How to Use a Pattern of Strengths and Weaknesses in PASS Neurocognitive Processes for SLD Identification and Intervention Planning

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Resources and Disclosures

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Presentation Outline

- Introduction
  - Using groups to stimulate thinking
  - How traditional IQ has influenced us
- A new way of thinking about intelligence
  - PASS theory defines basic psychological processes
    - Each PASS ability, case studies and interventions
  - How to measure PASS neurocognitive processes
- Final thoughts

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Core Groups – Stimulates Thinking

- Groups of 4-6
- Introduce yourself to the group
- Establish roles:
  - **O**rganizer (keep
  - **C**oach
  - **R**ecorder
  - **E**nergizer

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Traditional IQ and Achievement Tests

- When I conducted my comprehensive evaluations, 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!
- That is still true today…

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Thinking vs Knowing

We should NOT measure intelligence with tests that demand knowledge!

- 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

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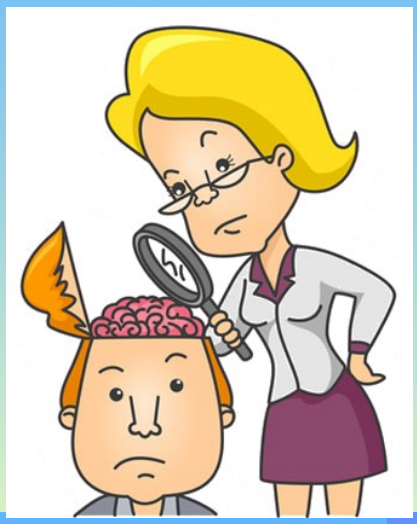
Cognition or Knowledge?

- 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* – ***'basic psychological processes'***
- We must assess ability and achievement separately

WHY DO WE MEASURE IQ THE WAY WE DO?

THE HISTORY OF IQ TESTS



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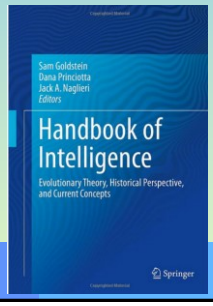
Evolution of IQ

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



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

Jack A. Naglieri

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

Context

April 6, 1917, is remembered as the day the United States entered World War I. On that same day a group of psychologists held a meeting in Harvard University's Emerson Hall to discuss the possible role they could play with the war effort (Yerkes 1921). The group agreed that psychological knowledge and methods could be of importance to the military and utilized to increase the efficiency of the Army and Navy personnel. The group included Robert Yerkes, Training School in Vineland, New Jersey, on May 28. The committee considered many types of group tests and several that Arthur S. Otis developed when working on his doctorate under Lewis Terman at Stanford University. The goal was to find tests that could efficiently evaluate a wide variety of men, be easy to administer in the group format, and be easy to score. By June 9, 1917, the materials were ready for an initial trial. Men who had some educational background and could speak English were administered the verbal and quantitative (Alpha) tests and those that could not read the newspaper or speak English were given

Origins of Traditional IQ

April 6, 1917 was the day the United States entered World War I.

On that same day a group of psychologists held a meeting in **Harvard University's Emerson Hall** to discuss the possible role psychologists could play with the war effort (Yerkes, 1921). Some of the members: Yerkes, Thorndike, Seashore, Terman, Otis and others…

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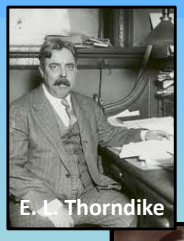
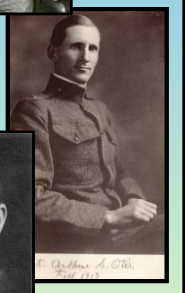
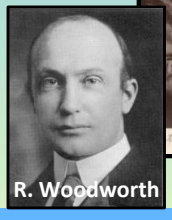
Origins of Traditional IQ

- They met at the Training School in Vineland, New Jersey in May of 1917 to construct an ability test
- By July of 1917 they concluded that the Army Alpha and Beta tests could
  - "aid in segregating and eliminating the mentally incompetent, classify men according to their mental ability; and assist in selecting competent men for responsible positions" (p. 19, Yerkes, 1921).
- What did these test look like?







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From Alpha/Beta to Wechsler IQ

- Army Alpha
  - Synonym- Antonym
  - Disarranged Sentences
  - Number Series
  - Arithmetic Problems
  - Analogies
  - Information

Verbal & Quantitative

- Army Beta
  - Maze
  - Cube Imitation
  - Cube Construction
  - Digit Symbol
  - Pictorial Completion
  - Geometrical Construction

Nonverbal

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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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The First IQ Test: Beta (Nonverbal)

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.

- There is no mention of measuring verbal and nonverbal intelligences
- Verbal tests posed a **social justice issue**

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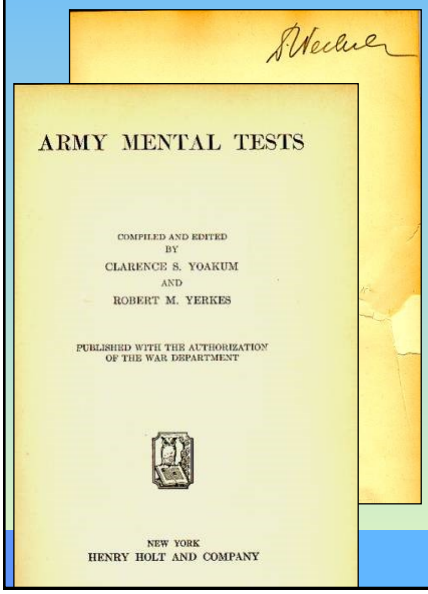
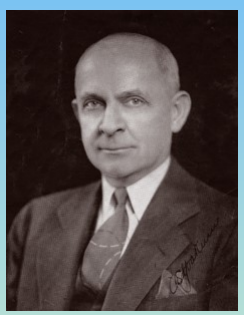
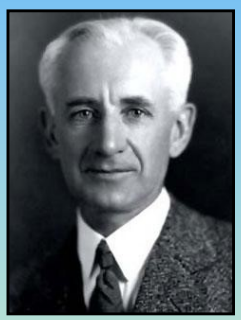
From Alpha/Beta to Wechsler IQ







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

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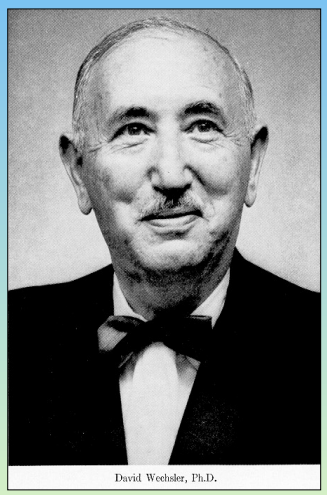
Wechsler's Definition

- Definition of intelligence does not mention verbal or nonverbal *abilities*:

  "The aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment (1939)"



David Wechsler, Ph.D.

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What a Nonverbal Test Measures

(Naglieri, Brulles, & Lansdown, 2008)

wrote: "the subtests are *different measures of intelligence*, not *measures of different kinds of intelligence"* (p. 64). Similarly, Naglieri (2003) further clarified that "the term nonverbal refers to the content of the test, not a type of ability" (p. 2). Thus, tests may differ in their content or specific demands, but still measure the concept of general intelligence.

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Myth of Verbal IQ - Conclusions

- The lack of a clear distinction between ability and achievement tests has corrupted the very concept of IQ
  - Students with limited education are disadvantaged when assessed with Verbal and Quantitative "ability" tests
- The result is
  - over-representation of minorities in special education is a significant problem (Naglieri & Rojahn, 2000).
  - under-representation Black, Hispanic, and Native American students by 50% to 70% (U.S. Dept of Education, 1993) – 727,000 people K-12th grade

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Myth of Verbal IQ - Conclusions

- The lack of a clear distinction between ability and achievement tests has corrupted the very concept of "verbal ability"
- A child who does not have an adequately enriched educational experience (ELL, SLD, etc.) will be at disadvantage when assessed with so-called Verbal and Quantitative reasoning "ability" tests

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Case of Alejandro

Note: this is not a picture of Alejandro

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

REASON FOR REFERRAL

- Academic:
  - 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

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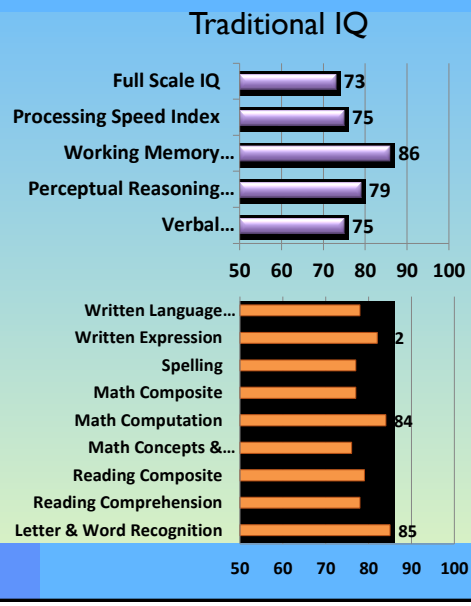
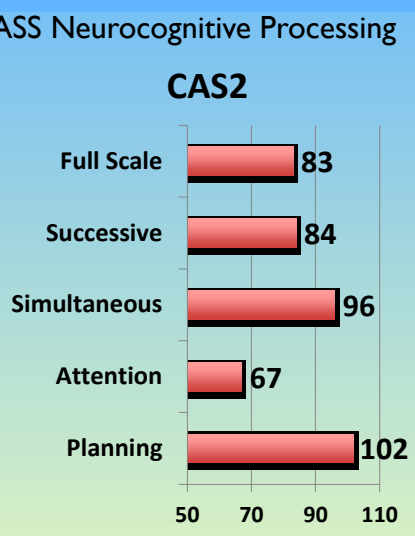
Alejandro's Results





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Alejandro's Discrepancy Consistency Results

- Alejandro is not a 'slow learner'
- He as a specific learning disability
  - Basic psychological processing disorders in Attention and Successive processing with academic failure
  - He has good scores in Planning and Simultaneous processing
  - He has had adequate educational instruction
- How would we identify his SLD?

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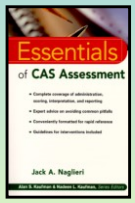
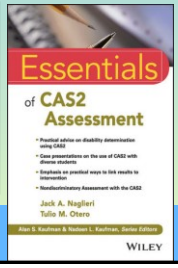
Discrepancy Consistency Method (DCM)

- 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

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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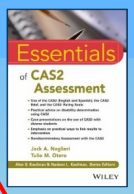
Discrepancy Consistency Method for SLD

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

The consistency between low cognitive processing and low achievement **answers the question: WHY the student fails**



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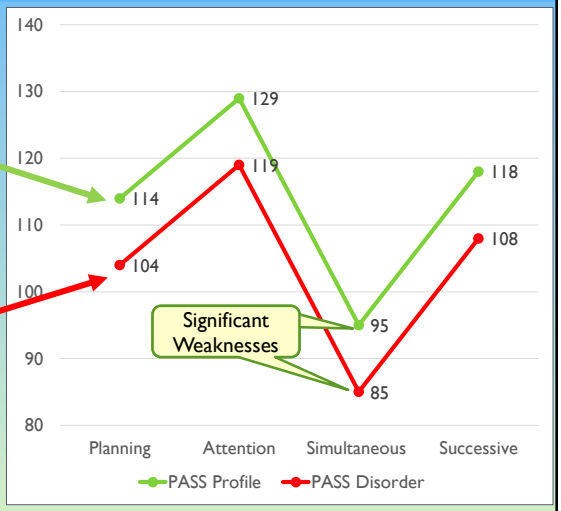
How to Determine a Disorder

- 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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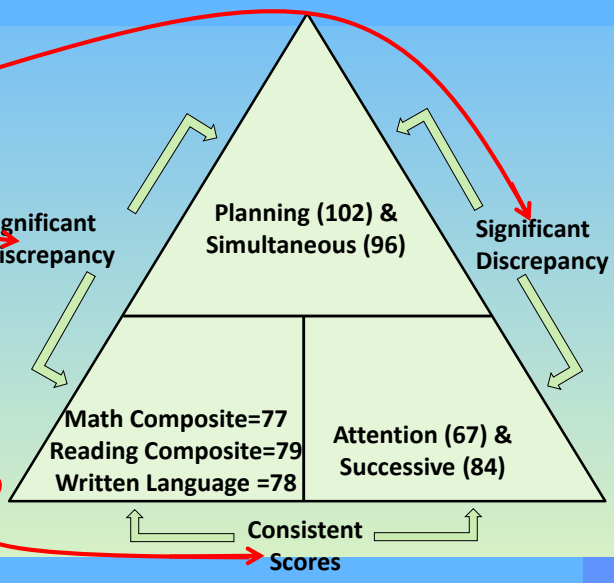
Alejandro's Discrepancy Consistency Method

- 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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IDEA 2004

"(3) ADDITIONAL REQUIREMENTS.—Each local educational agency shall ensure that—

"(A) assessments and other evaluation materials used to assess a child under this section—

"(i) are selected and administered so as not to be discriminatory on a racial or cultural basis;

"(ii) are provided and administered in the language and form most likely to yield accurate information on what the child knows and can do academically, developmentally, and functionally, unless it is not feasible to so provide or administer;

"(iii) are used for purposes for which the assessments or measures are valid and reliable;

"(iv) are administered by trained and knowledgeable personnel; and

"(v) are administered in accordance with any instructions provided by the producer of such assessments;

"(B) the child is assessed in all areas of suspected disability;

"(C) assessment tools and strategies that provide relevant information that directly assists persons in deter-

non discriminatory assessments

valid and reliable assessment

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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

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School Psychology Quarterly
2007, Vol. 22, No. 3, 432–448

This study compared the performance of referred bilingual Hispanic children on the Planning, Attention, Simultaneous, Successive (PASS) theory as measured by English and Spanish versions of the Cognitive Assessment System (CAS; Naglieri & Das, 1997a). The results suggest that students scored similarly on both English and Spanish versions of the CAS. Within each version of the CAS, the bilingual children earned their lowest scores in Successive processing regardless of the language used during test administration. Small mean differences were noted between the means of the English and Spanish versions for the Simultaneous and Successive processing scales; however, mean Full Scale scores were similar. Specific subtests within the Simultaneous and Successive scales

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English & Spanish CAS

Means, *SDs*, *d*-ratios, Obtained and Correction Correlations Between the English a

Spanish Version of the CAS (*N* = 55).

	CAS English		CAS Spanish		*d*-ratio	Correlations	
	Mean	*SD*	Mean	*SD*	*d*	Obtained	Corrected
Planning	92.6	13.1	92.6	13.4	.00	.96	.97
Simultaneous	89.0	12.8	93.0	13.7	-.30	.90	.93
Attention	94.8	13.9	95.1	13.9	-.02	.98	.98
Successive	78.0	13.1	83.1	12.6	-.40	.82	.89
Full Scale	84.6	13.6	87.6	13.8	-.22	.96	.97

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Otero, Gonzales, Naglieri (2012)

- SLD and PASS scores

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Psychology Press
Taylor & Francis Group

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

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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 scores were compared, and no significant differences were found in FS scores or in any of the PASS processes. The CAS FS scores on the English ($M = 86.4$, $SD = 8.73$) and Spanish ($M = 87.1$, $SD = 7.94$) versions correlated .94 (uncorrected) and .99 (corrected for range restriction). Students earned their lowest scores in Successive processing regardless of the language in which the test was administered. PASS cognitive profiles were similar on English and Spanish versions of the PASS scales. These findings suggest that students scored similarly on both versions of the CAS and that the CAS may be a useful measure of these four abilities for Hispanic children with underdeveloped English-language proficiency.

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☆

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Abstract

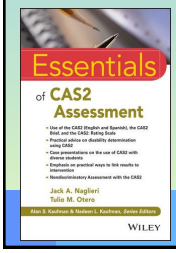
Hispanics have become the largest minority group in the United States. Hispanic children typically come from working class homes with parents who have limited English language skills and educational training. This presents challenges to psychologists who assess these children using traditional IQ tests 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.

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)	11.5
WJ-III (normative sample)	10.9
WISC-IV (matched samples)	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).



Think and Talk in CORE group

- Did PASS scores change your mind about Alejandro? How?
- What big "Ah Ha" did you have?
- Your thoughts…

&

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Presentation Outline

- Introduction
  - Using groups to stimulate thinking
  - How traditional IQ has influenced us
- A new way of thinking about intelligence
  - PASS theory defines basic psychological processes
    - Each PASS ability, case studies and interventions
  - How to measure PASS neurocognitive processes
- Final thoughts

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Intelligence in the 21st Century Conceptualized as brain function

Our Amazing Brains !

From IQ to Brain Function

- Learning is based on BRAIN function
  - Wechsler (traditional IQ) was not based on the brain
  - We can now redefine intelligence as neurocognitive processes based on brain function (A. R. Luria)
- **RE**invent understanding of intelligence based on the brain
  - Measure brain function, not IQ
  - Do not include achievement test questions
  - Measure ***thinking*** not ***knowledge***

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Intelligence as Neurocognitive Abilities

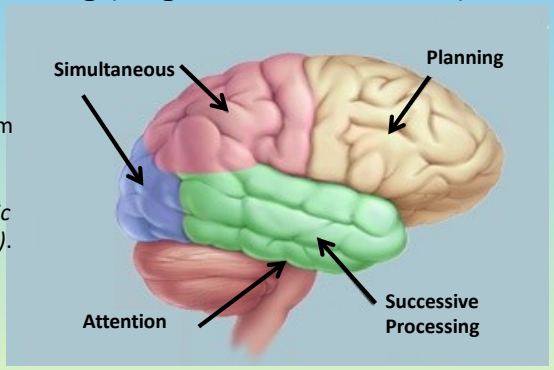
- In Das and Naglieri's first meeting (February 11, 1984) they proposed that intelligence was better defined as PASS processes and began development of the **C**ognitive **A**ssessment **S**ystem (Naglieri & Das, 1997).

- The CAS was the first intelligence *test* to be built on a specific *theory* of intelligence; and one defined as brain function

PASS Neurocognitive Theory

- The brain is the seat of abilities called PASS
- These neurocognitive processes are the foundation of learning (Naglieri & Otero, 2011)

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



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Intelligence as Neurocognitive Abilities

28 Cognitive Assessment System: Redefining Intelligence From a Neuropsychological Perspective

Jack A. Naglieri and Tulio M. Otero

INTRODUCTION

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

Such tools should not o
cesses necessary for effi
also provide for the de
tions and address the qu

FROM NEUROPSYCH
TO ASSESSMENT

Luria's theoretical accou
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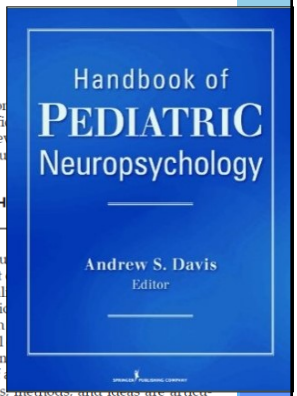
theoretical formulations,
lated in works such as *Higher cortical functions in man* (1966, 1980) and *The Working Brain* (1973). Luria viewed the brain as a functional mosaic, the parts of which interact in dif-



45

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 theory** is a way to measure neuro-cognitive abilities related to brain function

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PASS & BRAIN FUNCTION

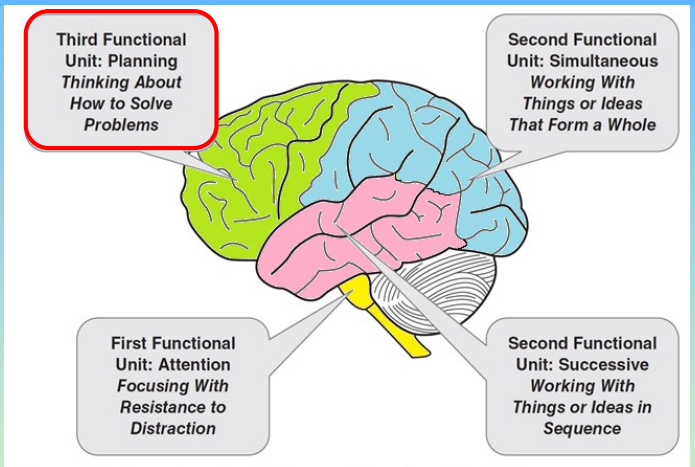
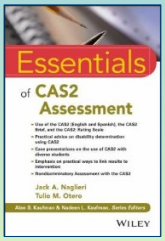


Figure 1.2 Three Functional Units and Associated Brain Structures

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



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PASS Theory: Planning

- **Planning** is a neurocognitive process that a person uses to determine, select, and use efficient solutions to problems
  - problem solving
  - developing plans and using strategies
  - retrieval of knowledge
  - impulse control and self-control
- These can also be described as executive function, metacognition, strategy use

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CAS2: Rating Scale Planning

Directions for Items 1–10. These questions ask how well the child or adolescent decides how to do things to achieve a goal. They also ask how well a child or adolescent thinks before acting and avoids impulsivity. Please rate how well the child or adolescent creates plans and strategies to solve problems.

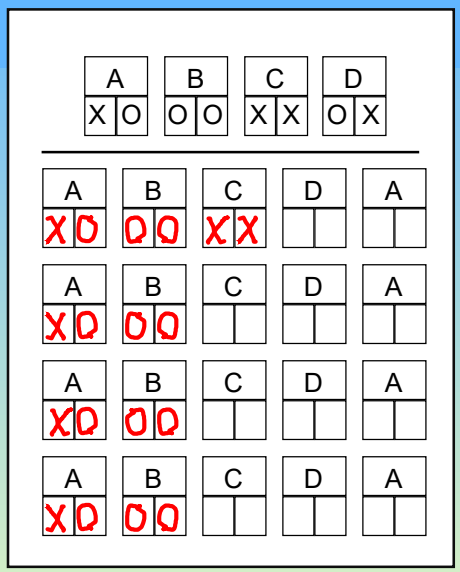
During the past month, how often did the child or adolescent . . .	Never	Rarely	Sometimes	Frequently	Always
1. produce a well-written sentence or a story?	0	1	2	3	4
2. evaluate his or her own actions?	0	1	2	3	4
3. produce several ways to solve a problem?	0	1	2	3	4
4. have many ideas about how to do things?	0	1	2	3	4
5. have a good idea about how to complete a task?	0	1	2	3	4
6. solve a problem with a new solution when the old one did not work?	0	1	2	3	4
7. use information from many sources when doing work?	0	1	2	3	4
8. effectively solve new problems?	0	1	2	3	4
9. have well-described goals?	0	1	2	3	4
10. consider new ways to finish a task?	0	1	2	3	4

___ + ___ + ___ + ___ + ___ = ☐

Planning Raw Score

Planned Codes 1

- Jack jr at age 5
- 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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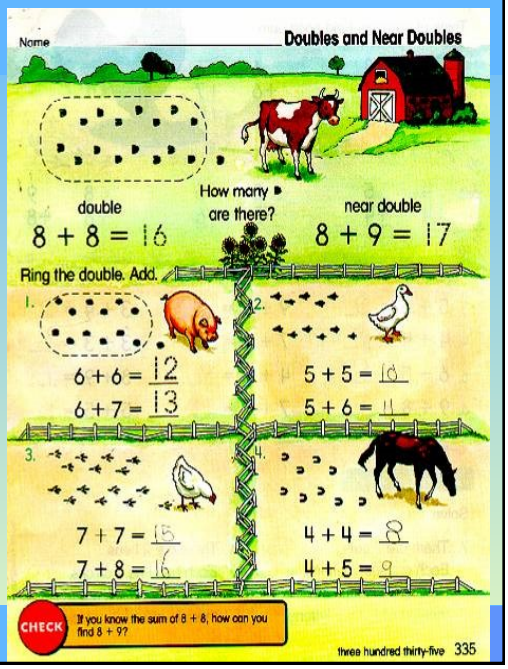
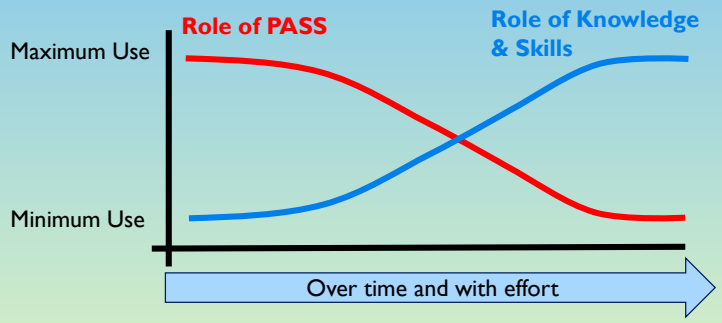
Math Strategies

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



Planning Learning Curves

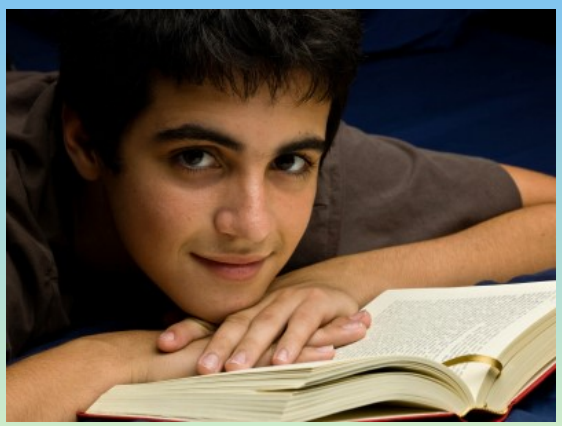
- Learning depends upon many factors especially PASS
- At first, PASS plays a major role in learning
- When a task is practiced and learned it requires less thinking (PASS) and becomes a skill



Note: A **skill** is the ability to do something well with minimal effort (thinking)

The Case of Rocky

Specific Learning Disability and ADHD



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The case of Rocky

- Rocky[1] is a real child with a real problem
- He lives in a large middle class school district
  - a wide variety of services are available
- In first grade Rocky was performing significantly below grade benchmarks in reading, math, and writing.
  - He received group reading instruction weekly and six months of individual reading instruction from a reading specialist
  - He made little progress and was retained

Note: This child's name and other potentially revealing data have been changed to protect his identity.

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The case of Rocky

- By the middle of his second year in first grade Rocky was having difficulty with
  - decoding, phonics, and sight word vocabulary; math problems, addition, fact families, and problem solving activities;
  - and focusing and paying attention."
- ➢ After two years of special team meetings and special reading instruction he is now working two grade levels below his peers and is having difficulty in reading, writing, and math
- ➢ A comprehensive evaluation was conducted

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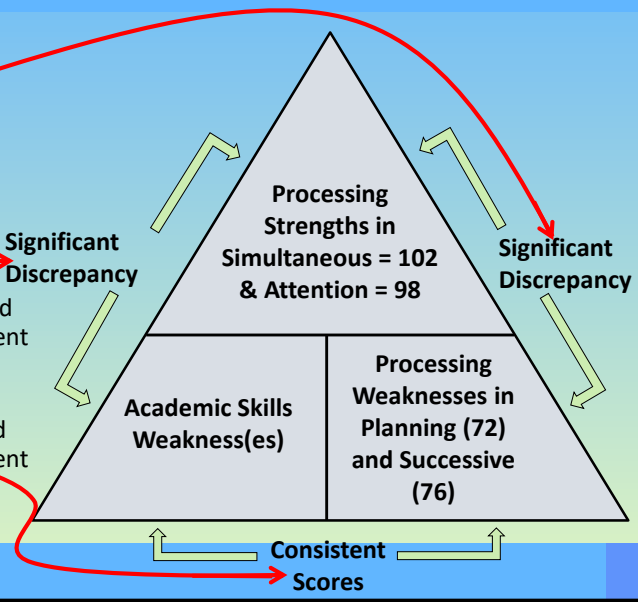
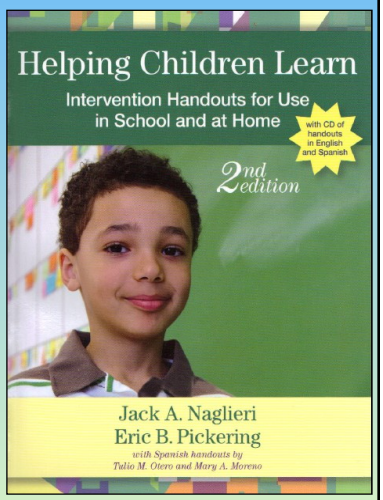
Discrepancy Consistency Method for Rocky

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



Interventions

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



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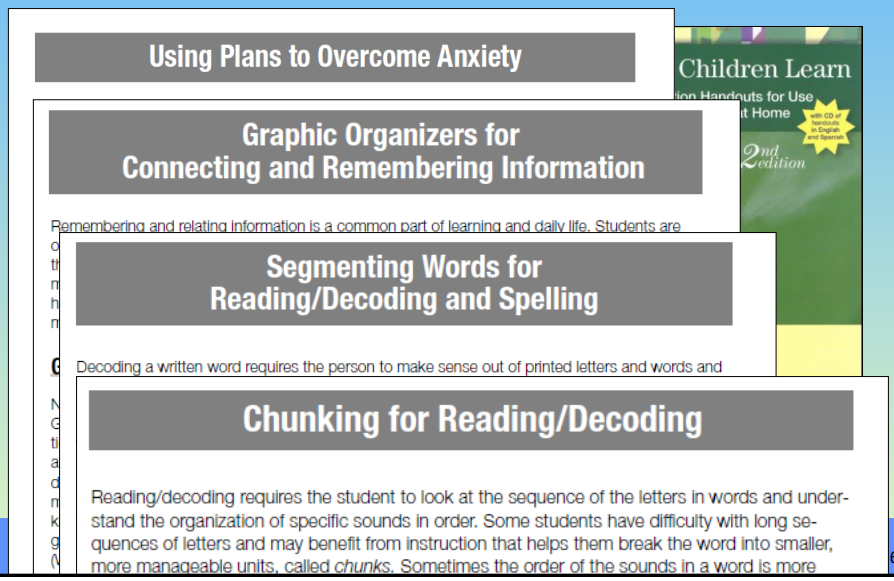
Interventions for Rocky



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Intervention Plan for Rocky – K Kryza

- Be Intentional and Transparent
  - Explain his PASS scores to him
- Build on His Strengths
  - Help him use his Attention and Simultaneous Strengths to support his learning challenges with Planning and Successive.
- Develop Effective Skill Sets to remediate his weaker skills
  - Offer and encourage the use of strategies that can improve his planning and successive processing.
- Encourage a Growth Mindset and Self Efficacy

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Intervention Plan for Rocky – K Kryza

Stop and THINK

Make a PLAN

Take **A**ction!

Review/Reflect/Revis

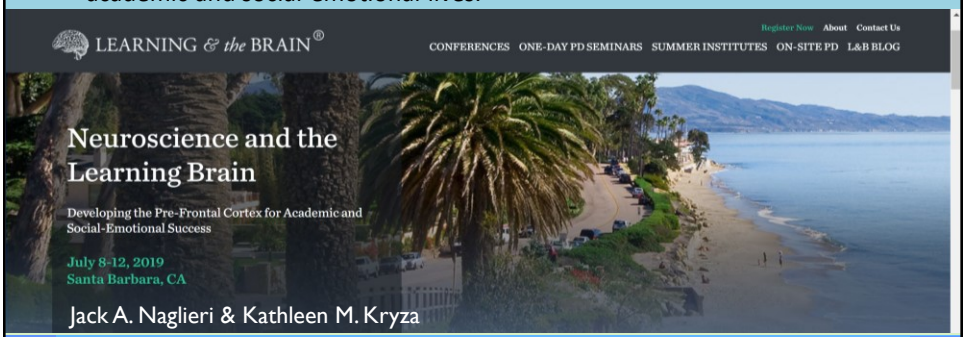
Ta da! (or) Try Again

Developed by Naglieri and Kryza, 2014

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 highly interactive 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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PASS & BRAIN FUNCTION

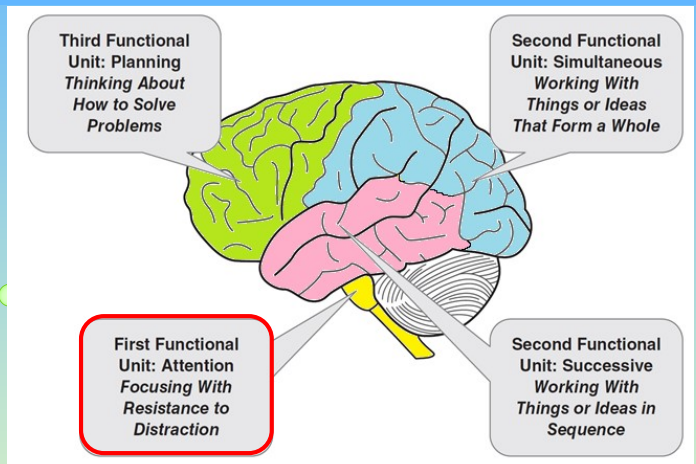

Figure 1.2 Three Functional Units and Associated Brain Structures

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

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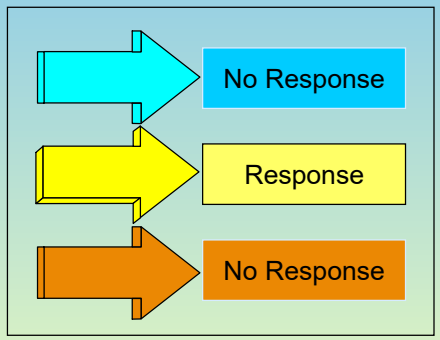
PASS Theory

- **Attention** is a basic psychological process we use to selectively attend to some stimuli and ignores others
  - focused cognitive activity
  - selective attention
  - resistance to distraction

RED
BLUE



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CAS2: Rating Scale Attention

Directions for Items 21–30. These questions ask how well the child or adolescent pays attention and resists distractions. The questions also ask about how well someone attends to one thing at a time. Please rate how well the child or adolescent pays attention.

During the past month, how often did the child or adolescent . . .	Never	Rarely	Sometimes	Frequently	Always
21. work well in a noisy area?	0	1	2	3	4
22. stay with one task long enough to complete it?	0	1	2	3	4
23. not allow the actions or conversations of others to interrupt his or her work?	0	1	2	3	4
24. stay on task easily?	0	1	2	3	4
25. concentrate on a task until it was done?	0	1	2	3	4
26. listen carefully?	0	1	2	3	4
27. work without getting distracted?	0	1	2	3	4
28. have a good attention span?	0	1	2	3	4
29. listen to instructions or directions without getting off task?	0	1	2	3	4
30. pay attention in class?	0	1	2	3	4

___ + ___ + ___ + ___ + ___ = ☐
Attention Raw Score

73

Attention

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

leave school

11. 3:15 p.m.

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

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

12. 6:22 p.m.

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

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

13. 3:50 p.m.

Reading comprehension is difficult because of the similarity of the options

78

Frankie at age 11 years

- Referred by parents (at age 11) after a history of reading and self esteem problems
- High level of anxiety
  - he was too anxious to look closely at the words, and he would rather get the task completed and move on.
  - Frankie could not attend to the details of the sequence of letters for correct spelling, and the order of sound–symbol associations

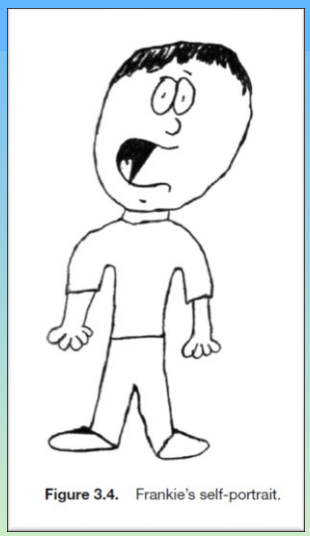

Figure 3.4. Frankie's self-portrait.

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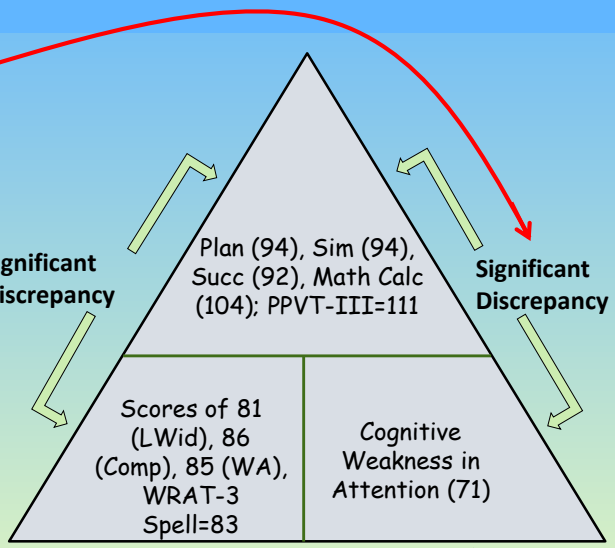
Frankie Discrepancy Consistency Results

- **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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Think and Talk

&

- Thoughts about Frankie
- What would you want to do to help him?
- Have you seen students like this?
- Your reactions…

NOTE: STOP AND TALK is important because the brain retains 50% through talk.

www.kathleenkryza.com

PASS Intervention Protocol

- Help child understand their PASS strengths and areas of challenges (Intentional & Transparent)
- Encourage Motivation & Persistence (Mindsets)
- Teach/Stress strategies for approaching tasks (Skill Sets)
  - Student generated
  - Model and Scaffold as needed
- Encourage independence and self efficacy (Metacognition/Self Assessment)

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Measure of Mindset (From Naglieri & Otero, 2017)

Measure of Mindset (Child & Adolescent)

Jack A. Naglieri & Kathleen M. Kryza - Copyright © 2015

Name _____

Date _____

Instructions: These 10 questions ask about how you think and feel. The answers you give can help us know your thoughts about how you learn. Please read every question carefully and circle the number under the word that tells what you do.

		Never	Sometimes	Most times	Always
1	I don't give up easily.	0	1	2	3
2	When things get hard I say, "I Can do it"	0	1	2	3
3	When I fail I try harder until I get it done.	0	1	2	3
4	I believe that I can learn from my mistakes.	0	1	2	3
5	I think I can do almost anything if I try hard enough.	0	1	2	3
6	When I don't understand something I give up.	0	1	2	3
7	I do not like to be challenged.	0	1	2	3
8	When work is hard I think, "I can not do it."	0	1	2	3
9	When things get hard I do something else.	0	1	2	3
10	When I fail I do something else that is more fun.	0	1	2	3

Figure 5.2 Measure of Mindset: Child & Adolescent Version

Measure of Mindset (Teacher & Parent)

Jack A. Naglieri & Kathleen M. Kryza - Copyright © 2015

Name _____

Date _____

Instructions: These 10 questions ask about a child or adolescent's attitudes toward learning. Please read every question carefully and circle the number under the word that tells what you have observed about your child.

		Never	Sometimes	Most times	Always
1	He/she doesn't give up easily.	0	1	2	3
2	When things get hard he/she says, "I can do it!"	0	1	2	3
3	Failure leads him/her to try harder until the task is finished.	0	1	2	3
4	He/she views failure as an important part of learning.	0	1	2	3
5	He/she believes that you can do anything if you try hard enough.	0	1	2	3
6	He/she is afraid of failure.	0	1	2	3
7	When things get hard he/she avoids the work.	0	1	2	3
8	He/she believes that hard work usually does not pay off.	0	1	2	3
9	He/she is fast to give up on a task.	0	1	2	3
10	He/she sees failure as proof of a person's limitations.	0	1	2	3

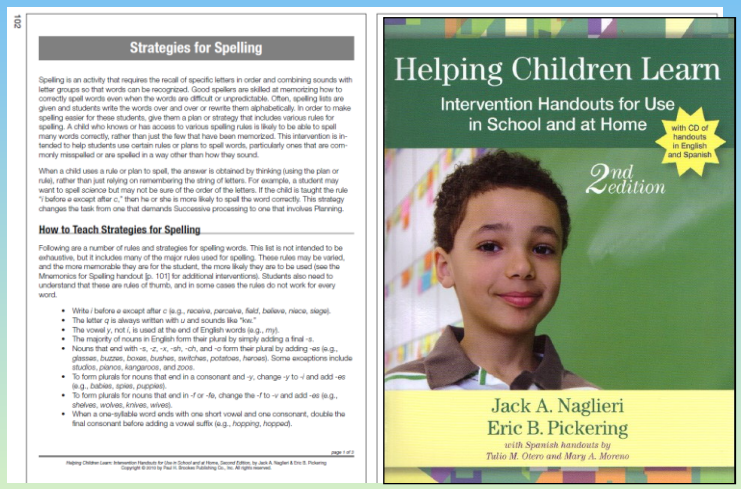
Figure 5.3 Measure of Mindset: Teacher & Parent Version

Intervention Plan for Frankie (K. Kryza)

- Be Intentional and Transparent
  - Explain his PASS scores to him
- Build on His Strengths
  - Help him use his Planning, Simultaneous and Successive strengths to support his learning challenges with Attention
- Develop Effective Skill Sets to remediate his weaker skills
  - Offer and encourage the use of metacognitive strategies that can improve his attention.
- Encourage a Growth Mindset and Self Efficacy

84

Frankie - Use Planning Strength



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Strategies for Spelling

Spelling is an activity that requires the recall of specific letters in order and combining sounds with letter groups so that words can be recognized. Good spellers are skilled at memorizing how to correctly spell words even when the words are difficult or unpredictable. Often, spelling lists are given and students write the words over and over or rewrite them alphabetically. In order to make spelling easier for these students, give them a plan or strategy that includes various rules for spelling. A child who knows or has access to various spelling rules is likely to be able to spell many words correctly, rather than just the few that have been memorized. This intervention is intended to help students use certain rules or plans to spell words, particularly ones that are commonly misspelled or are spelled in a way other than how they sound.

When a child uses a rule or plan to spell, the answer is obtained by thinking (using the plan or rule), rather than just relying on remembering the string of letters. For example, a student may want to spell science but may not be sure of the order of the letters. If the child is taught the rule "*i* before *e* except after *c*," then he or she is more likely to spell the word correctly. This strategy changes the task from one that demands Successive processing to one that involves Planning.

How to Teach Strategies for Spelling

Following are a number of rules and strategies for spelling words. This list is not intended to be exhaustive, but it includes many of the major rules used for spelling. These rules may be varied, and the more memorable they are for the student, the more likely they are to be used (see the Mnemonics for Spelling handout [p. 101] for additional interventions). Students also need to understand that these are rules of thumb, and in some cases the rules do not work for every word.

- Write *i* before *e* except after *c* (e.g., *receive, perceive, field, believe, niece, siege*).
- The letter *q* is always written with *u* and sounds like "kw."
- The vowel *y*, not *i*, is used at the end of English words (e.g., *my*).
- The majority of nouns in English form their plural by simply adding a final *-s*.
- Nouns that end with *-s, -z, -x, -sh, -ch*, and *-o* form their plural by adding *-es* (e.g., *glasses, buzzes, boxes, bushes, switches, potatoes, heroes*). Some exceptions include *studios, pianos, kangaroos*, and *zoos*.
- To form plurals for nouns that end in a consonant and *-y*, change *-y* to *-i* and add *-es* (e.g., *babies, spies, puppies*).
- To form plurals for nouns that end in *-f* or *-fe*, change the *-f* to *-v* and add *-es* (e.g., *shelves, wolves, knives, wives*).
- When a one-syllable word ends with one short vowel and one consonant, double the final consonant before adding a vowel suffix (e.g., *hopping, hopped*).

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Frankie – Metacognitive (Planning) Interventions

- Discourage passivity / encourage independence
  - Teacher should only provide as much assistance as is needed
  - Discourage exclusive use of teacher's solutions
  - Child needs to correct own work
  - Child needs to learn to be self-reliant (Scheid, 1993).

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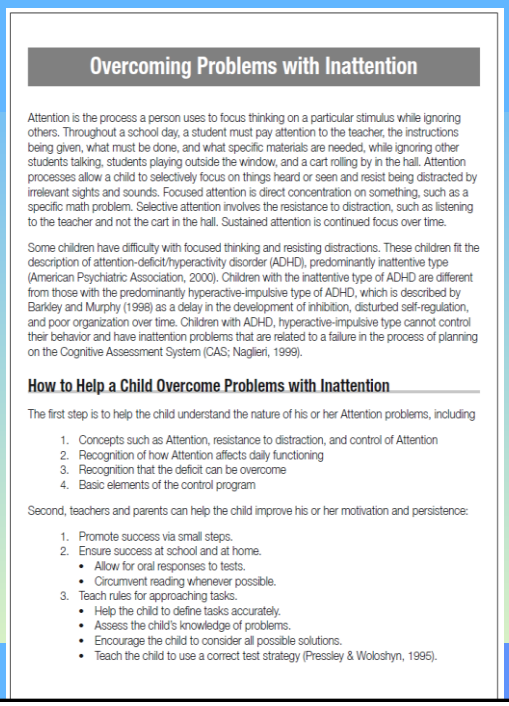
Frankie

Help Frankie better manage his attention problem



Overcoming Problems with Inattention

Attention is the process a person uses to focus thinking on a particular stimulus while ignoring others. Throughout a school day, a student must pay attention to the teacher, the instructions being given, what must be done, and what specific materials are needed, while ignoring other students talking, students playing outside the window, and a cart rolling by in the hall. Attention processes allow a child to selectively focus on things heard or seen and resist being distracted by irrelevant sights and sounds. Focused attention is direct concentration on something, such as a specific math problem. Selective attention involves the resistance to distraction, such as listening to the teacher and not the cart in the hall. Sustained attention is continued focus over time.

Some children have difficulty with focused thinking and resisting distractions. These children fit the description of attention-deficit/hyperactivity disorder (ADHD), predominantly inattentive type (American Psychiatric Association, 2000). Children with the inattentive type of ADHD are different from those with the predominantly hyperactive-impulsive type of ADHD, which is described by Barkley and Murphy (1998) as a delay in the development of inhibition, disturbed self-regulation, and poor organization over time. Children with ADHD, hyperactive-impulsive type cannot control their behavior and have inattention problems that are related to a failure in the process of planning on the Cognitive Assessment System (CAS; Naglieri, 1999).

How to Help a Child Overcome Problems with Inattention

The first step is to help the child understand the nature of his or her Attention problems, including

1. Concepts such as Attention, resistance to distraction, and control of Attention
2. Recognition of how Attention affects daily functioning
3. Recognition that the deficit can be overcome
4. Basic elements of the control program

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

1. Promote success via small steps.
2. Ensure success at school and at home.
   - Allow for oral responses to tests.
   - Circumvent reading whenever possible.
3. Teach rules for approaching tasks.
   - Help the child to define tasks accurately.
   - Assess the child's knowledge of problems.
   - Encourage the child to consider all possible solutions.
   - Teach the child to use a correct test strategy (Pressley & Woloshyn, 1995).

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Frankie - Interventions

- Teach rules for approaching tasks
  - Define tasks accurately
  - Assess child's knowledge of the problem
  - Consider ALL possible solutions
  - Evaluate value of all possible solutions
  - Checking work carefully is required
  - Correct your own test strategy (see Pressley & Woloshyn, 1995, p. 140).

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What Should Teachers & Parents do?

How to Teach Students to Attend

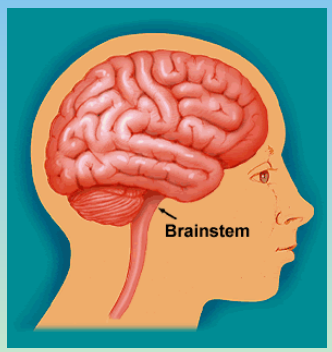
Figure 1. A graphic that reminds students to focus on information being discussed.

The first step in teaching children about their own abilities is to explain that they have many different types of abilities and that Attention is one of them. They also need to be aware of when their attention is focused and they are resisting distractions, as well as when it is divided among too many things, which leaves them unfocused and overloaded. In Figure 1 (which also appears in the PASS poster on the CD), we provide a fast and simple message: "Think smart and look at the details!" During appropriate times during the day, remind students to closely attend to information being discussed. We need to teach children to approach *all* their work with an understanding of how well they are focused on the details and resisting distractions in their environment. Throughout the day, the teacher should

1. Teach children to be aware of their level of attention and resistance to distraction.
2. Encourage children by asking: "Are you able to focus?" or "Are you getting distracted?"
3. Remind the students that Attention is necessary for reading, writing, and arithmetic, as well as in sports, playing a musical instrument, driving a car, and so forth.
4. Teach children that they may have to modify their environment so that they can attend better.
5. Remind students that learning requires attention to detail and resisting distractions.

Pay Attention

- Intentionally and Transparently Teach Students…
  - ***Focus*** and know what to focus on
  - Learn to ***Resist*** distractions
  - ***Sustain*** attention over time
  - From K. Kryza (2018)



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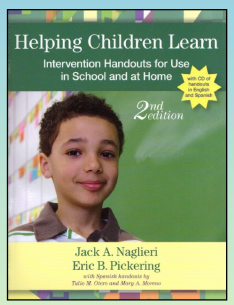
Frankie and Successive Processing

- **Spelling**
  - Strategies for Spelling (pp.102–103)
  - Segmenting Words for Reading/Decoding and Spelling (p. 89)
- These are designed to help him perform better when tasks require a lot of Successive processing.



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Is Frankie a Typical ADHD Child?

Note the Hyperactive-Impulsive Type

92

Case of Christopher - Is He ADHD?

- Problems
  - behavior problems
  - impulsive & disorganized
  - forgets assignments
  - can't stay on task
  - poor grades
- Clinical Observations
  - anxious about testing
  - used simple strategies
  - did sloppy work
  - control problems (threw pencil when frustrated)
  - impulsive choices made

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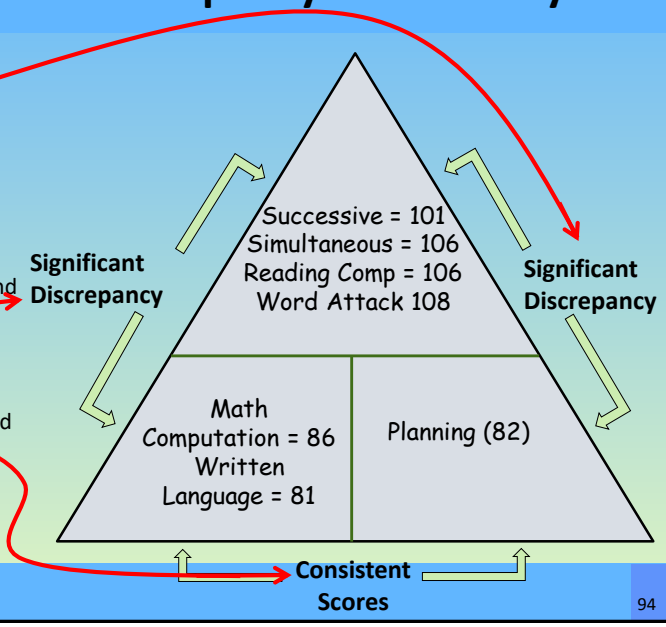
Christopher Discrepancy Consistency

- **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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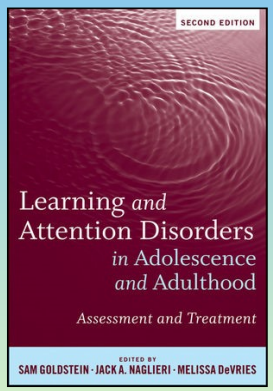
ADHD Profiles by Ability Test



CHAPTER

6

Assessment of Cognitive and Neuropsychological Processes

JACK A. NAGLIERI
SAM GOLDSTEIN

INTRODUCTION

Assessment of intelligence plays an important role in the process of determining if an adolescent or adult has a disability. For those suspected of having a Specific Learning Disability (SLD), the intelligence test provides an important reference point to compare to levels of achievement. For those who may have Attention-Deficit/Hyperactivity Disorder (ADHD), the measure of intelligence is used to rule out other disabilities that may better explain the person's behavior. Intelligence tests have and will continue to provide a critical component of any comprehensive assessment needed to determine the presence of disabilities, such as SLD and ADHD. Their importance, however, demands a thorough understanding of the strengths and limitations of these tests of ability, an appreciation of the research on their effectiveness, and an examination of modern views of assessing intelligence. The goal of this chapter is to address these issues.

This chapter reexamines intelligence as measured by traditional IQ tests with special attention to the utility such tests have for diagnosis. In order to achieve this goal, the chapter includes a brief overview of the history and definitions of intelligence and examines examples of measures of intelligence more closely. Emphasis will be placed on the importance of understanding how intelligence is conceptualized and measured by different tests and the implications this has for assessment. The chapter also provides a conceptual model of assessment of basic psychological processes and how that information can aid in the diagnostic process and treatment of adolescents and adults.

Slides by Jack A. Naglieri, Ph.D. (jnaglieri@gmail.com)

Naglieri & Goldstein (2011)

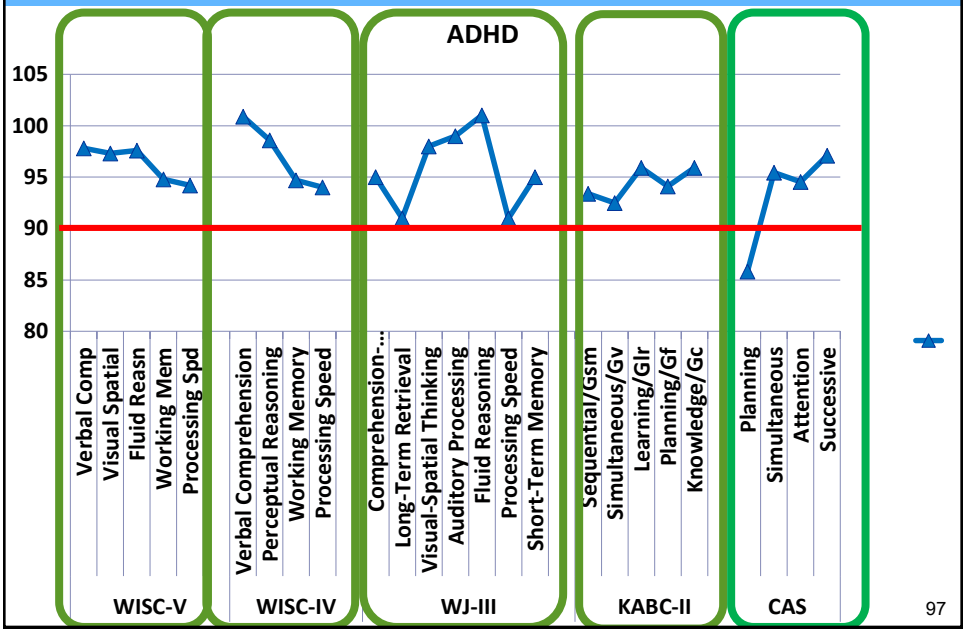
GROUP PROFILES BY ABILITY TEST

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

Profiles for students with ADHD



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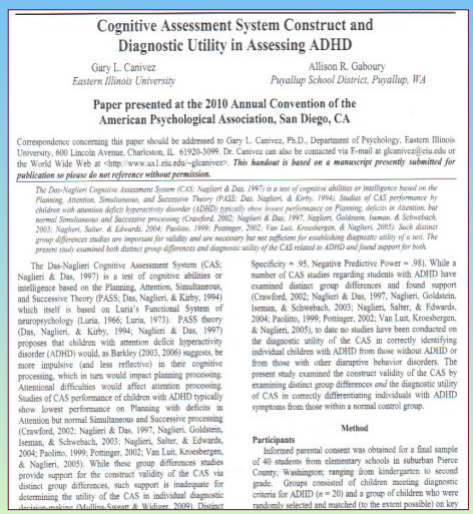
Canivez & Gaboury (2010)

- "the present study demonstrated the potential of the CAS to correctly identify students who demonstrated behaviors consistent with ADHD diagnosis." glcanivez@eiu.edu



Cognitive Assessment System Construct and Diagnostic Utility in Assessing ADHD

Gary L. Canivez
Eastern Illinois University

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Puyallup School District, Puyallup, WA

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

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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; Paolino, 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; Paolino, 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 (Mullins-Sweatt & Widiger, 2009). 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; Paolino, 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

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Intervention Plan (K. Kryza)

- Be Intentional and Transparent
  - Explain his PASS scores to him
- Build on His Strengths
  - Help him use his Attention, Simultaneous and Successive Strengths to support his learning challenges with Planning
- Develop Effective Skill Sets to remediate his weaker skills
  - Offer and encourage the use of metacognitive strategies that can improve his planning. Think Smart!
- Encourage a Growth Mindset and Self Efficacy

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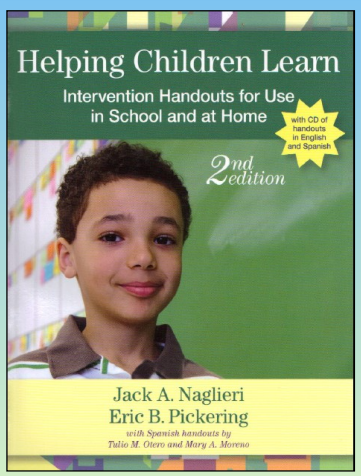
Helping Children Learn Resources

- Planning Facilitation
- Strategies for Learning Basic Math Facts
- Touch Math for Calculation
- Seven Step Strategy for Math Word Problems
- Chunking Strategy for Multiplication



Planning Research

Planning Facilitation for Math Calculation

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

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

How to Teach Planning Facilitation

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

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

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HAMMILL INSTITUTE ON DISABILITIES

Journal of Learning Disabilities
44(2) 184–195

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

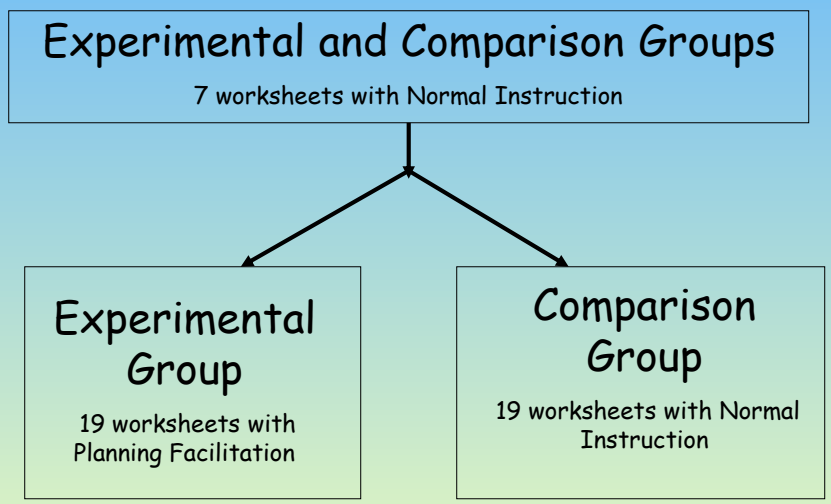
A Cognitive Strategy Instruction to Improve Math Calculation for Children With ADHD and LD: A Randomized Controlled Study

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.

Design of the Study



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Instructional Sessions

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

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

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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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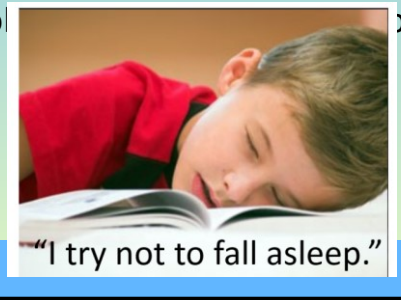
Student Plans

- "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 pro one first."



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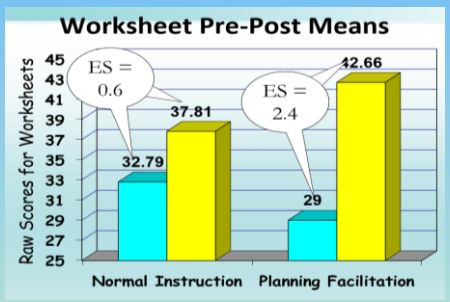
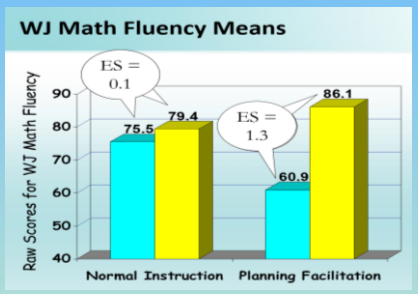
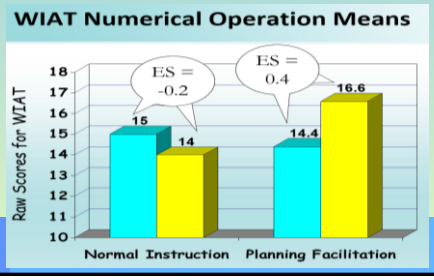
Pre-Post Means and Effect Sizes for the Students with LD and ADHD







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

Results (K. Kryza)

- The experimental group did better than the control on math taken from the curriculum on standardized math tests
- A year later the experimental group still outperformed the control group.

- ***Mindsets (to think about how to do…)***
- ***Plus Skill Sets (strategies students learned)***
- ***Equals Results!***

PASS & BRAIN FUNCTION

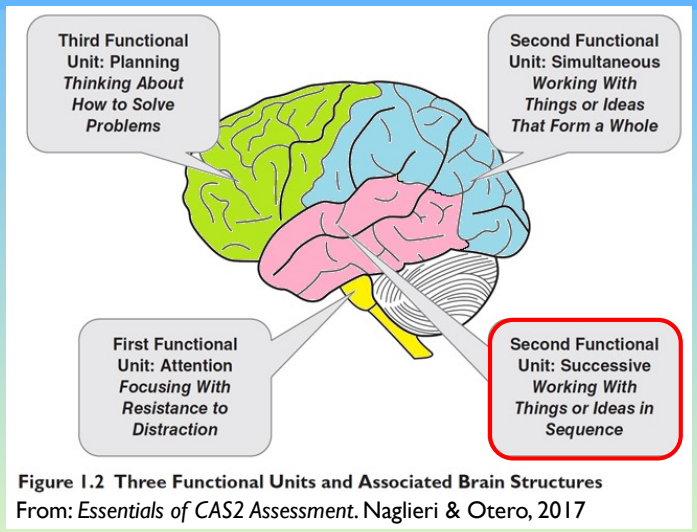


Figure 1.2 Three Functional Units and Associated Brain Structures
From: *Essentials of CAS2 Assessment*. Naglieri & Otero, 2017

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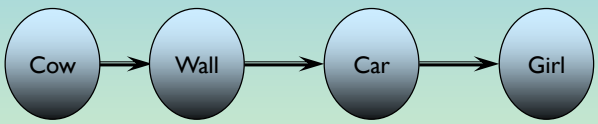
PASS: Successive

- **Successive** processing is used whenever we do something in a specific serial order
  - Anything we comprehend, speak, or do in a sequence requires successive processing



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CAS2: Rating Scale Successive

Directions for Items 31–40. These questions ask how well the child or adolescent remembers things in order. The questions ask about working with numbers, words, or ideas in a series. The questions also ask about doing things in a certain order. Please rate how well the child or adolescent works with things in a specific order.

During the past month, how often did the child or adolescent . . .	Never	Rarely	Sometimes	Frequently	Always
31. recall a phone number after hearing it?	0	1	2	3	4
32. remember a list of words?	0	1	2	3	4
33. sound out hard words?	0	1	2	3	4
34. correctly repeat long, new words?	0	1	2	3	4
35. remember how to spell long words after seeing them once?	0	1	2	3	4
36. imitate a long sequence of sounds?	0	1	2	3	4
37. recall a summary of ideas word for word?	0	1	2	3	4
38. repeat long words easily?	0	1	2	3	4
39. repeat sentences easily, even if unsure of their meaning?	0	1	2	3	4
40. follow three to four directions given in order?	0	1	2	3	4

___ + ___ + ___ + ___ + ___ = ☐

Successive Raw Score

111

A Successive processing test using WORDS

112

Let's Take a TEST !

- First a word repetition test
- I will say some words. AFTER I finish saying the words you need to write them in order
- ***DO NOT ADVANCE SLIDE***

113

- Man Cow Key
- Book Shoe Girl Dog Car
- Girl Book Dog Car Wall Cow Key Shoe

114

Now a Successive processing test using numbers

115

Insights…

- Even thought tasks were different in content (numbers and words) and modality (auditory and visual), they required the same kind of thinking – Successive processing

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Speech and Successive processing (Samantha at age 3 ½ yrs)

120

PASS Theory: Successive

- **Successive** processing is used when information is in a specific serial order
  - Decoding words
  - Letter-sound correspondence
  - Phonological tasks
  - Understanding the syntax of sentences
  - Comprehension of written instructions
  - Sequence of words, sentences, paragraphs
  - Remembering the sequence of events in a story that was read

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Successive and Syntax

- Sentence Repetition
  - Child repeats sentences exactly as stated by the examiner such as:
  - ***The red greened the blue with a yellow.***
- Sentence Questions
  - Child answers a question about a statement made by the examiner such as the following:
  - ***The red greened the blue with a yellow. Who got greened?***

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Phonemic Awareness = Successive

"Now I am going to say parts of words. I want you to put the parts together to make a whole word."

Blending: Advantage

Item	Correct response	# of syllables	Score
ad : van : tage	advantage	3	0 1

From the Feifer Assessment of Reading (2016)

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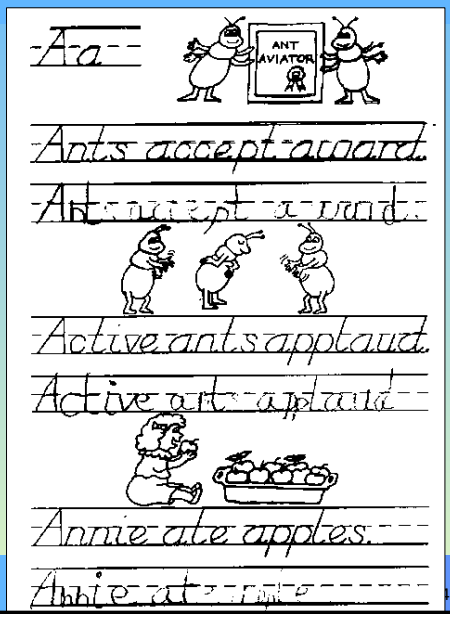
Successive Reading Practices

The sequence of the sounds is emphasized in this work sheet



Successive Processing & Reading Decoding

- The ability to sequence and sequence multiple sounds together to identify a word in print is critical for reading decoding

PASS - ADHD and SLD weaknesses

- Students with SLD in Reading Decoding, Spelling, phonological skill deficits and related problems have difference PASS profiles from those with ADHD

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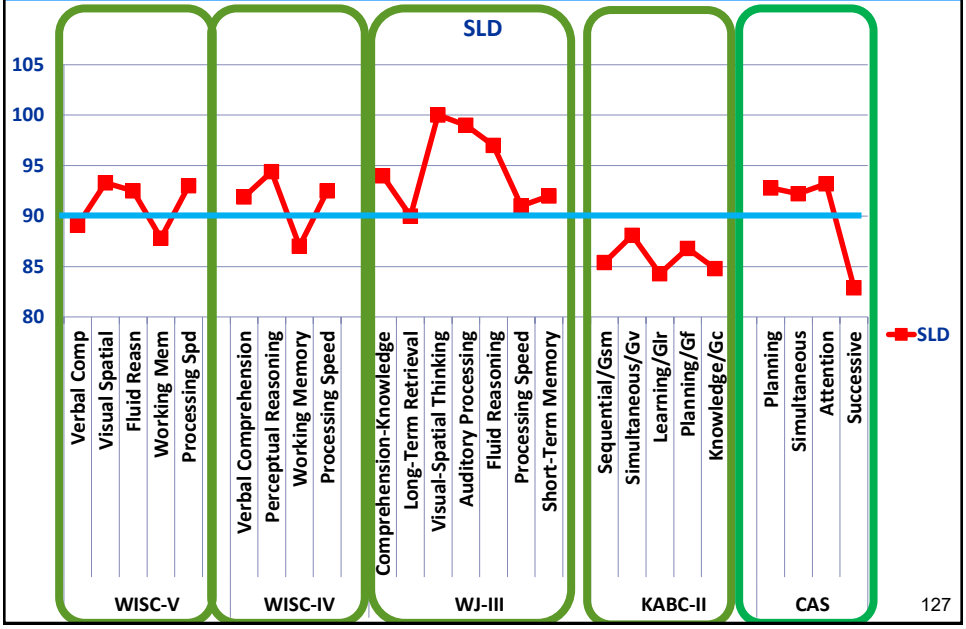
Profiles for SLD (reading decoding)



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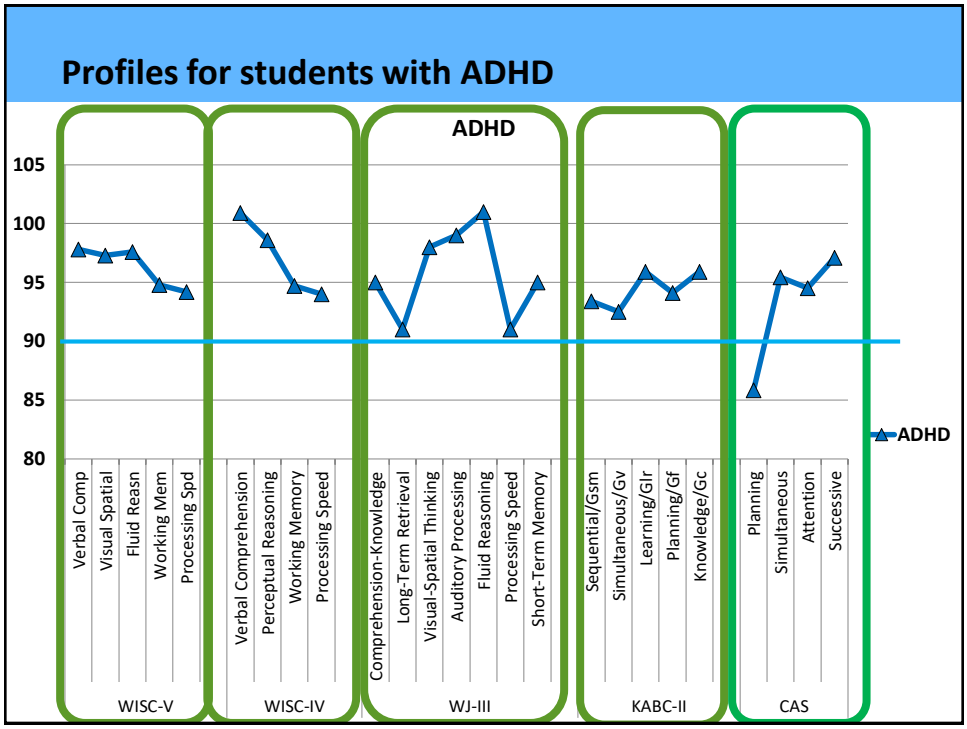
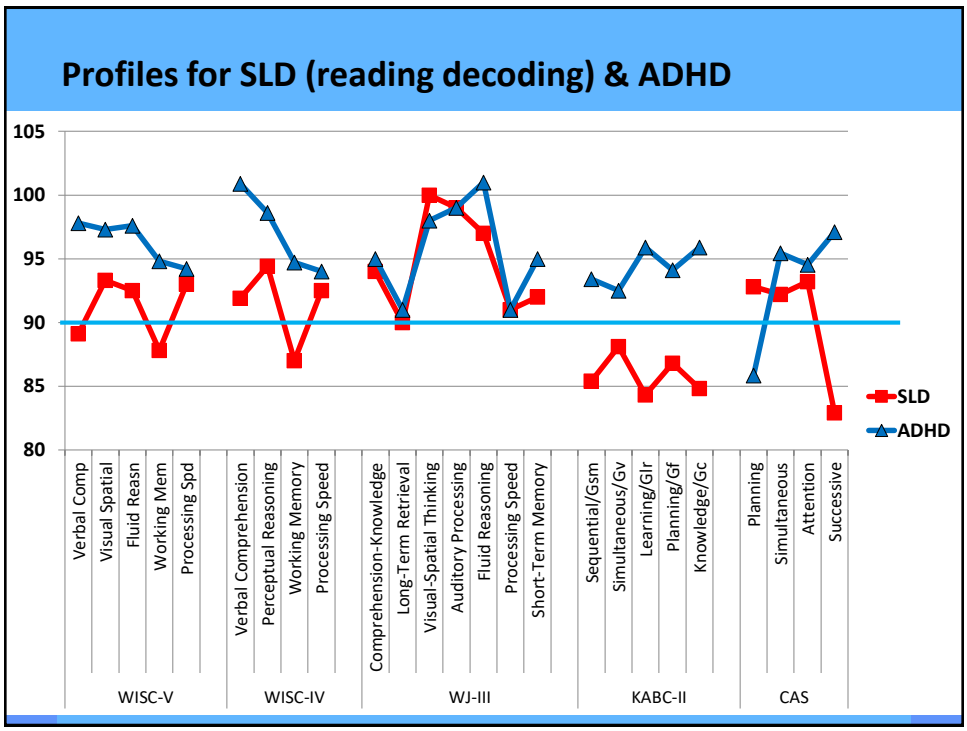
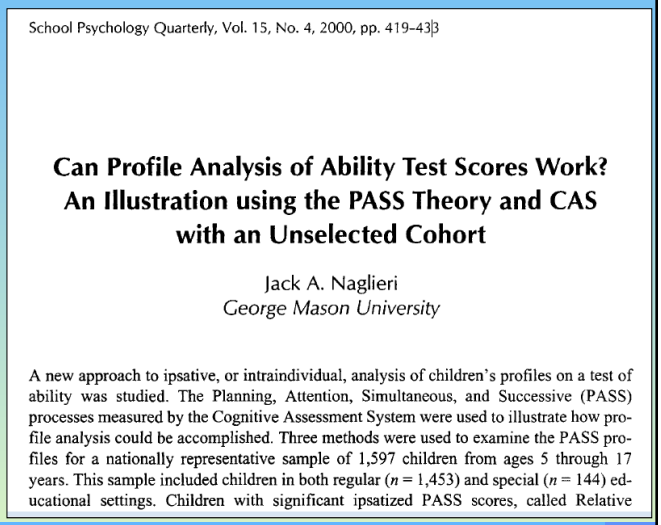

Profiles for students with ADHD
ADHD
105
100
95
90
85
80
Verbal Comp
Visual Spatial
Fluid Reasn
Working Mem
Processing Spd
Verbal Comprehension
Perceptual Reasoning
Working Memory
Processing Speed
Comprehension-Knowledge
Long-Term Retrieval
Visual-Spatial Thinking
Auditory Processing
Fluid Reasoning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


Profiles for SLD (reading decoding) & 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-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
WISC-V
WISC-IV
WJ-III
KABC-II
CAS
SLD
ADHD

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. 419-433

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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Case Workbook Activity

- Time to think and talk in your CORE GROUP
- Read the case of Paul starting on page 8
  - Complete the analysis of PASS scores on page 10, and the triangle
  - OR…use the spreadsheet
  - CAS2 FAR FAM PSW Analyzer
  - On jacknaglieri.com
- Suggest instructional options

BUT FIRST…

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How to Find the PSW of PASS Scores

- Free spreadsheets under "PASS Score Analyzer" tab

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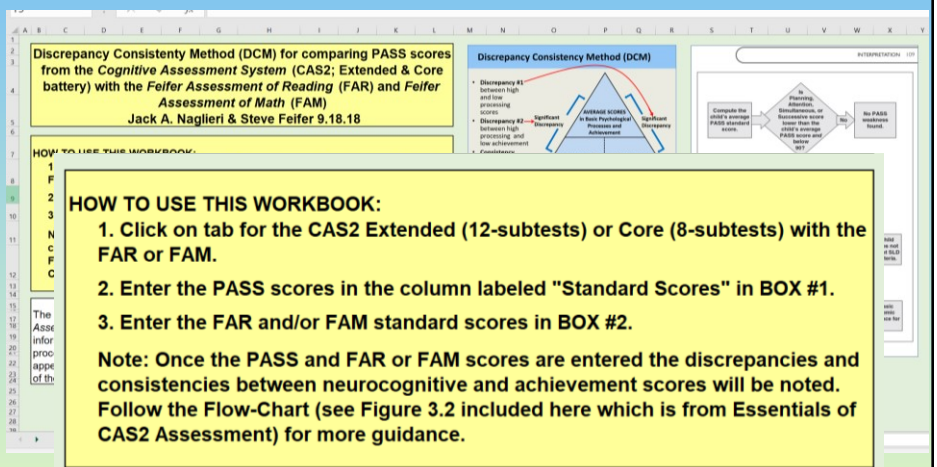
PASS: A new way to think about and measure intelligence

CAS2, FAR & FAM PSW Analyzer

- Instructions tab Page 1



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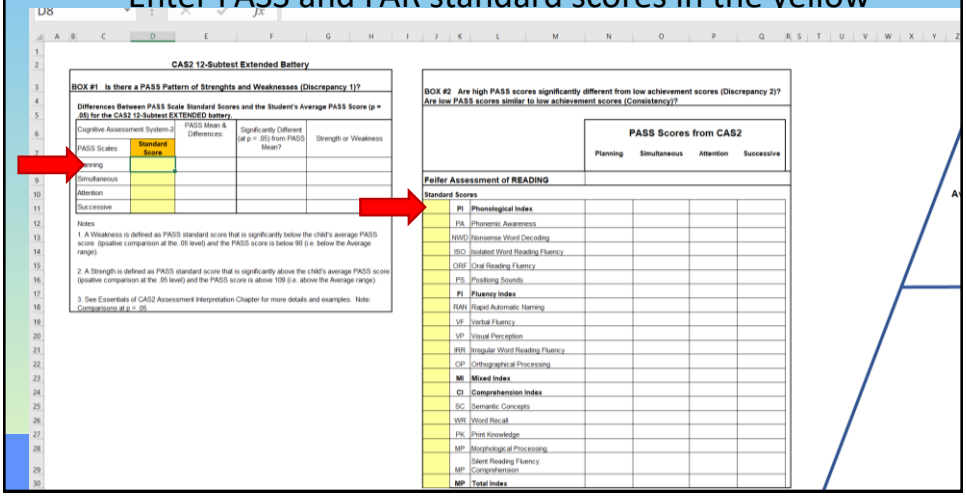
CAS2, FAR & FAM PSW Analyzer

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



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 Mean & Differences:	Significantly Different (at p = .05) from PASS Mean?	Strength or Weakness
PASS Scales	Standard Score			
Planning				
Simultaneous				
Attention				
Successive				

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	Simultaneous	Attention	Successive

Feifer Assessment of READING

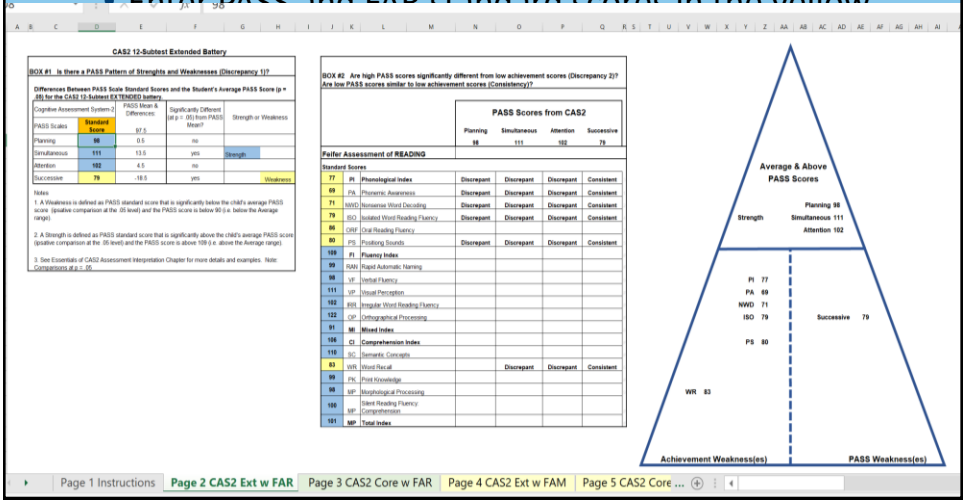
Standard Scores

	PI	**Phonological Index**
	PA	Phonemic Awareness
	NWD	Nonsense Word Decoding
	ISO	Isolated Word Reading Fluency
	ORF	Oral Reading Fluency
	PS	Positing Sounds
	FI	**Fluency Index**
	RAN	Rapid Automatic Naming
	VF	Verbal Fluency
	VP	Visual Perception
	IRR	Irregular Word Reading Fluency
	OP	Orthographical Processing
	MI	**Mixed Index**
	CI	**Comprehension Index**
	SC	Semantic Concepts
	WR	Word Recall
	PK	Print Knowledge
	MP	Morphological Processing
	MP	Silent Reading Fluency: Comprehension
	MP	**Total Index**

PASS: A new way to think about and measure intelligence

CAS2, FAR & FAM PSW Analyzer

- CAS2 Extended and FAR analysis on Page 2



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 Mean & Differences:	Significantly Different (at p = .05) from PASS Mean?	Strength or Weakness
PASS Scales	Standard Score			
Planning	98	0.5	no	
Simultaneous	111	13.5	yes	Strength
Attention	102	4.5	no	
Successive	79	-18.5	yes	Weakness

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	Simultaneous	Attention	Successive
98	111	102	79

Feifer Assessment of READING

Standard Scores

77	**PI**	**Phonological Index**	Discrepant	Discrepant	Discrepant	Consistent
69	PA	Phonemic Awareness	Discrepant	Discrepant	Discrepant	Consistent
71	NWD	Nonsense Word Decoding	Discrepant	Discrepant	Discrepant	Consistent
79	ISO	Isolated Word Reading Fluency	Discrepant	Discrepant	Discrepant	Consistent
86	ORF	Oral Reading Fluency				
80	PS	Positing Sounds	Discrepant	Discrepant	Discrepant	Consistent
109	**FI**	**Fluency Index**				
99	RAN	Rapid Automatic Naming				
98	VF	Verbal Fluency				
111	VP	Visual Perception				
102	IRR	Irregular Word Reading Fluency				
122	OP	Orthographical Processing				
91	**MI**	**Mixed Index**				
106	**CI**	**Comprehension Index**				
110	SC	Semantic Concepts				
83	WR	Word Recall		Discrepant	Discrepant	Consistent
99	PK	Print Knowledge				
98	MP	Morphological Processing				
100	MP	Silent Reading Fluency: Comprehension				
101	**MP**	**Total Index**				

Page 1 Instructions | Page 2 CAS2 Ext w FAR | Page 3 CAS2 Core w FAR | Page 4 CAS2 Ext w FAM | Page 5 CAS2 Core ...

CAS2, FAR & FAM PSW Analyzer

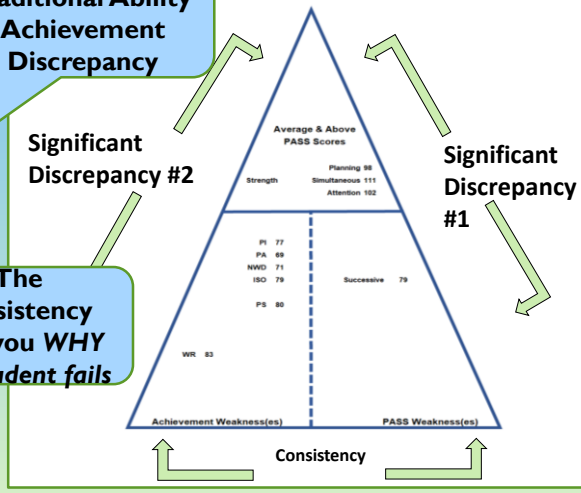
- Discrepancy #1 Successive processing is a weakness
- Discrepancy #2 between good PASS and poor FAR scores
- Consistency between Successive & FAR achievement scores

Note: This is a traditional Ability Achievement Discrepancy

Significant Discrepancy #2

Significant Discrepancy #1

The Consistency tells you *WHY the student fails*



PASS: A better way to think about and measure intelligence

FAR Phonological Index Subtests

far — forlearningassessmentofreading

PHONOLOGICAL INDEX

- Phonemic Awareness
  - rhyming, blending, segmenting & manipulation of sounds
- Positioning Sounds
- Nonsense Word Decoding
- Isolated Word Fluency
- Oral Reading Fluency (accuracy)

Phonemic Awareness: Rhyming

All grades

"I'm going to say two words, and I would like you to tell me if they rhyme (sound the same)."

Rhyming (PK-2nd): Fish, dish

Phonemic Awareness: Blending

All grades

"Now I am going to say parts of words. I want you to put the parts together to make a whole word."

Blending (9th+) : Advantage

Item	Correct response	# of syllables	Score
ad : van : tage	advantage	3	0 1

Phonemic Awareness: Segmenting

"Now I am going to say a word. I want you to say the word back to me one part at a time and tap the table for each part you hear."

	Item	Correct response	Correct # of taps	Score
PK-2nd	1. toothpaste	tooth : paste	2	0 1

Positioning Sounds Sample Item

"I'm going to say a word. I want you to tell me which sounds are missing in the word."

All grades

d | |

Nonsense Word Decoding

2nd + Only

"I want you to read each of these words out loud without skipping any. Ready? Begin."

conving magip pibstat canians

Phonemic Awareness: Manipulation

"I am going to say a word and then take of its sounds away."

9.	Say "bend" without the /b/ sound.	end	0 1
10.	Say "cord" without the /d/ sound.	core	0 1

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Case Workbook Activity

- Time to think and talk in your CORE GROUP
- Read the case of Paul starting on page 8
  - Complete the analysis of PASS scores on page 10, and the triangle
  - OR…use the spreadsheet
  - CAS2 FAR FAM PSW Analyzer
  - On jacknaglieri.com
- Suggest instructional options
  - Take 10-15 minutes

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Thoughts on intervention

JN and KK

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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 sound out words
  - Poor spelling
  - Poor reading comprehension
  - Good memory for details
  - Can't remember the sequence of steps when doing math and math facts

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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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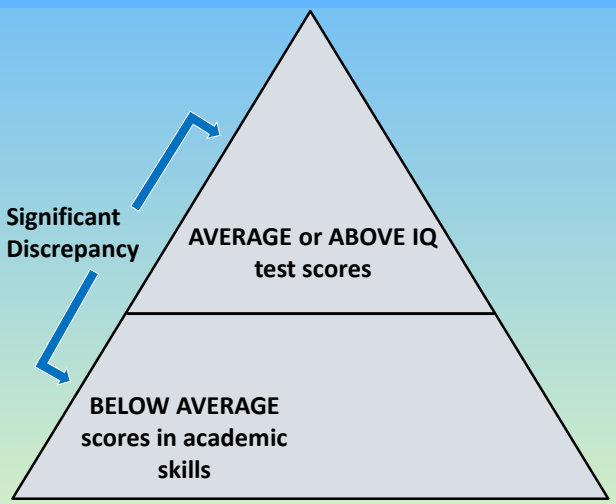
Traditional Discrepancy Approach

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



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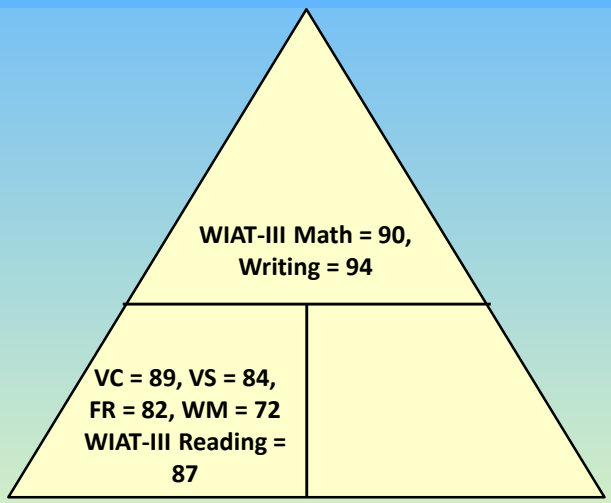
Traditional Discrepancy Approach



Paul's WISC and Achievement data make no sense !

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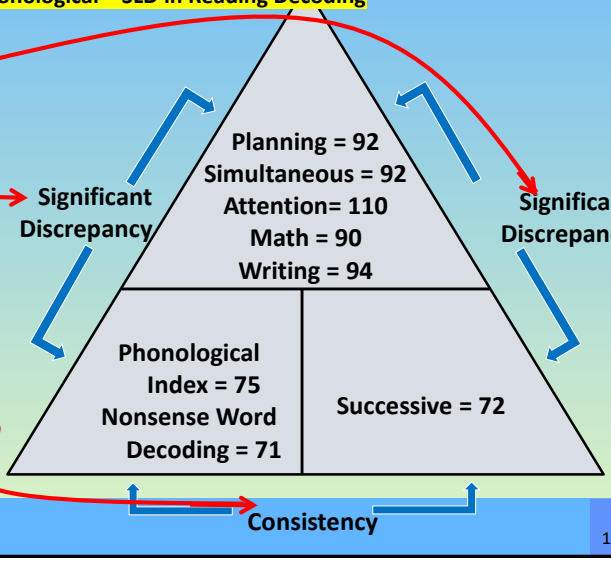
Discrepancy Consistency Method - Paul

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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Types of Dyslexia

JACKNAGLIERI.C
ASSESSMENT TOOLS FOR PSYCHOLOGISTS AND

HOME | ABOUT | TESTS | BOOKS | HANDOUTS & RESEARCH | ARTICLES | VIDEOS | 10-MINUTE SOLUTIONS | PASS CASE STUDIES | PASS SCORE ANALYZERS | CONTACT

10-MINUTE SOLUTIONS

Short published papers that describe applications of PASS theory to identify disabilities such as SLD and Dyslexia.

SPECIFIC LEARNING DISABILITIES

Naglieri, J.A., & Feifer, S.G. (2017). Identification of Specific Learning Disabilities using a Pattern of Strengths and Weaknesses. School Psychology in Virginia: The Newsletter of the Virginia Academy of School Psychologists. Fall 2017/Winter 2018. 7-11.

Naglieri, J.A., & Feifer, S.G. (2018). Identification of Specific Learning Disabilities using a Pattern of Strengths and Weaknesses. CASP Today. Summer 2018.68.3. 6-17.

Naglieri, J.A., & Feifer, S.G. (2017). Identification of Specific Learning Disabilities using a Pattern of Strengths and Weaknesses. New York School Psychologist. 36.1. 9-12.

Gutentag, S., & Naglieri, J.A. (2017). Goodbye Discrepancy Model. Hello PSW: Using Science and Best Practice to Assess for Specific Learning Disabilities. CASP Today. 67.3. 6-16.

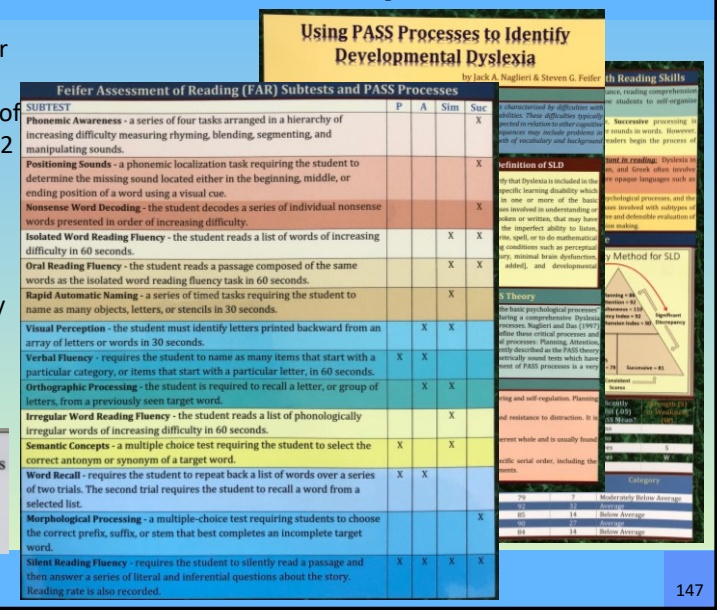
DYSLEXIA

Naglieri, J.A., & Feifer, S.G. (2018). Using PASS Processes to Identify Developmental Dyslexia Pamphlet. Schoolhouse Educational Services, Inc. Find it on Amazon or Schoolhouse Educational Services, LLC

Using CAS2 and Far for Dyslexia

- Naglieri & Feifer provide an 8-page summary of how to use CAS2 and FAR to identify four subtypes of Dyslexia using the Discrepancy Consistency Method

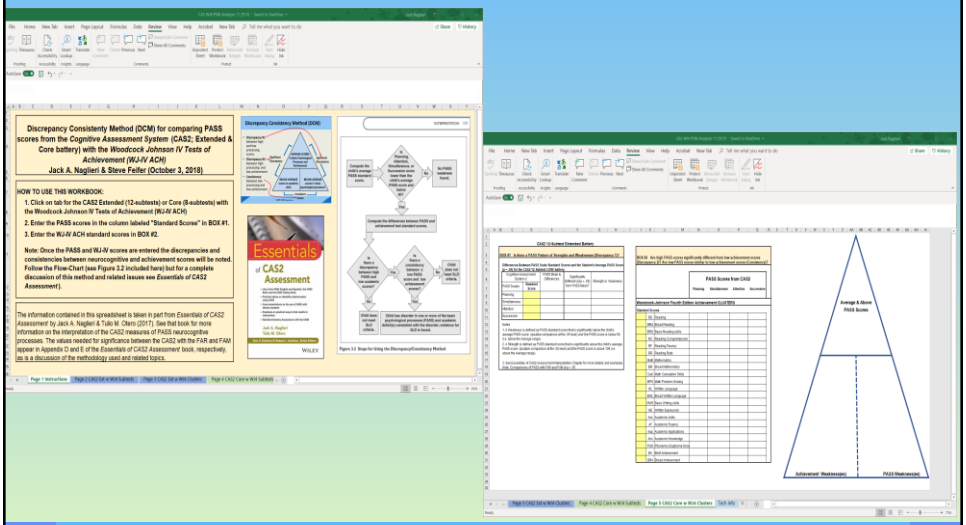
Order From:
Schoolhouse Educational Services
P.O. Box 397
Sparta, WI 54656
SchoolhouseEducationalServices.com
Phone: 608-487-8282


Using PASS Processes to Identify Developmental Dyslexia
by Jack A. Naglieri & Steven G. Feifer

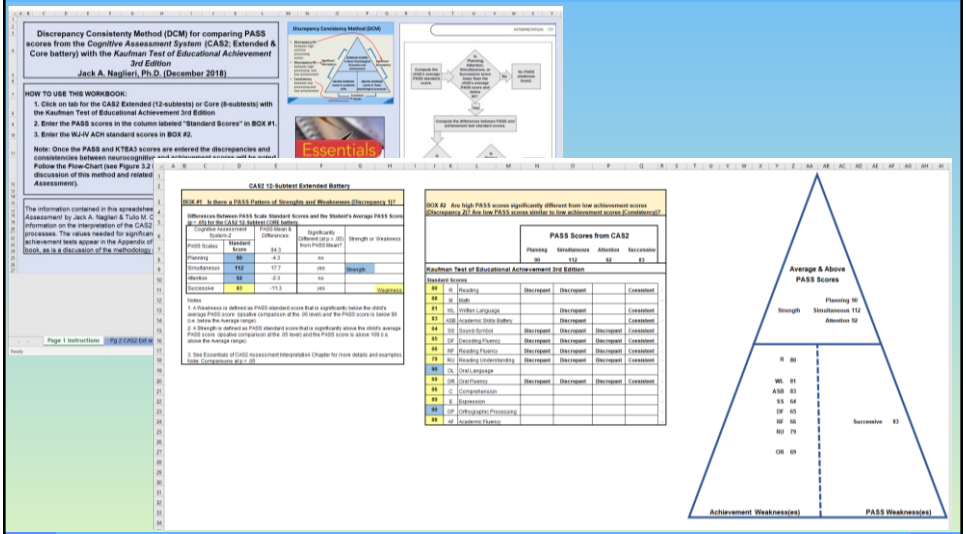
Feifer Assessment of Reading (FAR) Subtests and PASS Processes

SUBTEST	P	A	Sim	Suc
Phonemic Awareness - a series of four tasks arranged in a hierarchy of increasing difficulty measuring rhyming, blending, segmenting, and manipulating sounds.				X
Positioning Sounds - a phonemic localization task requiring the student to determine the missing sound located either in the beginning, middle, or ending position of a word using a visual cue.				X
Nonsense Word Decoding - the student decodes a series of individual nonsense words presented in order of increasing difficulty.				X
Isolated Word Reading Fluency - the student reads a list of words of increasing difficulty 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 in 60 seconds.			X	X
Rapid Automatic Naming - a series of timed tasks requiring the student to name as many objects, letters, or stencils in 30 seconds.			X	
Visual Perception - the student must identify letters printed backward from an array of letters or words in 30 seconds.		X	X	
Verbal Fluency - requires the student to name as many items that start with a particular category, or items that start with a particular letter, in 60 seconds.	X	X		
Orthographic Processing - the student is required to recall a letter, or group of letters, from a previously seen target word.		X	X	
Irregular Word Reading Fluency - the student reads a list of phonologically irregular words of increasing difficulty in 60 seconds.			X	
Semantic Concepts - a multiple choice test requiring the student to select the correct antonym or synonym of a target word.	X		X	
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.	X	X		
Morphological Processing - a multiple-choice test requiring students to choose the correct prefix, suffix, or stem that best completes an incomplete target word.				X
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.	X	X	X	X

CAS2 DCM with WJ-IV Achievement

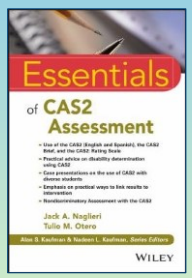


CAS2 DCM with KTEA3



Comparing PASS scores with other Achievement Tests

- See Naglieri & Otero (2017) tables



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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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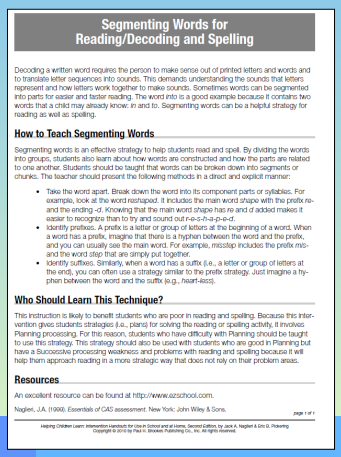
Interventions related to PASS

- *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?

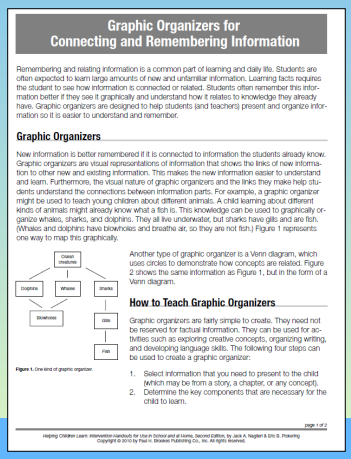
This instruction is likely to benefit students who are poor in reading and spelling. Because this intervention gives students strategies (i.e., plans) for solving the reading or spelling activity, it involves Planning processing. For this reason, students who have difficulty with Planning should be taught 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.azschool.com.

Naglieri, J.A. (1999). *Essentials of CAS assessment*. New York: John Wiley & Sons.

page 1 of 1



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

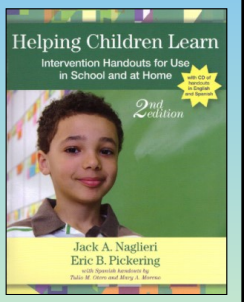
Another type of graphic organizer is a Venn diagram, which uses circles to demonstrate how concepts are related. Figure 2 shows the same information as Figure 1, but in the form of a Venn diagram.

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.

page 1 of 2



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PASS Intervention Protocol

- Help child understand their PASS strengths and areas of challenges (Intentional & Transparent)
- Encourage Motivation & Persistence (Mindset)
- Teach/Stress strategies for approaching tasks (Skill Sets)
  - Student generated
  - Model and Scaffold as needed
- Encourage independence and self efficacy
  - Planning (Metacognition) and Self Assessment

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Measure of Mindset – Child Adolescent

(Naglieri & Kryza, © 2015)

Measure of Mindset (MOM-CA)

Jack A. Naglieri & Kathleen M. Kryza - Copyright © 2015

Name _____

Date _____

Instructions: These 10 questions ask about how you think and feel. The answers you give can help us know your thoughts about how you learn. Please read every question carefully and circle the number under the word that tells what you do.

		Never	Sometimes	Most times	Always
1	I don't give up easily.	0	1	2	3
2	When things get hard I say "I can do it!".	0	1	2	3
3	When I fail I try harder until I get it done.	0	1	2	3
4	I believe that I can learn from my mistakes.	0	1	2	3
5	I think I can do almost anything if I try hard enough.	0	1	2	3
6	When I don't understand something I give up.	0	1	2	3
7	I do not like to be challenged.	0	1	2	3
8	When work is hard I think, "I can't do it".	0	1	2	3
9	When things get hard I do something else.	0	1	2	3
10	When I fail I do something else that is more fun.	0	1	2	3

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Measure of Mindset: Teacher Parent

(Naglieri & Kryza, 2015)

Measure of Mindset (MOM-TP)

Jack A. Naglieri & Kathleen M. Kryza - Copyright © 2015

Name _____

Date _____

		Never	Sometimes	Most times	Always
1	He/she doesn't give up easily.	0	1	2	3
2	When things get hard he/she says "I can do it!".	0	1	2	3
3	Failure leads him/her to try harder untilthe task is finished.	0	1	2	3
4	He/she views failure as an important part of learning.	0	1	2	3
5	He/she believes that you can do anything if you try hard enough.	0	1	2	3
6	He/she is afraid of failure.	0	1	2	3
7	When things get hard he/she avoids the work.	0	1	2	3
8	He/she believes that hard work usually does not pay off.	0	1	2	3
9	He/she is fast to give up on a task.	0	1	2	3
10	He/she views failure as an important part of learning.	0	1	2	3

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K. Kryza's Intervention Plan for Paul

- Be Intentional and Transparent
  - Explain his PASS scores to him
- Build on His Strengths
  - Help him use his Planning, Attention, Simultaneous and Strengths to support his learning challenges with Successive Processing
- Develop Effective Skill Sets to remediate his weaker skills
- Offer and encourage the use of metacognitive strategies that can improve his Successive Processing skills.
- Encourage a Growth Mindset and Self Efficacy

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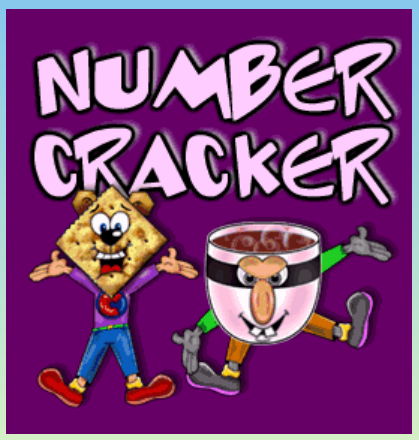
Math Sequencing

- Encouraging students to write out the steps for solving problems. (For example: Steps for solving addition and subtraction problems that include regrouping)
- Use a simple sheet of paper folded into four squares. Ask students to write the steps in order in the squares.

Sequencing Games



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Using Digital Storytelling in the Classroom

- Load pictures from a story out of order, and then save the file as a project.
- Have students rearrange the pictures to assess them for their understanding of sequencing.

PASS & BRAIN FUNCTION

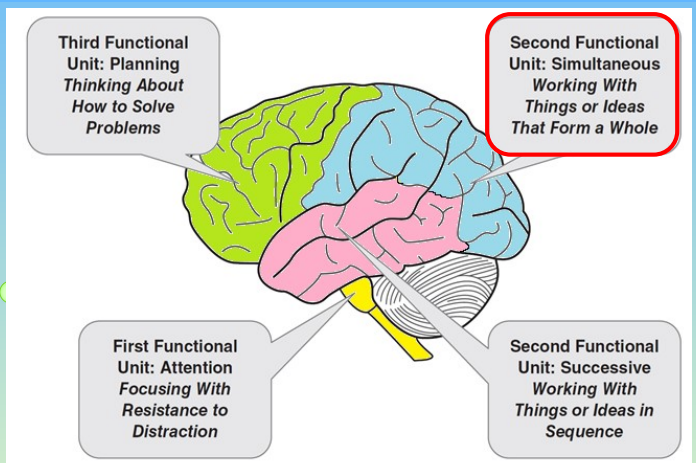

Figure 1.2 Three Functional Units and Associated Brain Structures

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

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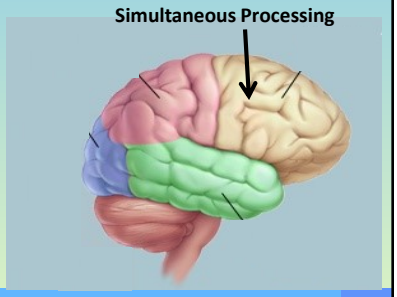
PASS Theory

- **Simultaneous** processing is used to integrate stimuli into groups
  - Stimuli are seen as a whole
  - Each piece must be related to the other
  - Whole language
  - Seeing word as a whole
  - Verbal concepts
  - Geometry, math word problems



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CAS2: Rating Scale Simultaneous

Directions for Items 11–20. These questions ask how well the child or adolescent sees how things go together. They also ask about working with diagrams and understanding how ideas fit together. The questions involve seeing the whole without getting lost in the parts. Please rate how well the child or adolescent visualizes things as a whole.

During the past month, how often did the child or adolescent . . .	Never	Rarely	Sometimes	Frequently	Always
11. like to draw designs?	0	1	2	3	4
12. figure out how parts of a design go together?	0	1	2	3	4
13. classify things into groups correctly?	0	1	2	3	4
14. work well with patterns and designs?	0	1	2	3	4
15. see how objects and ideas are alike?	0	1	2	3	4
16. work well with physical objects?	0	1	2	3	4
17. like to use visual materials?	0	1	2	3	4
18. see the links among several things?	0	1	2	3	4
19. show interest in complex shapes and patterns?	0	1	2	3	4
20. recognize faces easily?	0	1	2	3	4

__ + __ + __ + __ + __ = ☐

Simultaneous Raw Score

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PASS Theory

- **Simultaneous** processing is what Gestalt psychology was based on
- Seeing the whole

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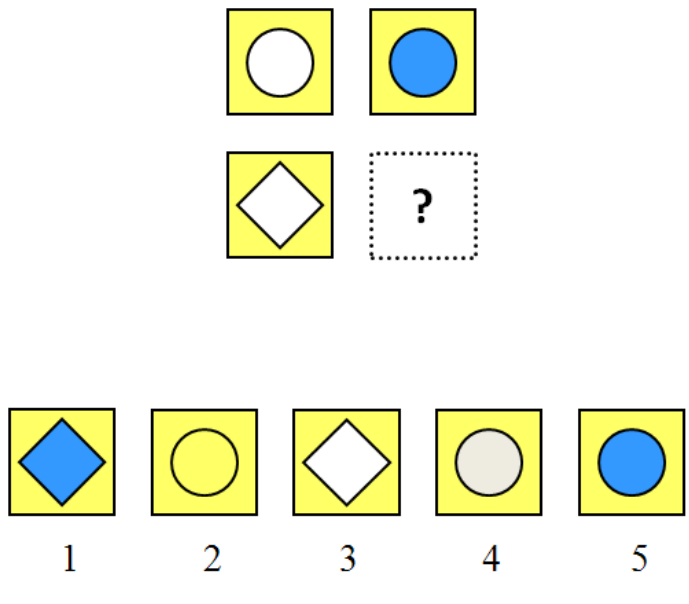

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Test Yourself !

Solve these analogies:

Girl is woman as boy is to _____?

C^7 is to F as E^7 is to _____?

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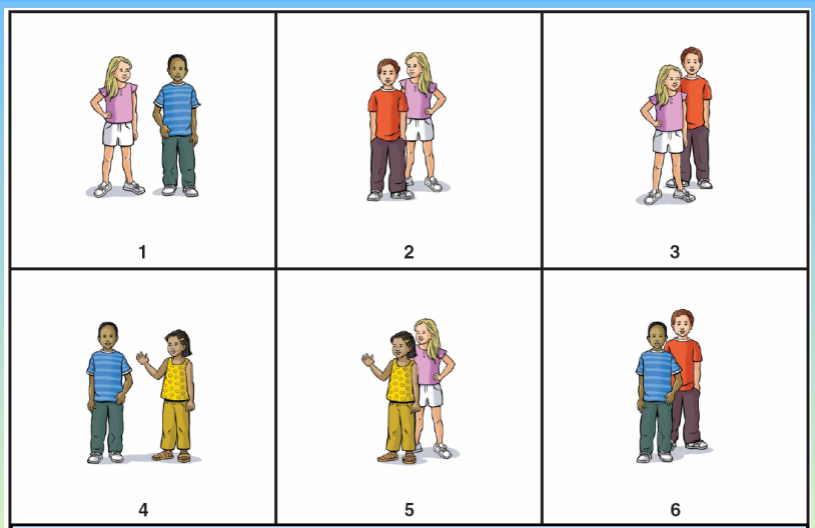
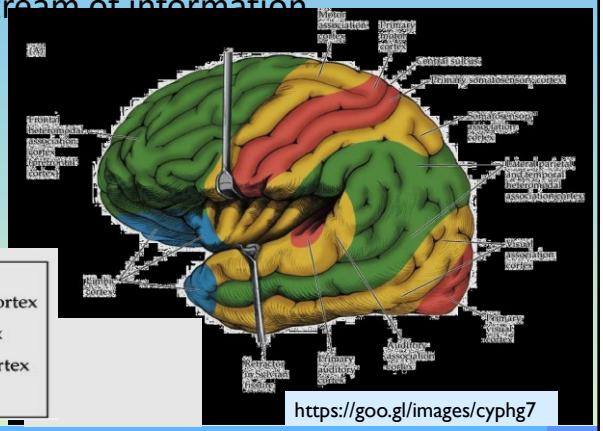
CAS2 Verbal-Spatial Relations



Which picture shows a boy behind a girl?

Heteromodal Association Cortex
(Goldberg, 2006)

- Our brains merge stimuli coming in from the senses into one stream of information
- This helps us understand the relationship between modality and processing

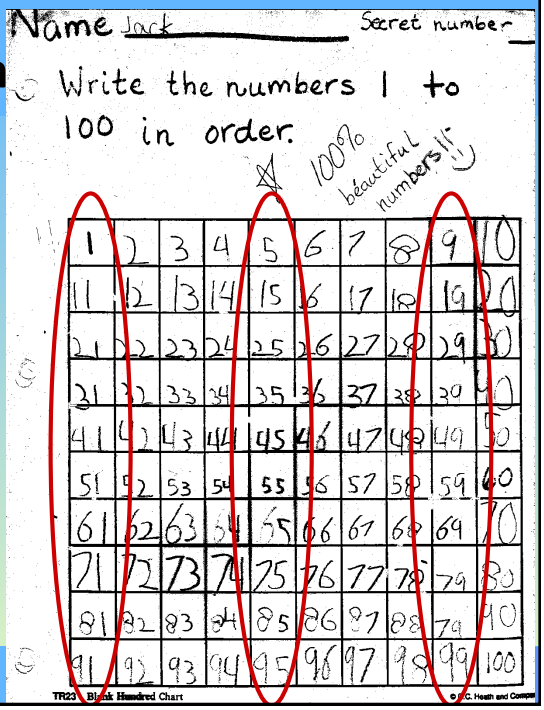


Key
- Primary motor or sensory cortex
- Unimodal association cortex
- Heteromodal association cortex
- Limbic cortex

https://goo.gl/images/cyphg7

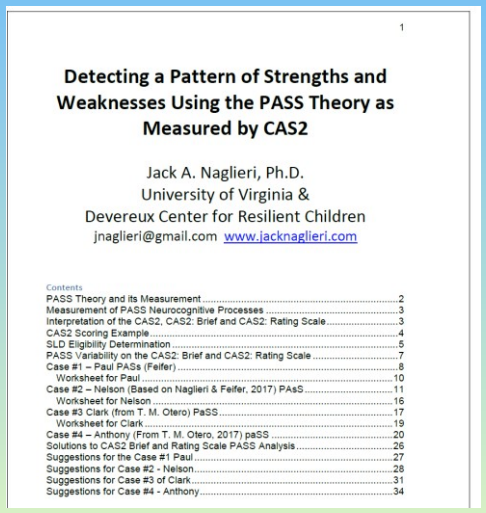
Numbers from 1 to 100

Simultaneous processing facilitated by this work sheet



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
jnaglieri@gmail.com www.jacknaglieri.com

Contents

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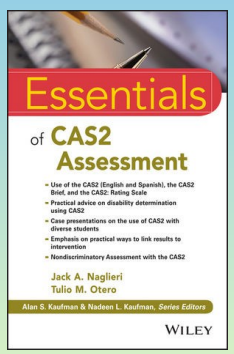
Case of Nelson (Naglieri & Feifer, 2017, Intervention Chapter 5)

- 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)

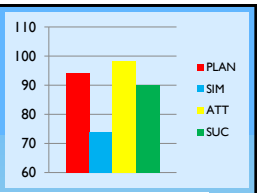

Table 5.2 Nelson's CAS2 Scoring

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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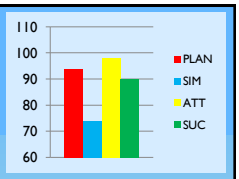
Case of Nelson (Naglieri & Feifer, 2017)



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**

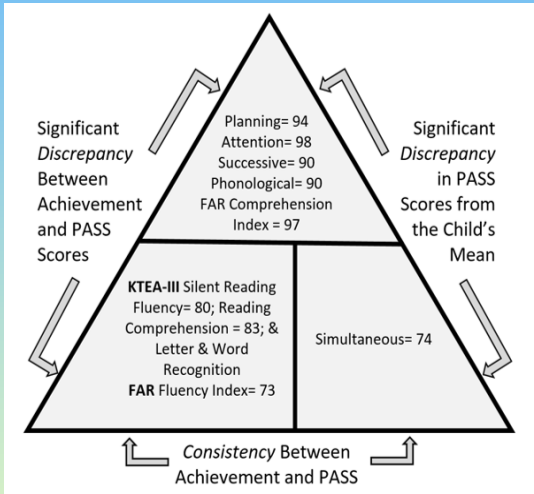

Figure 5.5 Nelson's Discrepancy/Consistency Method of SLD Results

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Case Workbook Activity

- Time to think and talk in your CORE GROUP
- Does this approach to analyzing basic psychological processes and academic performance …
  - Make sense?
  - Help you justify an SLD determination?
  - Give you ideas for intervention?

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Presentation Outline

- Introduction
  - Using groups to stimulate thinking
  - How traditional IQ has influenced us
- A new way of thinking about intelligence
  - PASS theory defines basic psychological processes
    - Each PASS ability, case studies and interventions
  - How to measure PASS neurocognitive processes
- Final thoughts

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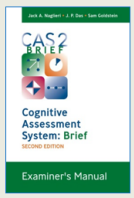
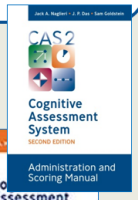
PASS Comprehensive System

(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





Who can use CAS2, CAS2: Brief, & CAS2 Rating Scale

- CAS2 Interpretive Manual (Naglieri, et al, 2014, p. 13)

Educational Diagnostician

QUALIFICATIONS OF USERS

We anticipate that the CAS2 will be used by individuals with creden-tials as psychologists (e.g., clinical, school, developmental, counseling, neuropsychological, rehabilitation), certified specialists (educational diagnosticians, psychometrists), and other trained professionals who are certified to use tests of intelligence. Responsibility for the proper use and interpretation of the results of the CAS2 rests with the practitioner. We assume that each professional who uses this system does so with an appropriate appreciation of the required level of competence and ethical responsibility and a thorough examination of the guidelines presented in this manual.

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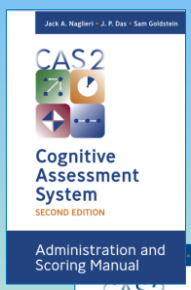
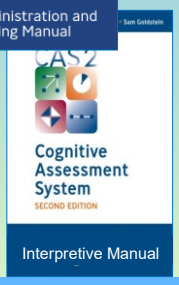
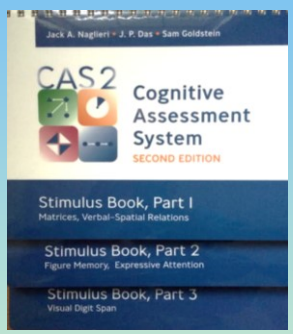
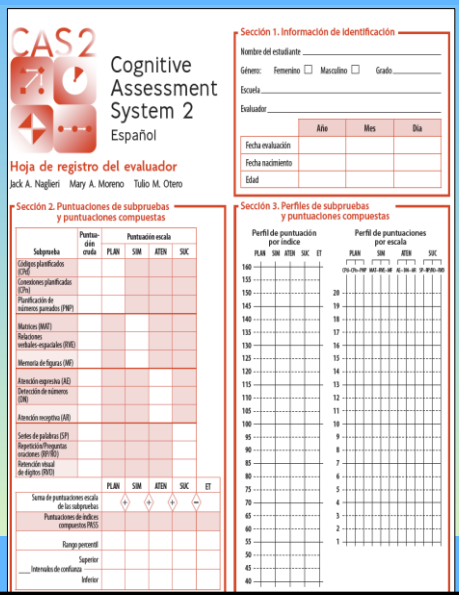
CAS2 for (Ages 5-18 yrs.)







CAS2 Español (Ages 5-18 yrs.)


CAS2
Cognitive Assessment System 2
Español
Hoja de registro del evaluador
Jack A. Naglieri Mary A. Moreno Tulio M. Otero
Sección 1. Información de identificación
Sección 2. Puntuaciones de subpruebas y puntuaciones compuestas
Sección 3. Perfiles de subpruebas y puntuaciones compuestas

CAS2

- 8 (40 minutes) or 12 (60 minutes) subtest versions
- PASS and Full Scales provided (100 & 15) subtests (10 and 3)

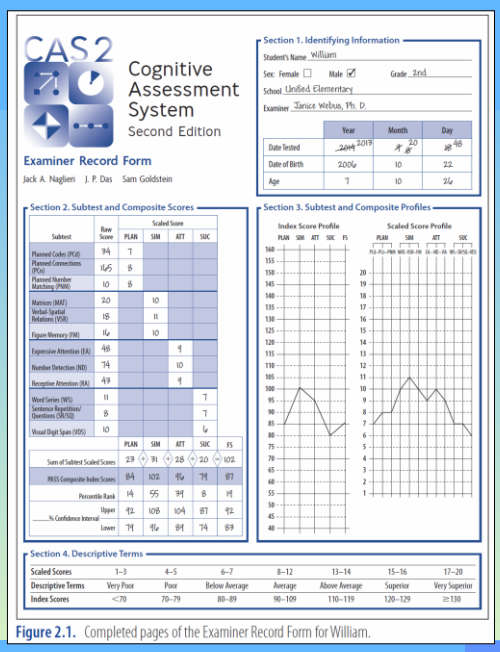

CAS2
Cognitive Assessment System
Second Edition
Examiner Record Form
Jack A. Naglieri J. P. Das Sam Goldstein
Section 1. Identifying Information
Section 2. Subtest and Composite Scores
Section 3. Subtest and Composite Profiles
Section 4. Descriptive Terms

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

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CAS2

- Supplementary Scales: Executive Function, Working Memory, Verbal, Nonverbal,
- A Visual and Auditory comparison
- Speed/Fluency scale is new

Supplemental Composite Scores

Subtest	Scaled Score				
	EF w/o WM	EF w/ WM	WM	VC	NvC
Planned Codes					7
Planned Connections	8	8			
Matrices					10
Verbal-Spatial Relations		11	11	11	
Figure Memory					10
Expressive Attention	9	9			
Receptive Attention				9	
Sentence Repetition/Questions		7	7	7	
	EF w/o WM	EF w/ WM	WM	VC	NvC
Sum of Subtest Scaled Scores	17	35	18	27	27
Composite Index Scores	91	91	94	93	92
Percentile Rank	27	27	34	32	30
Upper ____% Confidence Interval	101	99	101	101	99
Lower	84	85	88	87	86

Note: EF w/o WM = Executive Function without Working Memory; EF w/WM = Executive Function with Working Memory; WM = Working Memory; VC = Verbal Content; NvC = Nonverbal Content.

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CAS2 Online Score & Report

- Narrative report can be obtained in Word or PDF

CAS2 Cognitive Assessment System
Second Edition

Scoring and Interpretive Report
Jack A. Naglieri

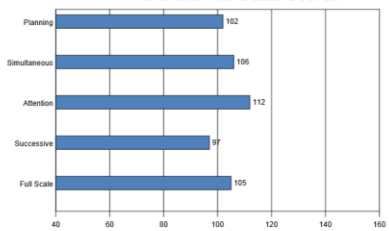
Name: Jack Nag
Age: 8
Gender: Male
Date of Birth: 07-12-2005
Grade: 5
School: East Lake

This computerized report is intended for use by qualified individu information can be found in the CAS2 Interpretive Manual.

FULL SCALE

Jack earned a Cognitive Assessment System, Second Edition (CAS2) Full Scale score of 105, which is within the Average classification and is a percentile rank of 63. This means that his performance is equal to or greater than that of 63% of children his age in the standardization group. There is a 90% probability that Jack's true Full Scale score falls within the range of 101 to 109. The CAS2 Full Scale score is made up of separate scales called Planning, Attention, Simultaneous, and Successive cognitive processing. Because there was significant variation among the PASS scales, the Full Scale will sometimes be higher and other times lower than the four scales in this test. The Attention Scale was found to be a significant cognitive strength. This means that Jack's Attention score was a strength both in relation to his average PASS score and when compared to his peers. This cognitive strength has important implications for instructional and educational programming.

PASS and Full Scale Scores



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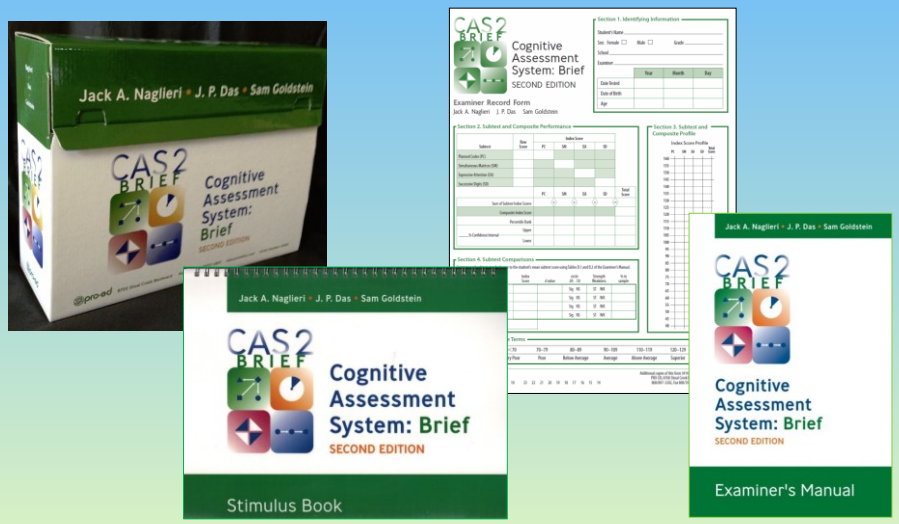
CAS2: Brief for Ages 4-18 years



CAS2: Brief

- Give in 20 minutes
- **Good for reevaluations**
- Yields PASS and Total standard scores (Mn 100, SD 15)
- All items are different from CAS2
  - Planned Codes
  - Simultaneous Matrices
  - Expressive Attention
- New Subtest
  - Successive Digits (forward only)

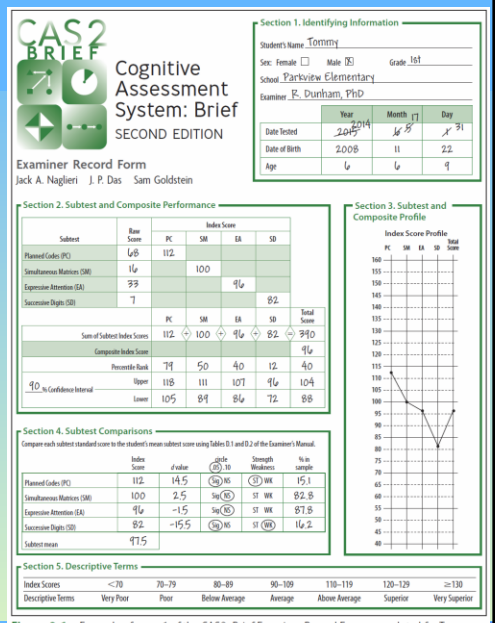


Figure 3.1. Example of page 1 of the CAS2: Brief Examiner Record Form, completed for Tommy.

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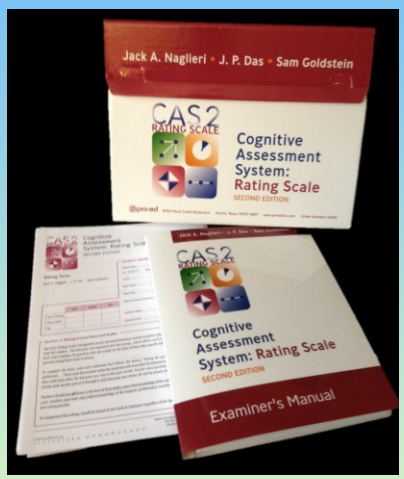
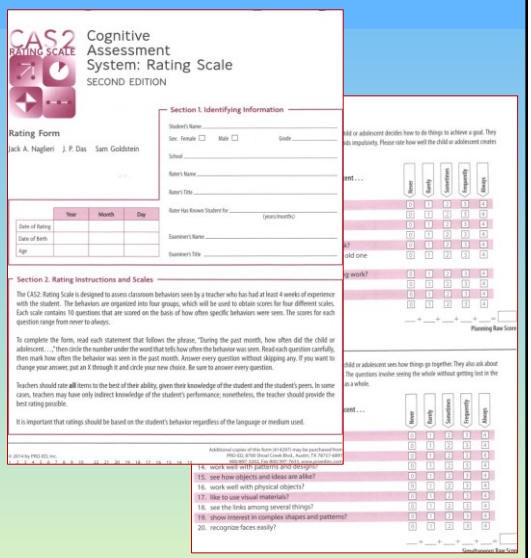
CAS2 Rating Scales (Ages 4-18 yrs.)

- The CAS2: Rating measures behaviors associated with PASS constructs
- Normed on a nationally representative sample of 1,383 students rated by teachers



CAS2 Rating Scales

- The CAS2: Rating form contains 40 items
- 10 items for each PASS scale
- PASS and Total scales are set to have a mean of 100 and standard deviation of 15



CAS2 Rating Scales

- The rater is given a description of what each scale is intended to measure.
- This informs teachers about PASS

Directions for Items 1–10. These questions ask how well the child or adolescent decides how to do things to achieve a goal. They also ask how well a child or adolescent thinks before acting and avoids impulsivity. Please rate how well the child or adolescent creates plans and strategies to solve problems.

Directions for Items 11–20. These questions ask how well the child or adolescent sees how things go together. They also ask about working with diagrams and understanding how ideas fit together. The questions involve seeing the whole without getting lost in the parts. Please rate how well the child or adolescent visualizes things as a whole.

Directions for Items 21–30. These questions ask how well the child or adolescent pays attention and resists distractions. The questions also ask about how well someone attends to one thing at a time. Please rate how well the child or adolescent pays attention.

Directions for Items 31–40. These questions ask how well the child or adolescent remembers things in order. The questions ask about working with numbers, words, or ideas in a series. The questions also ask about doing things in a certain order. Please rate how well the child or adolescent works with things in a specific order.

CAS2 Rating Scales

- The CAS2: Rating Scale scores can be used as part of a larger comprehensive evaluation or for instructional planning

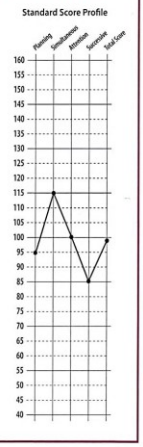
Section 3. PASS Scale and Total Score Summary

PASS Scale	Raw Score	Standard Scores: Planning	Simultaneous	Attention	Successive
Planning	19	95			
Simultaneous	31		115		
Attention	24			100	
Successive	11				85

	Planning	Simultaneous	Attention	Successive	Sum of Standard Scores
Standard Score	95	115	100	85	395
Total Score					99
Percentile Rank	37	84	50	16	47
Upper ___% Confidence Interval	100	120	105	92	102
Lower	90	108	95	80	96

Section 4. PASS Scale and Total Score Profile

Standard Score Profile



Section 5. PASS Scale Comparisons

Compare each PASS scale standard score to the student's mean PASS score using Tables C.1 and C.2 of the Examiner's Manual.

	Standard Score	d value	Circle .05 .10	Strength Weakness	% in sample
Planning	95	-3.8	Sig (NS)	ST WK	68.0
Simultaneous	115	16.2	(Sig) NS	(ST) WK	10.8
Attention	100	1.2	Sig (NS)	ST WK	96.3
Successive	85	-13.8	(Sig) NS	ST (WK)	16.9
PASS mean	98.8				

Section 6. Descriptive Terms

Descriptive Terms	Very Poor	Poor	Below Average	Average	Above Average	Superior	Very Superior
Standard and Total Score	<70	70–79	80–89	90–109	110–119	120–129	≥130

Figure 2.3. Sample page 4 of Rating Form, completed for Tommy.

Reactions…

- Are you comfortable with the PASS approach to psychological processes and its measurement using the various CAS2 measures?
  - Does it… make sense?
  - help you justify an SLD determination?
  - give you ideas for intervention?
- Your questions and reactions?

Presentation Outline

- Introduction
  - Using groups to stimulate thinking
  - How traditional IQ has influenced us
- A new way of thinking about intelligence
  - PASS theory defines basic psychological processes
    - Each PASS ability, case studies and interventions
  - How to measure PASS neurocognitive processes
- Final thoughts

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CAS2 and PASS Theory

- The CAS2 instruments 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
- 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

THANK YOU !

jnaglieri@gmail.com
www.jacknaglieri.com

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A Study of Gifted Students

- This table shows the number of gifted students who have a PASS score that is significantly different from that student's average PASS score

Table 3.

Percentages of Gifted Students with Significant Variability in PASS Standard Scores (N = 142).

		Planning	Simultaneous	Attention	Successive	PASS
PASS Weakness	n	25	6	18	28	77
	%	18%	4%	13%	20%	54%
PASS Strength	n	7	58	13	12	90
	%	5%	41%	9%	8%	63%

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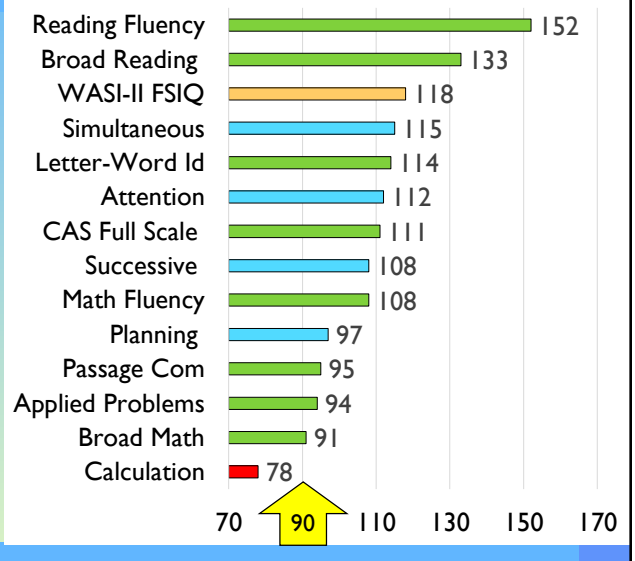
Case Study #1

- Planning is significantly below the PASS average score but still Average
- Calculation is below 90 (25th %tile rank)
- NOT SLD but PASS does inform instruction



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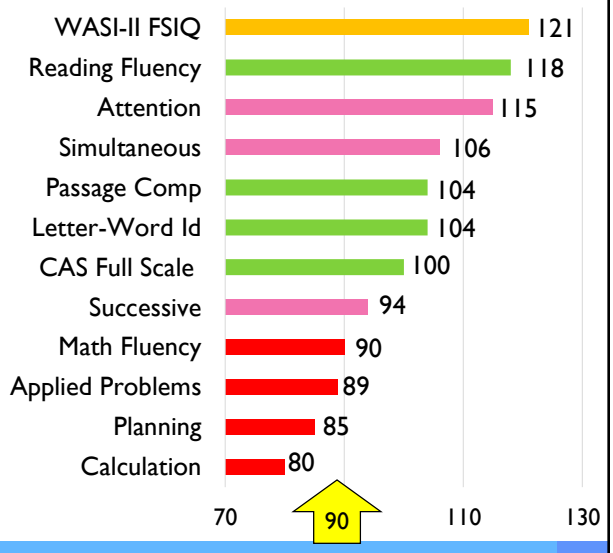
Case Study #2

- This illustrates a student with scores <90 (25%tile) in basic psychological processing and academic achievement



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Study #2 High Ability Students

- N = 100 selected from the Cognitive Assessment System standardization sample if the Full Scale score was > 119

	Planning	Simultaneous	Attention	Successive	Full Scale
Mean	120.6	119.0	120.5	117.4	125.0
SD	10.1	10.7	11.8	9.4	4.4
N	100	100	100	100	100

- 11% had at least one PASS strength
- 13% had at least one PASS weakness
- 2% had a PASS weakness < 90

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