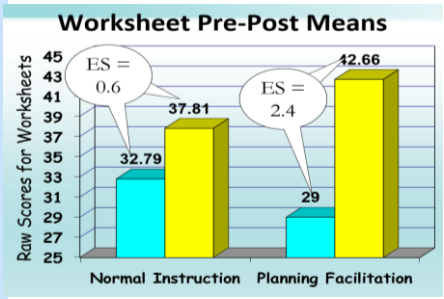
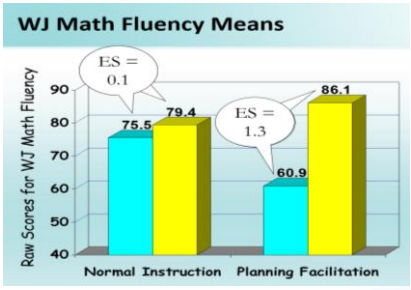
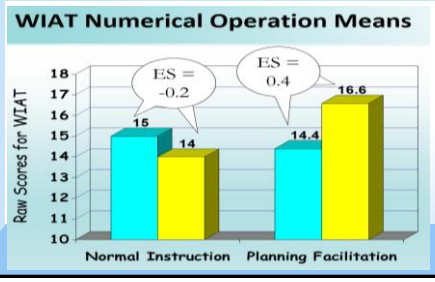
Pre-Post Means and Effect Sizes for the Students with LD and ADHD







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 ($M = 3.21$, $SD = 18.21$, $d = 0.09$).

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Summary of PASS Intervention Research in Essentials of CAS2

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We can connect PASS to…

INSTRUCTION

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    - Case study Jackson- (Planning and Attention)
  - CAS2 Case Study Workbook
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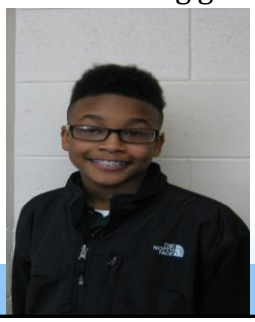
Jackson: 13 yrs old

- 7th grader who makes careless mistakes in math.
- Needs excessive time to complete homework.
- Good conceptual understanding of math, though often misses important details.
- Tends to forget steps when problem solving.
- Declining grades in math.



* Seems to lack confidence in mathematics.

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Jackson 13 years-old

CAS-2	COMPOSITE SCORE	RANGE	PERCENTILE RANK
Planning: the ability to apply a strategy, and self-monitor and self- correct performance while working toward a solution.	**101**	**Average**	**53%**
Attention: the ability to selectively focus on a stimulus while inhibiting responses from competing stimuli.	**81**	**Below Average**	**10%**
***Simultaneous Processing*-** is the ability to reason and problem solve by integrating separate elements into a conceptual whole, and often requires strong visual-spatial problem solving skills.	**104**	**Average**	**61%**
***Successive Processing*-** is the ability to put information into a serial order or particular sequence.	**83**	**Below Average**	**13%**
CAS-2 COMPOSITE SCORE	**92**	**Average**	**30%**

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Jackson 13 years-old

KTEA III Math Subtests	Standard Score	Percentile	Range
Math Concepts & Applications – the student responds orally to applied math problems involving number concepts, time, and measurement.	94	34%	Average
Math Computation – an untimed test requiring student to solve math equations including addition, subtraction, multiplication and division.	82	12%	Below Average
Math Fluency – the student solves as many basic problems as possible in one minute	90	25%	Average
KTEA III Math Composite	86	18%	Below Average

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Jackson 13 years-old

FAM Index	Standard Score	Percentile	Range
Procedural Index – measures the ability to count, order, and/or sequence numbers.	74	4%	Moderately Below Average
Verbal Index – measures the ability to automatically identify numbers, retrieve facts, and understand math terminology.	90	25%	Average
Semantic Index – measures the ability to determine magnitude representations, estimation, pattern recognition, and quantitative reasoning.	94	34%	Average
FAM TOTAL INDEX	85	16%	Below Average

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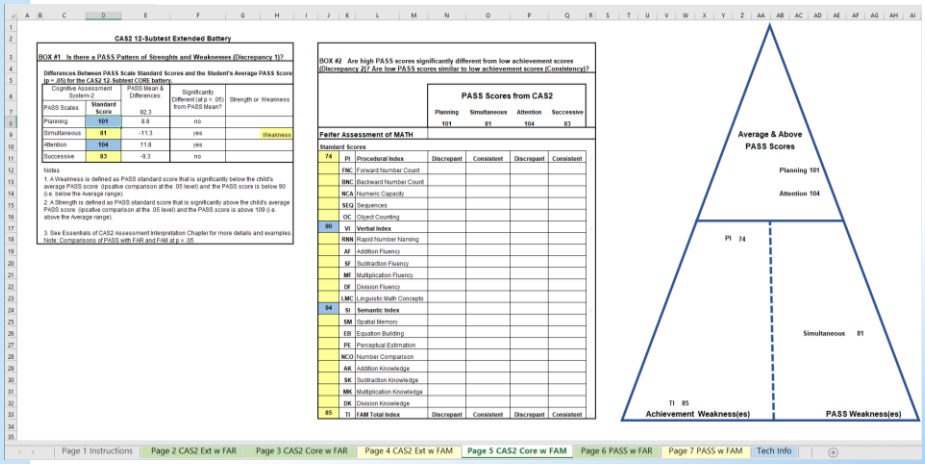
CAS2 & FAM Analyzer Results for Jackson

- Discrepancy Consistency Method shows a PSW



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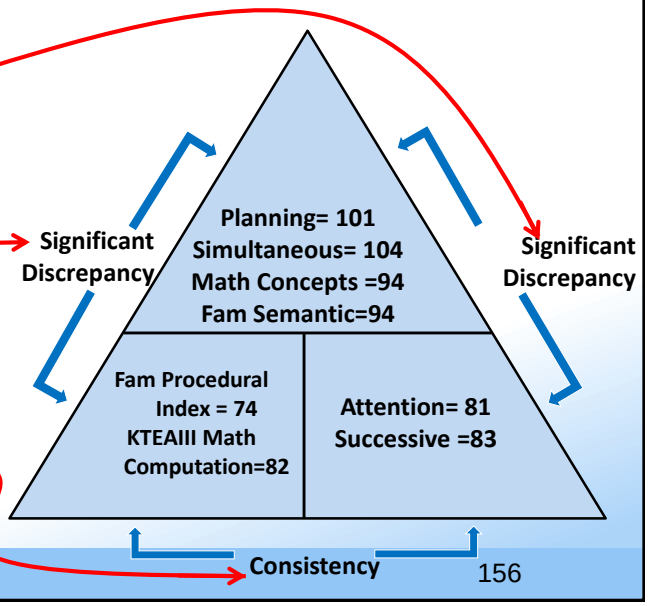
Discrepancy Consistency for Jackson

- Discrepancy between high and low processing scores
- Discrepancy between high processing and low achievement
- Consistency between low processing and low achievement



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How to Pair CAS2 & FAM

➢**CAS2** - determine if there is a cognitive processing weakness (i.e. Successive) and whether that particular weakness directly impacts mathematics.

➢**FAM**: The Procedural Index on the FAM is heavily dependent upon Successive processing.

Poor Successive (CAS2) ✚ Poor Procedural (FAM) 〓
SLD in Mathematical Problem Solving
(Procedural Dyscalculia)

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FAM Report Writer:
Procedural Dyscalculia

1. FNWS/BNWS – place emphasis on developing a Forward Number Word Sequence and Backward Number Word Sequence by skip counting out loud from various increments. Begin with whole numbers *(i.e. "Count backwards by 6's from the number 136" and then incorporate fractions and decimals "Count forwards from 3's by 1/3rd")*
2. Hundreds Chart - A hundreds chart will assist students in developing a greater sense of number patterns and relationships. Place a chip on the chart, and ask students to move the chip by various increments on the chart.
3. Abacus Training – Using a color-coded abacus helps to reinforce magnitude representation of numbers and develop more automatic counting skills. The beads should be color-code and divided into two groups of five for each row.
4. Sequence Sense – practice developing an understanding of basic number patterns and how numerals sequentially relate to one another. For instance, present a number pattern such as 3 -6 – 9 - ___ - 15. First, allow Jackson to use manipulatives and/or paper and pencil To solve, and eventually try solving without any manipulatives.
5. Vertical number lines – attach a number line that runs vertically beside Jackson's desk. This will aid in developing a better feel for spatial relationships between numbers.
6. Student directed algorithms - Instead of memorizing a singular method for problem solving, students should be taught multiple methods and select their own, rather than be forced to abide by the teacher's method.

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FAM Report Writer:
Websites and Apps

1. Khan Academy *https://www.khanacademy.org/*

The Khan Academy is full of helpful videos explaining a variety of math topics, as well as other academic topics. There is an initial pre-test upon first logging in that determines appropriate starting levels.

2. Hooda Math *http://www.hoodamath.com/*

Hooda Math is geared toward helping kids practice and learn through games and computer activities. Specific math topics include addition, subtraction, multiplication, addition, geometry, basic physics, fractions, integers, and algebra.

3. Estimation 180 *http://www.estimation180.com*

Estimation 180 is a website that presents a new estimation challenge every day of the school year.

4. Patrick JMT *http://patrickjmt.com/*

The "JMT" in Patrick JMT stands for "Just Math Tutorials." This website has clear math videos on a variety of math related topics.

5. Cool Math 4 Kids *https://www.coolmath4kids.com*

A highly entertaining and interactive website offering games, activities, puzzles, and challenges for a variety of math topics for children.

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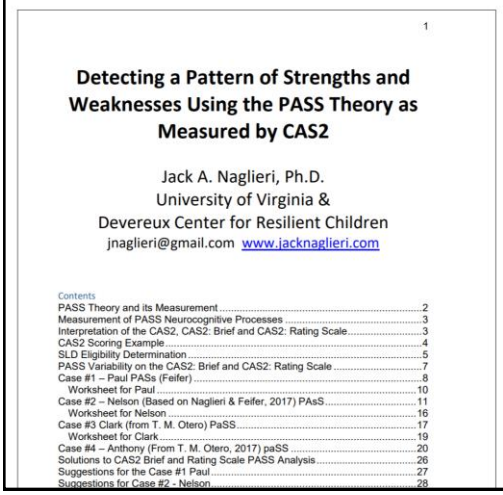
Think Partners Look at Case Workbook

- Open the Case Study Workbook and complete one of the examples


1

Detecting a Pattern of Strengths and Weaknesses Using the PASS Theory as Measured by CAS2

Jack A. Naglieri, Ph.D.
University of Virginia &
Devereux Center for Resilient Children
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    - Case study Paul (Successive processing disorder)
    - Case of Nelson (Simultaneous processing disorder)
  - Math Disabilities
    - Case study Kenny (Planning and Simultaneous)
    - Case study Jackson- (Planning and Attention)
  - CAS2 Case Study Workbook
- Conclusions

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WE CAN DO BETTER

- CAS2, FAR and FAM are based upon a neurocognitive theory of brain functioning.
- Using these measures is a time-efficient way to measure basic psychological processes and their influence of academic skill acquisition and execution
- Detect a pattern of cognitive and academic strengths and weaknesses using the Discrepancy Consistency Method (DCM) to diagnose SLD
- DCM explains ***WHY*** a student is having math difficulty, by showing **HOW** a student thinks about reading or math
- Directly informs intervention decision making
- This approach puts the "I" back into IEP's!!!

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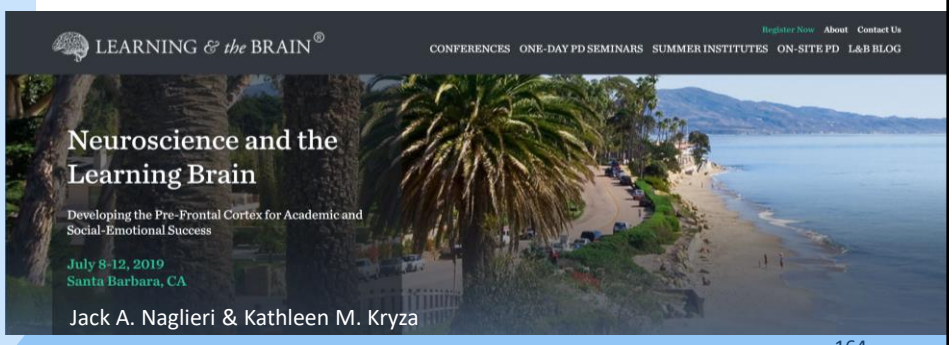
Learning & the Brain Summer Institute 2019

July 8-12 by Naglieri & Kryza

https://www.learningandthebrain.com/Event-395/Neuroscience-and-the-Learning-Brain/

In this Institute, you will learn about the four PASS neurocognitive abilities that are critical to students' academic and social-emotional success and how to match those abilities to specific instructional methods. You will leave with readily implementable strategies to teach students to effectively self-regulate their own academic and social-emotional lives.



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