SLD ELIGIBILITY USING A PATTERN OF STRENGTHS AND WEAKNESSES: A SIMPLE SOLUTION

- In this session we will provide a straightforward way school psychologists can use the so called 'third method' for SLD eligibility determination to both classify and remediate specific learning disabilities. This will include a brief look at the research on the effectiveness of traditional IQ and second-generation tests for SLD identification and socially just assessment. Emphasis will be placed on a step-by-step analysis illustrated using PASS theory to measure 'basic psychological processes' in a manner consistent with California's current definition of SLD and Dyslexia. Specific cases will be presented to describe how defensible SLD eligibility decisions can be made, and most importantly, how targeted interventions can be generated for instructional planning purposes.
-
- The primary learning objectives will be:
- 1. Explore the basic neurocognitive processes in the brain that are the foundation of learning and the cause of specific learning disorders in children.
- 2. Introduce the discrepancy-consistency method as an evidence-based means to both identify and remediate language-based learning disorders in children.
- 3. Discuss specific psychological and neuropsychological tests that provide the most comprehensive and efficient means for assessing children with learning disorders and Dyslexia.

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SLD Eligibility Using a Pattern of Strengths and Weaknesses: A Simple Equitable Solution

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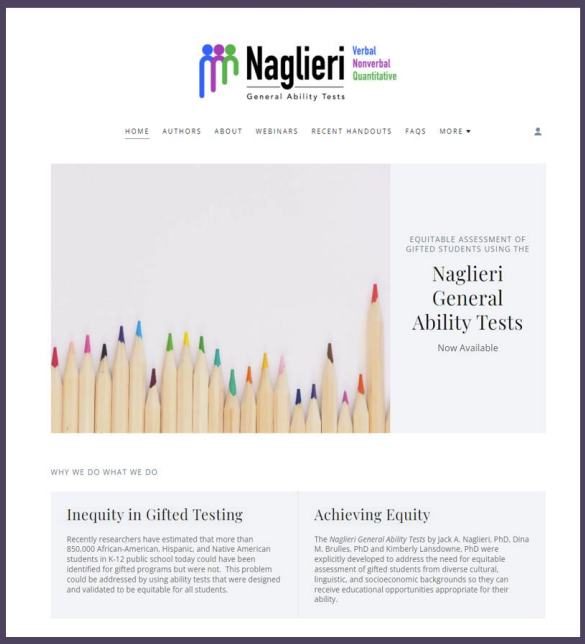
FOR MORE INFORMATION PLEASE GO TO MY WEB PAGES



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How Are You Feeling Today ?

4

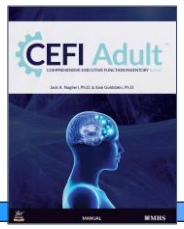
4

Let's Get Ready to Learn

5

Disclosures

Executive Function



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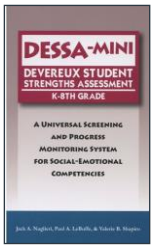
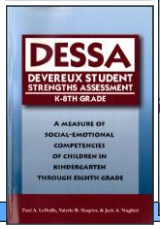
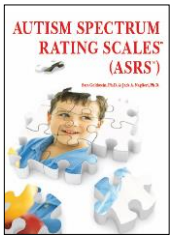
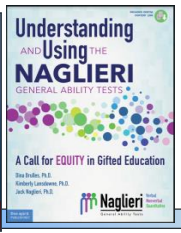


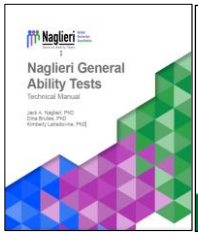


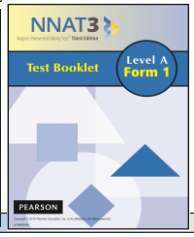
Autism



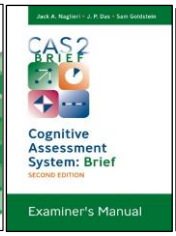


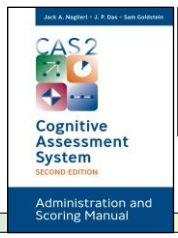
Gifted Identification

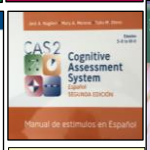




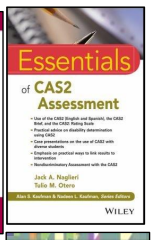
PASS Neurocognitive Theory: Assessment & Intervention Handouts







Coming 2022 CAS2 Online Admin & Scoring



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Core Group Discussion → Deeper Learning

- **C**oach – Help the group decide what to do
- **O**rganizer – Guide the discussion
- **R**ecorder – Keep notes and speak for the group
- **E**nergizer – Focus the group !

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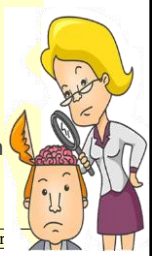
The BIG picture

- The comprehensive assessments we provide can alter the course of a student's life; making this one of the most important tasks we have.
- We want Intellectual assessment that
  - Is consistent with IDEA and state regulations regarding SLD determination
  - Helps us understand WHY a student fails
  - Informs teachers and the students about academic strengths & weaknesses and interventions
  - Is fair for students from diverse populations
- These goals can be achieved if we use second-generation tests that measure the way students THINK to LEARN
  - The definition of THINKING should be based on BRAIN function
  - PASS theory is a way of defining THINKING and the Cognitive Assessment System-2nd Edition measures a student's ABILITY to think



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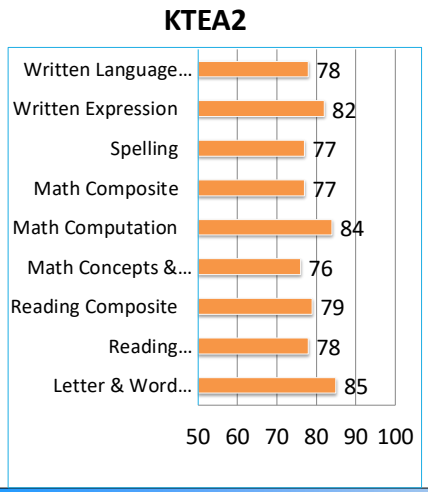
CASE by Tulio Otero: ALEJANDRO (C.A. 7-0 GRADE 1)

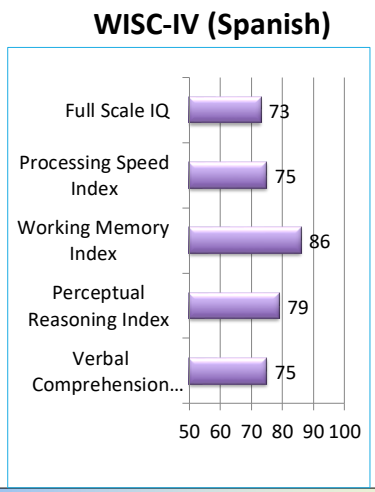
REASON FOR REFERRAL

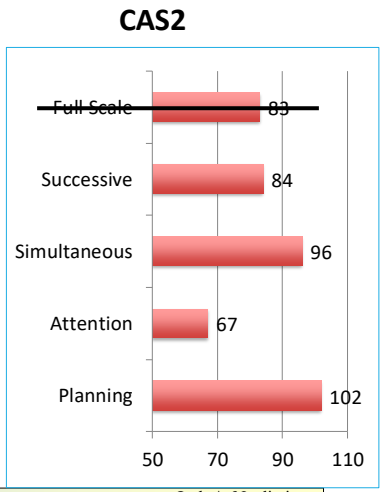
- Does he have ID?
- Academic:
  - Could not identify letters/sounds
  - October. Could only count to 39
  - All ACCESS scores of 1
- Behavior:
  - Difficulty following directions
  - Attention concerns
  - Refusal/defiance

Note: this is not a picture of Alejandro

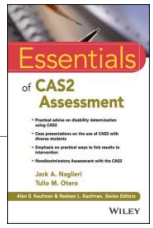
WISC-IV ASSESSMENT



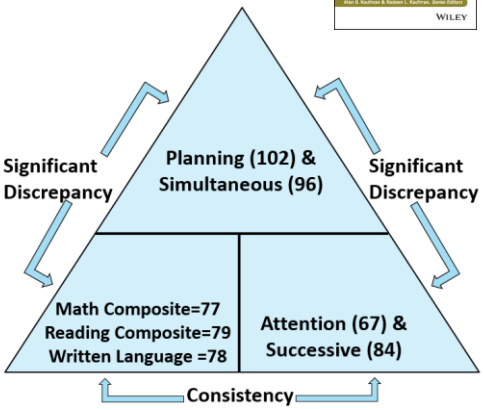




Alejandro and PASS (by Dr. Otero)



- Alejandro is not a slow learner.
- He has strengths:
  - Simultaneous = 96 and Planning = 102
- There is evidence of a disorder in one or more of the basic psychological processes (i.e. Attention = 67 and Successive = 84) which explains WHY THE STUDENT FAILS
- When the student and teachers understands PASS strengths and weaknesses self-image, persistance and motivation change

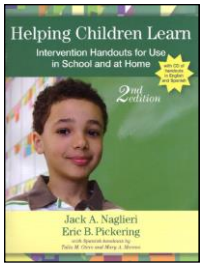


Intervention Protocol (Naglieri & Kryza, 2019)

1. Help child understand their PASS strengths and challenges (be intentional & transparent)
2. Encourage Motivation & Persistence (student's mindset)
3. Encourage strategy use (build skill sets)
4. Encourage independence and self efficacy (metacognition, self assessment & self correction)

Be Intentional and Transparent

- Give Alejandro the PASS handouts
  - *"The test showed that your brain is strong in seeing the BIG PICTURE (Simultaneous Processing) and*
  - *recognizing sequences is weaker. (Successive Processing) Does that make sense to you?*
- Explain to him the PASS areas that are challenges for him
  - The part of your brain that makes learning challenging for you is the part that allows you to keep information in order (provide examples) and controlling your attention.
  - We're going to work on using your strengths and helping you develop your ability to keep things in seqeunce and to use your planning.



Ideas to Consider

My Professional Journey
- An Awakening About Traditional Intelligence Tests

A Theory Based on Brain Function
- Thinking vs Knowing and Social Justice

From PASS to CAS2
- A Different View of People

Research Update
- PASS and Equity – Measure Thinking not Knowing
- To *g* or not to *g*

Administration and Interpretation Issues
- Test order, subtest interpretation, etc.

Reasons To Change
- Validity of PASS Theory

Traditional IQ and Achievement Tests

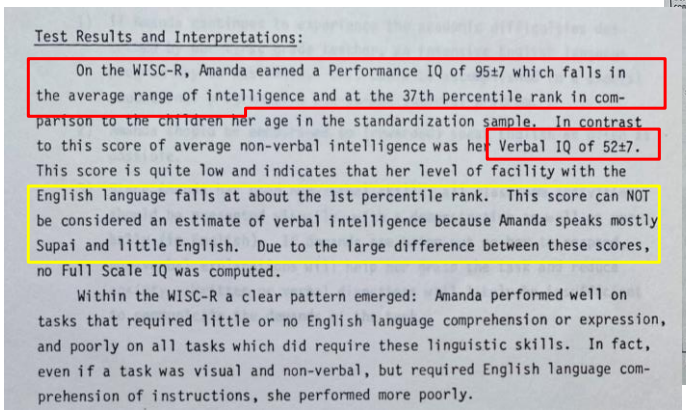
- Working as a school psychologist in 1975 I noticed that items on the WISC we were VERY similar to parts of the achievement tests
  - In fact the *Peabody Individual Achievement Test* (1970) had a General Information and Arithmetic subtests JUST LIKE THE WISC!
  - THAT DID NOT MAKE SENSE
  - In 1977 → UGA for Ph.D. With Alan Kaufman who said VIQ=achievement
  - THAT made sense!

1975 Charles Champagne Elementary, Bethpage, NY

How and Why…

- First job as assistant professor at Northern Arizona University - 1979
  - Lecture on Navajo Native Americans
  - Testing students in Supai, AZ

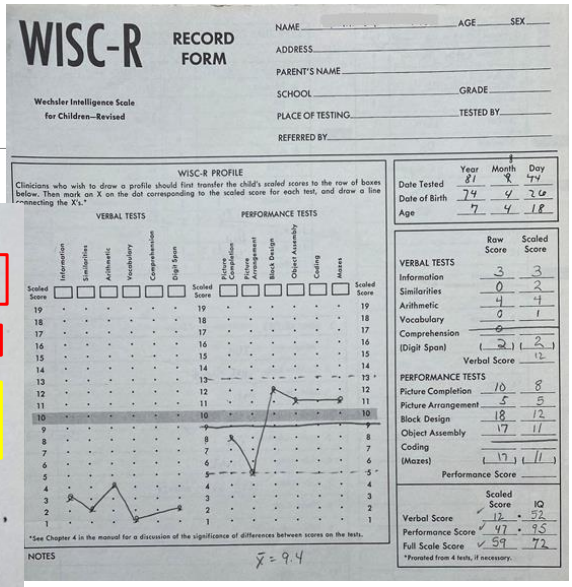
How and Why…



Test Results and Interpretations:

On the WISC-R, Amanda earned a Performance IQ of 95±7 which falls in the average range of intelligence and at the 37th percentile rank in comparison to the children her age in the standardization sample. In contrast to this score of average non-verbal intelligence was her Verbal IQ of 52±7. This score is quite low and indicates that her level of facility with the English language falls at about the 1st percentile rank. This score can NOT be considered an estimate of verbal intelligence because Amanda speaks mostly Supai and little English. Due to the large difference between these scores, no Full Scale IQ was computed.

Within the WISC-R a clear pattern emerged: Amanda performed well on tasks that required little or no English language comprehension or expression, and poorly on all tasks which did require these linguistic skills. In fact, even if a task was visual and non-verbal, but required English language comprehension of instructions, she performed more poorly.



WISC-R RECORD FORM

Wechsler Intelligence Scale for Children–Revised

NAME AGE SEX
ADDRESS
PARENT'S NAME
SCHOOL GRADE
PLACE OF TESTING TESTED BY
REFERRED BY

WISC-R PROFILE

Clinicians who wish to draw a profile should first transfer the child's scaled scores to the row of boxes below. Then mark an X on the dot corresponding to the scaled score for each test, and draw a line connecting the X's.

VERBAL TESTS: Information, Similarities, Arithmetic, Vocabulary, Comprehension, (Digit Span)

PERFORMANCE TESTS: Picture Completion, Picture Arrangement, Block Design, Object Assembly, Coding, Mazes

	Year	Month	Day
Date Tested	81	9	14
Date of Birth	74	4	20
Age	7	4	18

	Raw Score	Scaled Score
VERBAL TESTS		
Information	3	3
Similarities	0	2
Arithmetic	4	4
Vocabulary	0	1
Comprehension	0	
(Digit Span)	(2)	(2)
Verbal Score		12
PERFORMANCE TESTS		
Picture Completion	10	8
Picture Arrangement	5	5
Block Design	18	12
Object Assembly	17	11
Coding		
(Mazes)	(17)	(11)
Performance Score		

	Scaled Score	IQ
Verbal Score	12	52
Performance Score	47	95
Full Scale Score	59	72

*Prorated from 4 tests, if necessary.

*See Chapter 4 in the manual for a discussion of the significance of differences between scores on the tests.

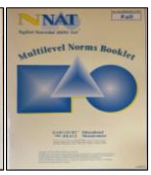
NOTES

$\bar{X} = 9.4$

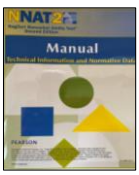
How and Why…

- First Research Article
  - Naglieri, J. A. (1982). Does the WISC-R measure verbal intelligence for non-English speaking children? *Psychology in the Schools, 19*, 478-479.
- Tests and books
  - Matrix Analogies Tests Individual and Group administrations (1985)
  - NNAT - 1997
  - CAS – 1997
  - Essentials of CAS Assessment 1999
  - Helping All Gifted Students Learn (Naglieri, Brulles & Lansdowne, 2009)

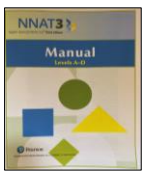
1985 MAT Short and Expanded Forms



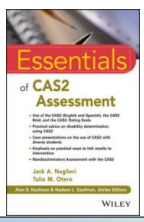
Naglieri Nonverbal Ability Test in 1997

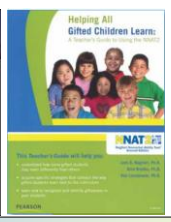


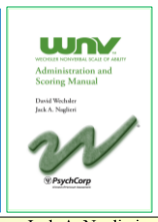
NNAT -2 published in 2008



NNAT -3 published in 2016

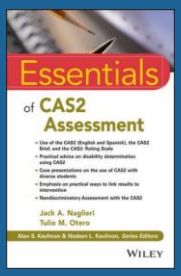






Naglieri & Otero (2017) on Fairness

We can and must do better



Traditional IQ tests are insufficient for equitable assessment for several reasons:

1. These tests were not built on a *theory of intelligence* which is critical for test development and interpretation
2. Subtests that demand knowledge confound the measurement of intelligence
3. The knowledge requirement is inconsistent with equitable assessment
4. The only score deemed interpretable is the Full Scale

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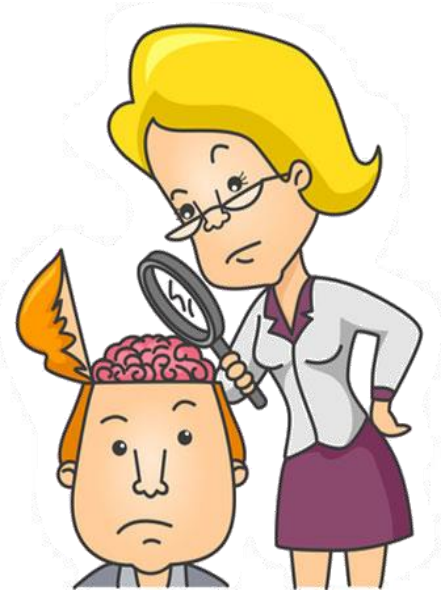
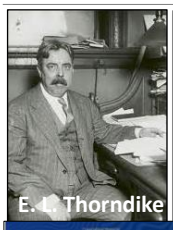
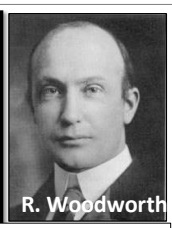
Why do we measure intelligence the way we do?

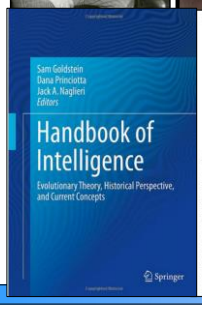
The History of IQ tests



Evolution of IQ http://www.jacknaglieri.com/cas2.html








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

Jack A. Naglieri

Context

- A group of psychologists met at Harvard in April of 1917 to construct an ability test to help the US military evaluate recruits (WWI)
- By July 1917 their research showed that the Army Alpha (Verbal & Quantitative) and Beta (Nonverbal) 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).
- This was the foundation of the Wechsler Scales – Verbal, Performance (Nonverbal) and Quantitative subtests as well as the Otis-Lennon and CogAT

From Alpha & Beta to Wechsler IQ

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

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

→ Verbal IQ (Knowledge)

→ Originally called "Performance" now "Nonverbal" (Thinking)

→ WISC, DAS, WJ Cog
CogAT & Otis-Lennon

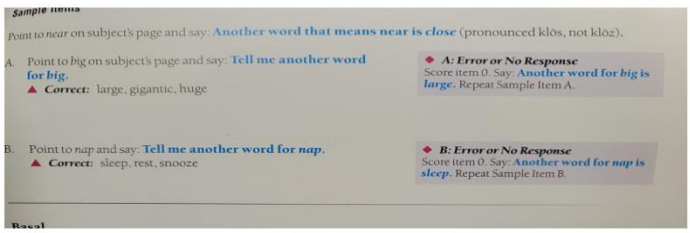
The US Army Alpha Test (Verbal)

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

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

WJ-IV Items from Cognitive and Achievement Tests:

Cognitive: Oral Vocabulary Subtest 1


Sample Items

Point to *near* on subject's page and say: **Another word that means near is *close*** (pronounced klōs, not klōz).

A. Point to *big* on subject's page and say: **Tell me another word for *big*.**
▲ **Correct:** large, gigantic, huge

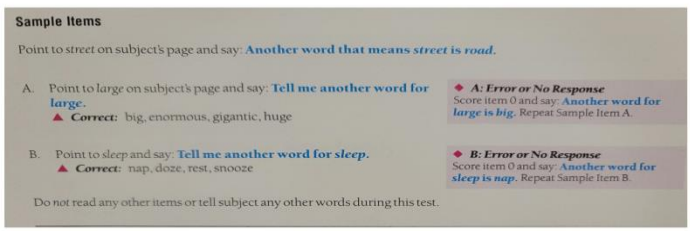
◆ **A: Error or No Response**
Score item 0. Say: **Another word for *big* is *large*.** Repeat Sample Item A.

B. Point to *nap* and say: **Tell me another word for *nap*.**
▲ **Correct:** sleep, rest, snooze

◆ **B: Error or No Response**
Score item 0. Say: **Another word for *nap* is *sleep*.** Repeat Sample Item B.

Basal

Achievement: Reading Vocabulary-Synonyms Subtest 17


Sample Items

Point to *street* on subject's page and say: **Another word that means *street* is *road*.**

A. Point to *large* on subject's page and say: **Tell me another word for *large*.**
▲ **Correct:** big, enormous, gigantic, huge

◆ **A: Error or No Response**
Score item 0 and say: **Another word for *large* is *big*.** Repeat Sample Item A.

B. Point to *sleep* and say: **Tell me another word for *sleep*.**
▲ **Correct:** nap, doze, rest, snooze

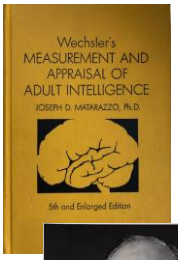
◆ **B: Error or No Response**
Score item 0 and say: **Another word for *sleep* is *nap*.** Repeat Sample Item B.

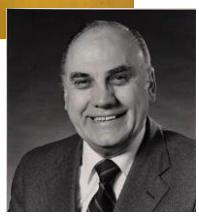
Do not read any other items or tell subject any other words during this test.

Very Similar Items on "Different" Tests

The Problem with Verbal and Quantitative tests

- When English is required in a vocabulary test of general ability this disadvantages ELL students and those with limited educational opportunity.
- Matarazzo (1972) wrote about he Wechsler Scales
  - "…Vocabulary is necessarily influenced by … education and cultural opportunities (p. 218)"
  - when referring to the Arithmetic subtest, "…its merits are lessened by the fact that it is influenced by education (p. 203)."
- The tests we use vary based on the amount of English language skills, and general verbal knowledge, required
- What about the Army Beta test (i.e. NONVERBAL) ?





Knowledge is Included in "Ability" Tests

Stanford-Binet-5	WISC-V	WJ-IV	KABC-II	OLSAT	CogAT
• Verbal • Knowledge • Quantitative Reasoning • Vocabulary • Verbal Analogies	• Verbal Comprehension Vocabulary, Similarities, Information & Comprehension • Fluid Reasoning Figure Weights, Arithmetic	• Comprehension Knowledge: Vocabulary & General Information • Fluid Reasoning: Number Series & Concept Formation • Auditory Processing: Phonological Processing	• Knowledge / GC • Riddles, • Expressive Vocabulary, • Verbal Knowledge	• Verbal • Following directions • Verbal Reasoning • Quantitative • Verbal Arithmetic Reasoning	• Verbal Scale • Analogies • Sentence Completion • Verbal Classification • Quantitative • 45 pages of oral instructions

1920 Army Testing (Yoakum & Yerkes)

Note there is no mention of measuring verbal and nonverbal intelligences – **they saw a social justice issue…and today in the era a BLM the need is even more urgent**

Why Beta?

METHODS AND RESULTS 19

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.

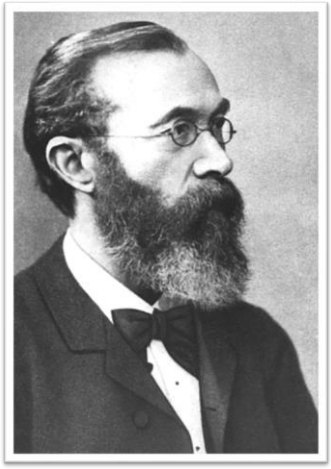
CONCEPT OF GENERAL INTELLIGENCE 61

The Criteria of a Test of Intelligence. — Influenced both by the theoretical discussion of general intelligence and by the empirical work of testing, we have arrived at certain requirements for a good test of intelligence, which we may discuss under the four following headings:

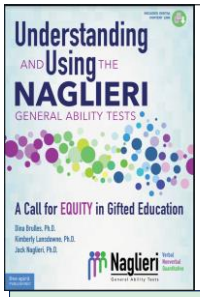
1. *Tests must be relatively new.* — A good intelligence test must avoid as much as possible anything that is commonly learned by the subjects tested. In a broad sense this rests upon a differentiation between knowledge and intelligence. To use as a test of intelligence something that is commonly taught in school is not desirable, because those children who have reached the particular grade in which this is generally taught have memorized this fact, whereas other children of equal or greater intelligence may have had no opportunity to learn this same fact, simply because they may not have reached this particular grade in their school work. To ask the question, "Who discovered America?" would be indicative of the school progress or general cultural environment of the child rather than of his general intelligence. Failure to answer might indeed be due to lack of intelligence in the case of school children of a certain grade in which this had been a matter of instruction, but on the other hand a very intelligent child might fail to answer owing to the fact of his not being in the grade in which this was taught.

Pintner
(Intelligence Testing, 1923)

- This is a social justice issue for those from disadvantaged communities and those with limited education



Race and Ethnic Differences by Ability Test



Notes: The results summarized here were reported for the Otis-Lennon School Ability Test by Avant and O'Neal (1986); Stanford-Binet IV by Wasserman (2000); Woodcock-Johnson III race differences by Edwards & Oakland (2006) and ethnic differences by Sotelo- Dynega, Ortiz, Flanagan & Chaplin (2013); CogAT7 by Carman, Walther and Bartsch (2018); WISC-V by Kaufman, Raiford & Coalson (2016); Kaufman Assessment Battery for Children-II by Lichenberger, Sotelo- Dynega and Kaufman (2009); CAS by Naglieri, Rojahn, Matto & Aquilino (2005); CAS-2 and CAS2:Brief by Naglieri, Das & Goldstein, 2014; Naglieri Nonverbal Ability Test by Naglieri and Ronning (2000), and Naglieri General Ability Tests by Naglieri, Brulles and Lansdowne (2021).

From: Brulles, D., Lansdowne, K. & Naglieri, J. A. (2022). Understanding and Using the Naglieri General Ability Tests: A Call to Equity in Gifted Education. Minneapolis, MN: Free Spirit Publishing.

Race and Ethnic Standard Score Differences Across Intelligence Tests	By Race	By Ethnicity
Tests that require knowledge	**Mn = 11.5**	**Mn = 9.2**
Otis-Lennon School Ability Test (distric wide)	13.6	
Stanford-Binet IV (normative sample)	12.6	
WISC-V (normative sample)	11.6	
WJ- III (normative sample)	10.9	10.7
CogAT7 (Nonverbal scale)	11.8	7.6
WISC-V (statistical controls normative sample)	8.7	
Tests that require minimal knowledge	**Mn = 4.1**	**Mn = 2.6**
K-ABC (normative sample)	7.0	
K-ABC (matched samples)	6.1	
CAS-2 (normative sample)	6.3	4.5
CAS (statistical controls normative sample)	4.8	4.8
CAS-2 (statistical controls normative sample)	4.3	1.8
CAS-2 Brief (normative samples)	2.0	2.8
NNAT (matched samples)	4.2	2.8
Naglieri General Ability Test-Verbal	2.2	1.6
Naglieri General Ability Test-Nonverbal	1.0	1.1
Naglieri General Ability Test-Quantitative	3.2	1.3

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Note: Even though a test may not show psychometric bias (Worrell, 2019) those tests with academic content that show large mean score differences are not equitable and are unfair.

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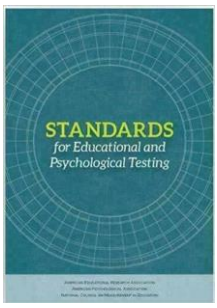
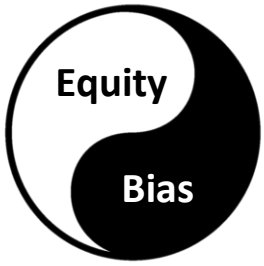
Test Bias vs Test Equity

Equitable Measurement

According to the *Standards for Educational and Psychological Testing* (AERA, APA, NCME, 2014) Psychometric TEST BIAS and EQUITY are two different ways of measuring test fairness.



- … **if a person has had limited opportunities to learn the content in a test of intelligence, *that test may be considered unfair*** (because it penalizes students for not knowing the answers) **even if the norming data do not demonstrate test bias.**
- Evidence of EQUITY is examined by test content and mean score differences



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WE CAN DO BETTER

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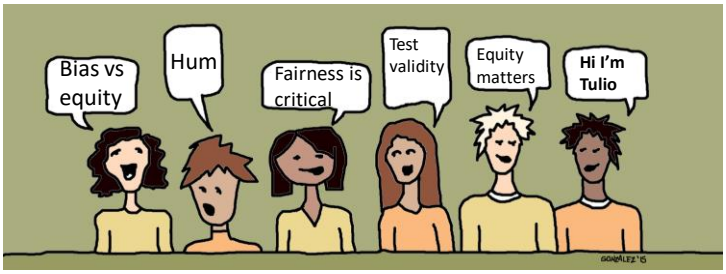
Core Group Activity

- **QUESTION:**

What is your professional responsibility regarding socially just and equitable assessment given the impact you have on a student's life?



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Ideas to Consider

- **My Professional Journey**
  - An Awakening About Traditional Intelligence Tests
- **A Theory Based on Brain Function**
  - Thinking vs Knowing and Social Justice
- **From PASS to CAS2**
  - A Different View of People
- **Research Update**
  - PASS and Equity – Measure Thinking not Knowing
  - To *g* or not to *g*
- **Administration and Interpretation Issues**
  - Test order, subtest interpretation, etc.
- **Reasons To Change**
  - Validity of PASS Theory

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Shift from Traditional To Second Generation Intelligence Tests

- Wechsler, et al
- **C**ognitive **A**ssessment **S**ystem 2nd Edition

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Intelligence as Neurocognitive Functions

- In my first working meeting with JP Das (February 11, 1984) we proposed that intelligence was better REinvented as neurocognitive processes andwe began development of the **C**ognitive **A**ssessment **S**ystem (Naglieri & Das, 1997).
- We conceptualized intelligence as Planning, Attention, Simultaneous, and Successive (PASS) neurocognitive processes based on Luria's concepts of brain function.

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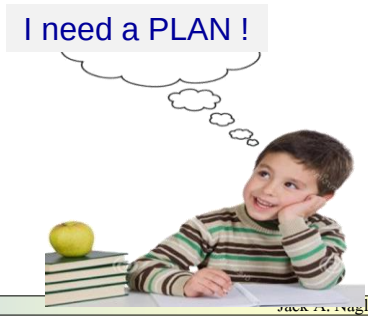
CAS2 Measures Thinking (PASS) not Knowing

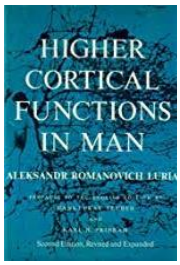
- What does the student have to ***know*** to complete a task?
  - ***This is dependent on educational opportunity (e.g., Vocabulary, Arithmetic, phonological skills, etc.)***

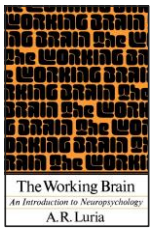
How does the student have to ***think*** to complete a task?

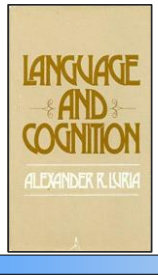
This is dependent on the brain's neurocognitive processes



PASS Neurocognitive Theory







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

PASS = 'basic psychological processes'

NOTE: Easy to understand concepts!

PASS Provides a Common Language

- Psychologists, teachers, parents, and students can all use a common language to describe abilities without the esoteric terms we have used for years – NO psychobabble

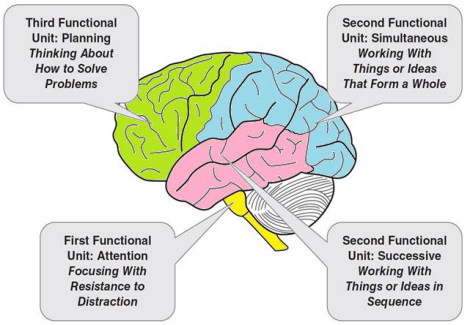


Figure 1.2 Three Functional Units and Associated Brain Structures

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

Neuropsychological Correlates of PASS

Naglieri, J. A., & Otero, T. M. Redefining Intelligence as the PASS Theory of Neurocognitive Processes.

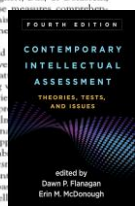
CHAPTER 6

Redefining Intelligence with the Planning, Attention, Simultaneous, and Successive Theory of Neurocognitive Processes

Practitioners and test authors have become increasingly conscious of the need for theory-based intelligence tests. Although several theories of intelligence have been attached to traditional ability tests such as the Wechsler scales (Plucker & Esping, 2014), one theory, first described by Das, Kirby, and Jarman (1979), was used explicitly to develop a new way to construct an intelligence test. In 1997, Naglieri and Das (1997a) published the Cognitive Assessment System (CAS), which was based on a neurocognitive theory called *planning, attention, simultaneous, and successive* (PASS) processing. These authors argued that a neurocognitive theory of intelligence provides the foundation necessary for test construction and is equally important for test interpretation. They also suggested that traditional IQ tests, which were based largely on the work of the U.S. military (see Naglieri, 2015), were too limited and could be improved if the constructs that were measured were related to brain functions. Naglieri and Das anticipated that the PASS neurocognitive approach would yield better diagnostic information, have relevance to instructional decision making, and be more appropriate for diverse populations (Naglieri & Otero, 2011, 2017).

the four PASS processes. PASS theory has been most recently operationalized in the Cognitive Assessment System—Second Edition (CAS2; Naglieri, Das, & Goldstein, 2014a), the CAS2: Espanol (Naglieri, Moreno, & Otero, 2017), the CAS2: Brief (Naglieri, Das, & Goldstein, 2014b), and the CAS2: Rating Scale (Naglieri, Das, & Goldstein, 2014c). We describe these [illegible] sively in Chapter 15 of thi[illegible] we focus on the PASS th[illegible] these measures are based.

The PASS theory and [illegible] neurocognitive perspective[illegible] from that of traditional [illegible] in part, subtests requiring [illegible] knowledge). These batteri[illegible] the Army mental testing pr[illegible] akum and Yerkes (1920) al[illegible] PASS theory, as operation[illegible] CAS2, has created an op[illegible] field of intelligence and ab[illegible] emphasizing (1) that a *test* be based on a *theory* of in[illegible] the test should measure ba[illegible] cesses defined by the intel[illegible] test, not the content of the [illegible]



28 Cognitive Assessment System: Redefining Intelligence From a Neuropsychological Perspective

Jack A. Naglieri and Tulio M. Otero

INTRODUCTION

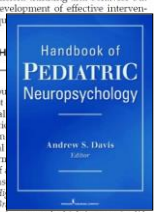
Pediatric neuropsychology has become an important field for understanding and treating developmental, psychiatric, psychosocial, and learning disorders. By addressing both brain functions and environmental factors intrinsic in complex behaviors, such as thinking, reasoning, planning, and the variety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

Such tools should not only evaluate the underlying processes necessary for efficient thinking and behavior but also provide for the development of effective interven-

tions and address the qu[illegible]

FROM NEUROPSYCH[illegible]
TO ASSESSMENT

Luria's theoretical accou[illegible] perhaps one of the most [illegible] 2008). Luria conceptual[illegible] of brain–behavior relati[illegible] orders that the clinician [illegible] the brain, the functional [illegible] syndromes and impairm[illegible] and clinical methods of [illegible] theoretical formulations[illegible] lated in works such as *He*[illegible] 1980) and *The Working Br*[illegible] as a functional mosaic, the parts of which interact in dif-



PASS Theory Based on Brain Function – Planning

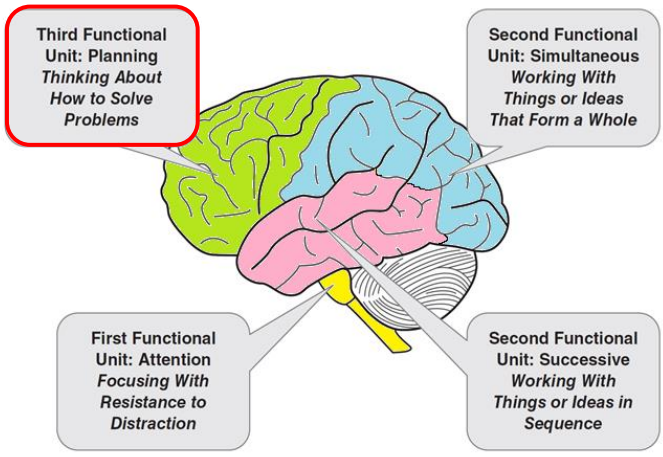


Figure 1.2 Three Functional Units and Associated Brain Structures

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

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PASS Theory: Planning

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

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

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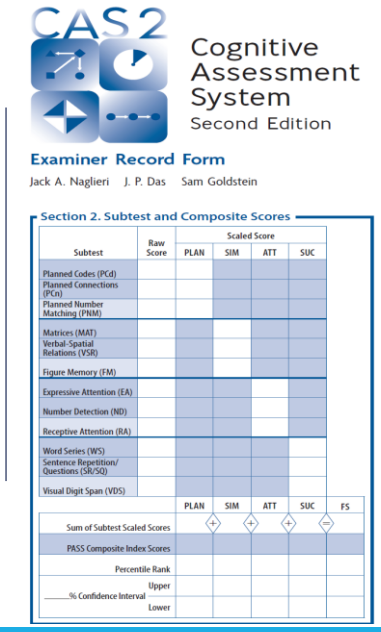
Planning Subtests

Planned Codes

Planned Connections

Planned Number Matching

5176	5761	5167	1576	5176	1567



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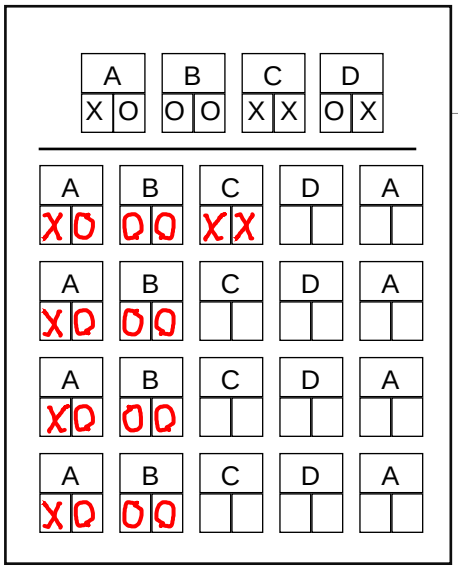
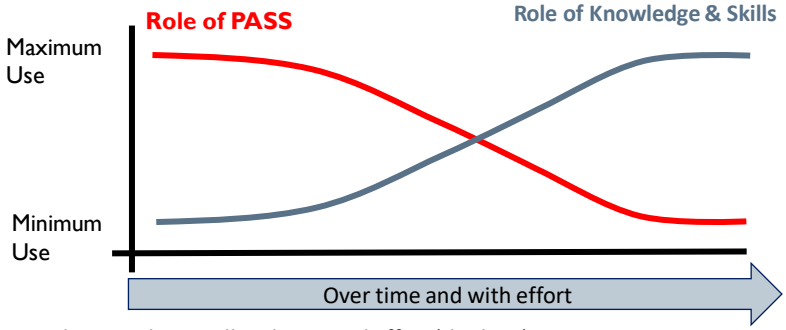


Planned Codes Page 1

- Jack Jr. at age 5
- Child fills in the codes in the empty boxes
- After being told the test requirement, examinees are told: "You can do it any way you want"

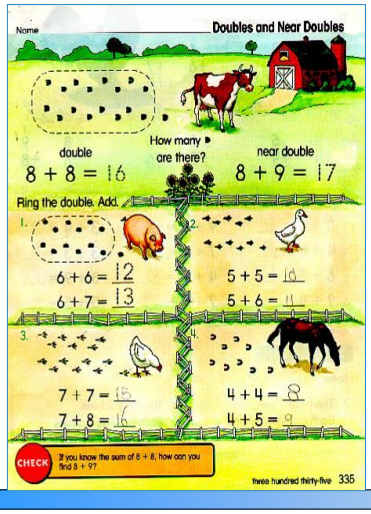
Planning Learning Curves

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



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

Math strategies stimulate thinking



This work sheet encourages the child to use strategies (plans) in math such as: "If 8 + 8 = 16, then 8 + 9 is 17"

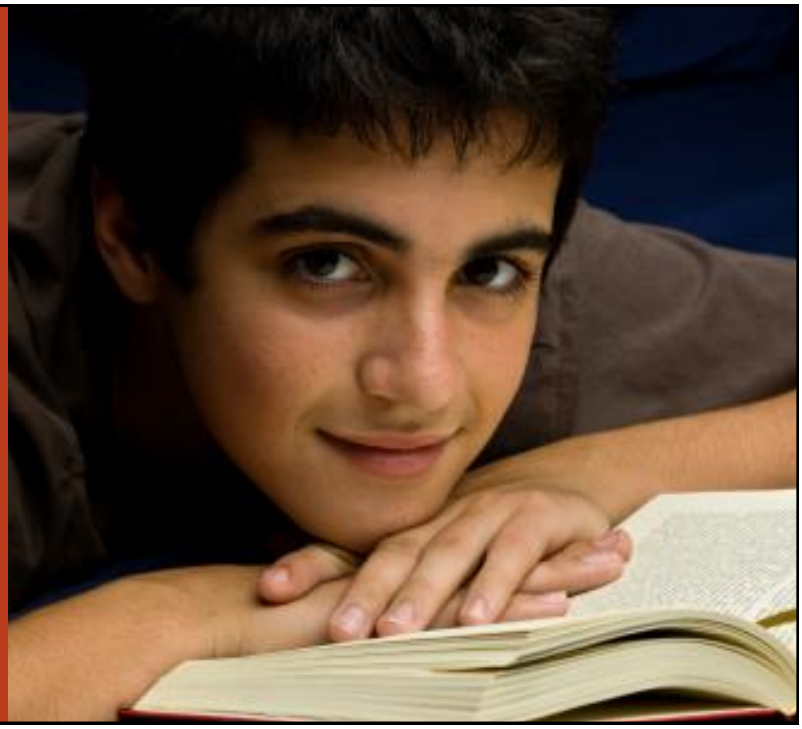
Note to the Teacher: When we teach children skills by helping them use strategies and plans for learning, we are teaching both knowledge and processing. Both are important.

Brain Break – STAND AND STRETCH

The Case of Rocky

Strengths with Specific Learning Disability and

ADHD



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The case of Rocky

- Rocky[1] went to school in a large middle-class district
- In first grade Rocky was significantly below grade benchmarks in reading, math, and writing.
  - He received group reading instruction weekly and six months of individual reading instruction but minimal progress →retained
- By the middle of his second year in first grade he still struggling
  - decoding, phonics, and sight word vocabulary; math problems, addition, 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 in reading, writing, and math

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

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Answering the Question: "Why the student struggles?"

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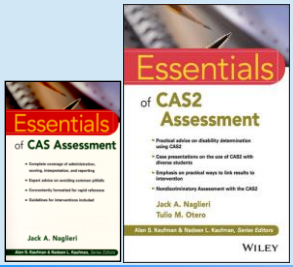
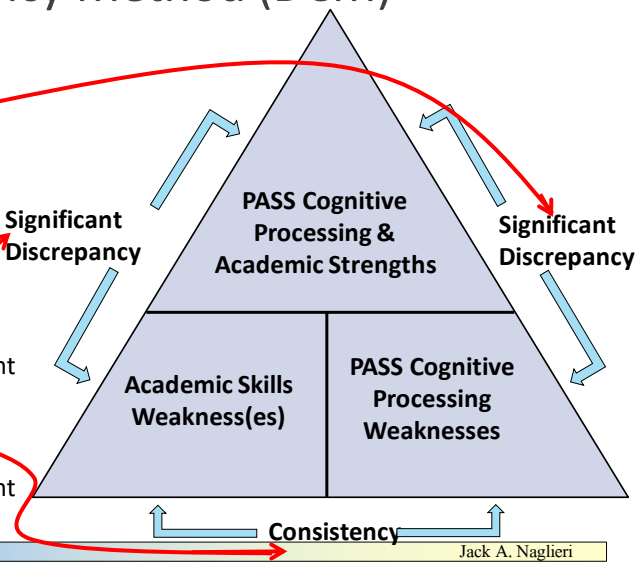
Discrepancy Consistency Method (DCM)

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



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



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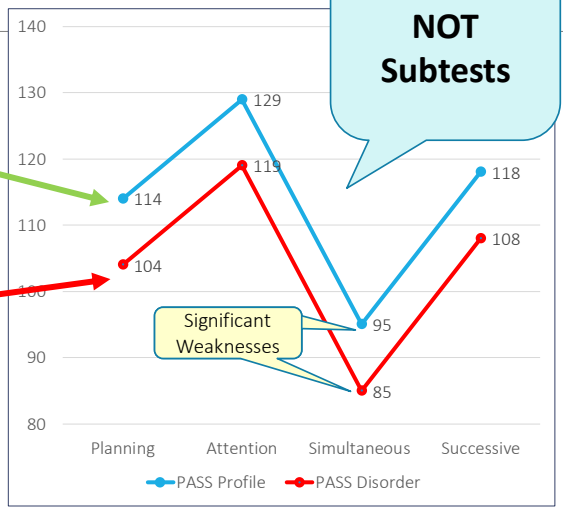
How to Determine a Disorder

- Two criteria for a disorder
  - Significant variation in relation to student's average has *instructional relevance*
  - Significant variation in relation to student's average **AND** a standard score less than 90 (< 25th %tile) *supports designation as SLD*



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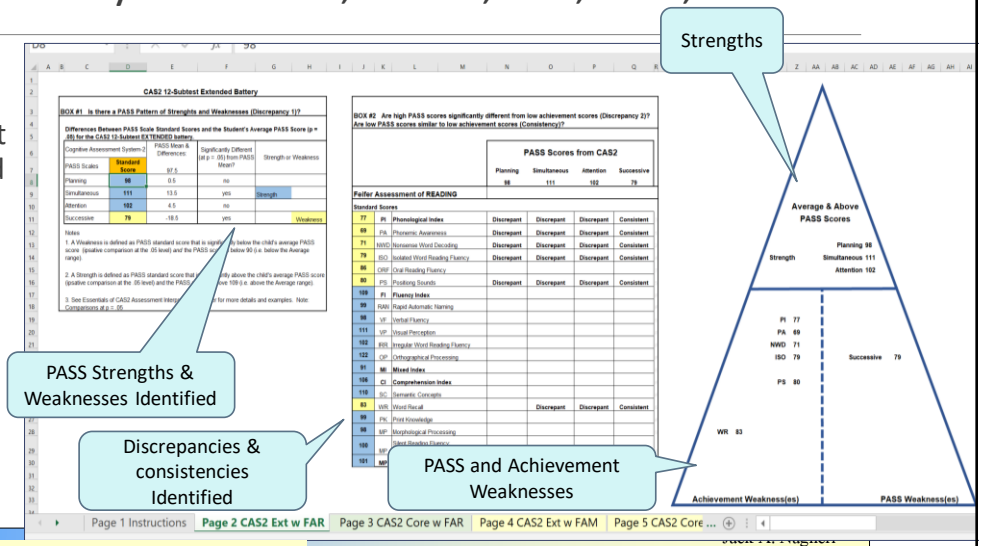
CAS2 PSW Analyzer for WJ4, KTEA3, FAR, FAM, Bateria

- Enter PASS and Achievement test standard scores and all comparisons are evaluated



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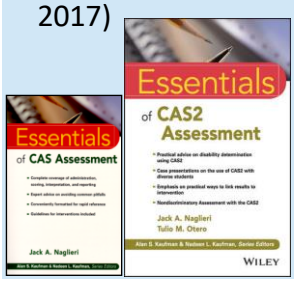
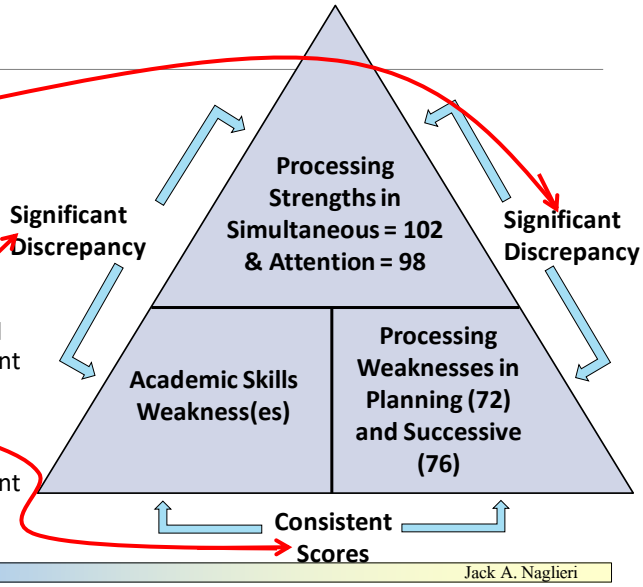
- The Discrepancy Consistency Method (DCM) was first introduced in 1999 (most recently in 2017)



- 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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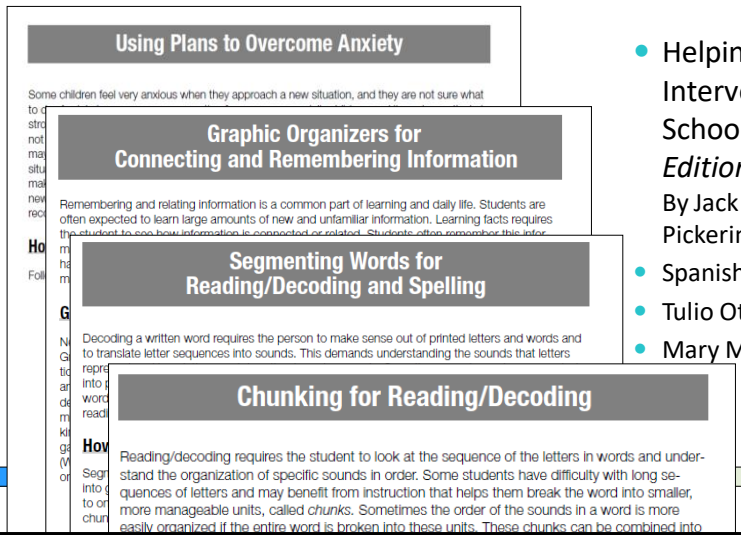
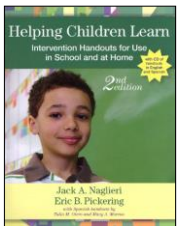
Interventions for Rocky



- 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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Hammill Institute on Disabilities

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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 based on PASS (Planning, Attention, Simultaneous, Successive) given by special education teachers to students with ADHD randomly assigned by classroom. Students in the experimental group were exposed to a brief cognitive strategy instruction for 10 days, which was designed to encourage reas the comparison group received- ievement were given at pretest. All dized achievement tests (*Woodcock- ed Achievement Test, Second Edition*, ency was also administered at 1 year up but not the comparison group on ations (0.40 and –0.14, respectively). on group. These findings suggest that nsfer to standardized tests of math nd continued advantage 1 year later

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.

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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

Experimental Group
19 worksheets with Planning Facilitation

Vs.

Control Group
19 worksheets with Normal Instruction

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Planning (Metacognitive) Strategy Instruction

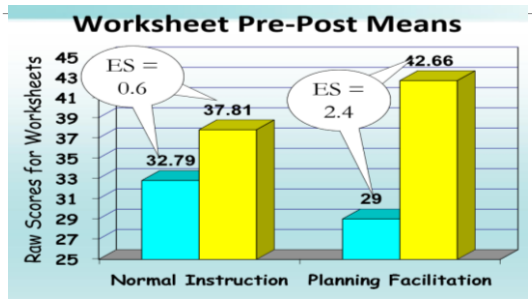
Teachers Asked

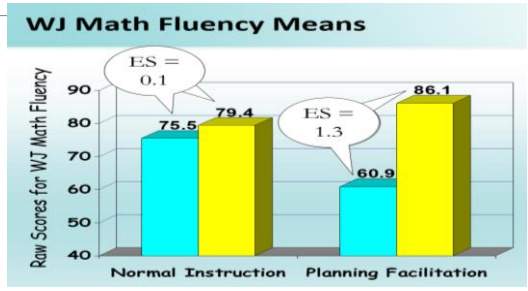
- Teachers *facilitated* discussions to help students become more self-reflective about use of strategies
- Teachers asked questions like:
  - What was your goal?
  - Where did you start the worksheet?
  - What strategies did you use?
  - How did the strategy help you reach your goal?
  - What will you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

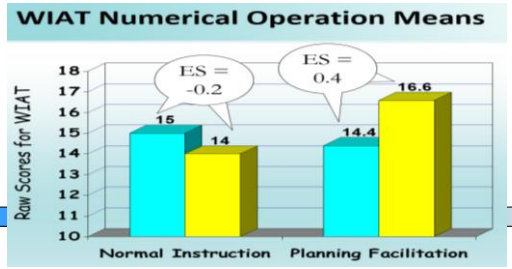
Students Responded

- "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 draw lines to keep the columns straight"
- "I did the ones that took the least time"

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



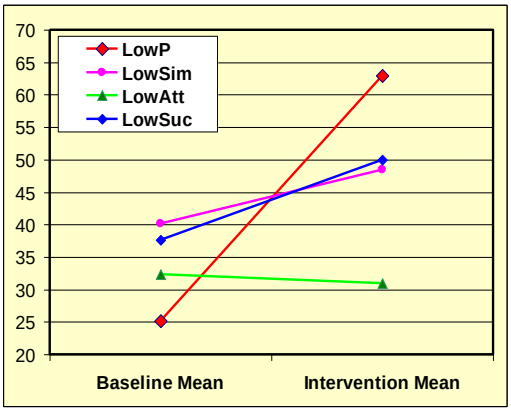




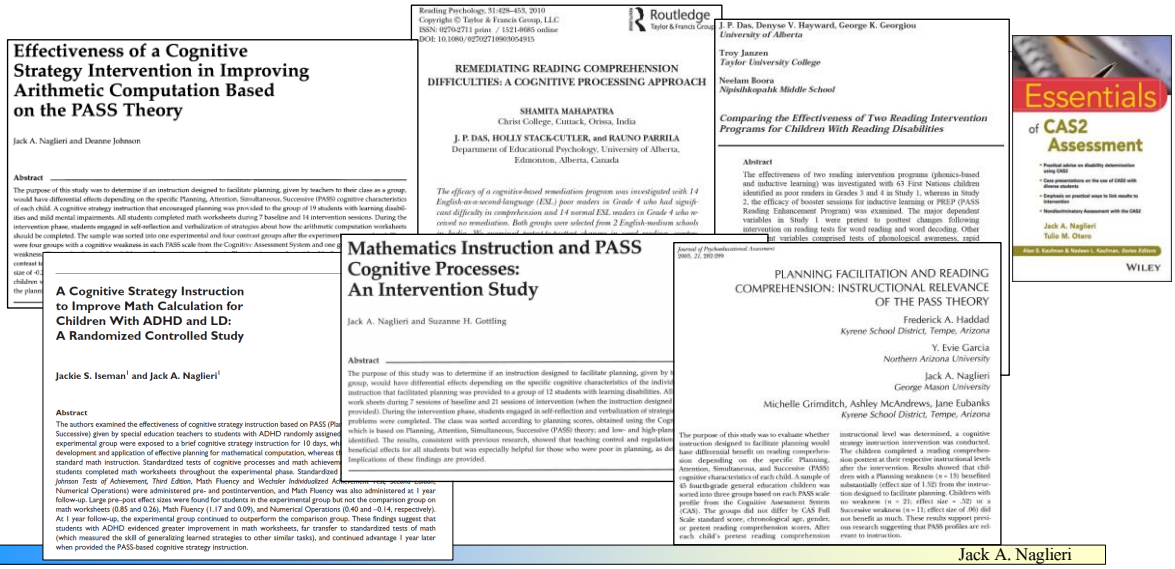
At 1-year follow-up, 27 of the students were retested on the WJ-III ACH Math Fluency subtest as part of the school's typical yearly evaluation of students. This group included 14 students from the comparison group and 13 students from the experimental group. The results indicated that the improvement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

Pre-Post Changes for the Students with LD and ADHD

- The students with a weakness in Planning, Simultaneous or Successive processing scales benefited from the Planning Facilitation method
- Importantly, the students with a weakness in Planning improved the most
- This has been the case in all the studies of Planning Facilitation
- COGNITION PREDICTS RESPONSE TO INTERVENTION



Summary of PASS Intervention Research in Essentials of CAS2



Summary of Planning Studies

There have been 7 studies involving the Planning Facilitation methodology described in Helping Children Learn book and in every case students with low Planning scores on the CAS showed substantial improvement

Average Pre Post Percent Change in Math Accuracy for Students Low in Planning	% Change
Cormier, et al., (1990)	29
Kar, et al., (1992)	84
Naglieri & Gottling (1995)	178
Naglieri & Gottling (1997)	80
Naglieri & Johnson (1999)	142
Hald (2000)	29
Iseman & Naglieri (2011)	152
Average	**99**

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Planning – a basic psychological process

- Because Planning is a neurocognitive process related to the front part of the brain it is by definition a way to define a 'basic psychological process' included in the description of a specific learning disability.

"(30) SPECIFIC LEARNING DISABILITY.—
"(A) IN GENERAL.—The term 'specific learning disability' means a disorder in 1 or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations.
"(B) DISORDERS INCLUDED.—Such term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia.
"(C) DISORDERS NOT INCLUDED.—Such term does not include a learning problem that is primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage.

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PASS Theory Based on Brain Function -– Attention

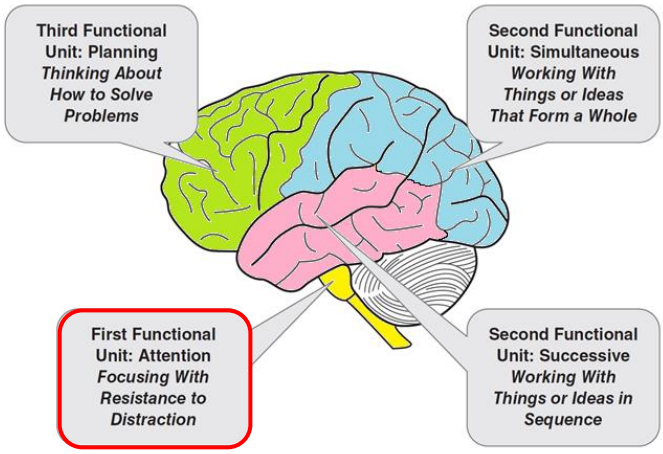

Figure 1.2 Three Functional Units and Associated Brain Structures

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

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Attention Subtests

Expressive Attention

Number Detection

Find the numbers that look like this: 1 2						
1	5	1	4	2	2	5

Receptive Attention

N n	T r	b t
TR	n b	A a

CAS2 Cognitive Assessment System Second Edition

Examiner Record Form

Jack A. Naglieri J. P. Das Sam Goldstein

Section 2. Subtest and Composite Scores

Subtest	Raw Score	Scaled Score PLAN	SIM	ATT	SUC
Planned Codes (PCd)					
Planned Connections (PCn)					
Planned Number Matching (PNM)					
Matrices (MAT)					
Verbal-Spatial Relations (VSR)					
Figure Memory (FM)					
Expressive Attention (EA)					
Number Detection (ND)					
Receptive Attention (RA)					
Word Series (WS)					
Sentence Repetition/ Questions (SR/SQ)					
Visual Digit Span (VDS)					

	PLAN	SIM	ATT	SUC	FS
Sum of Subtest Scaled Scores		+	+	+	=
PASS Composite Index Scores					
Percentile Rank					
95% Confidence Interval Upper					
95% Confidence Interval Lower					

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PASS Theory: Attention

- Attention is a basic psychological process we use to
  - selectively attend to some stimuli and ignores others
  - Focus our cognitive activity
  - Selective attention
  - Resistance to distraction
  - Listening, as opposed to hearing

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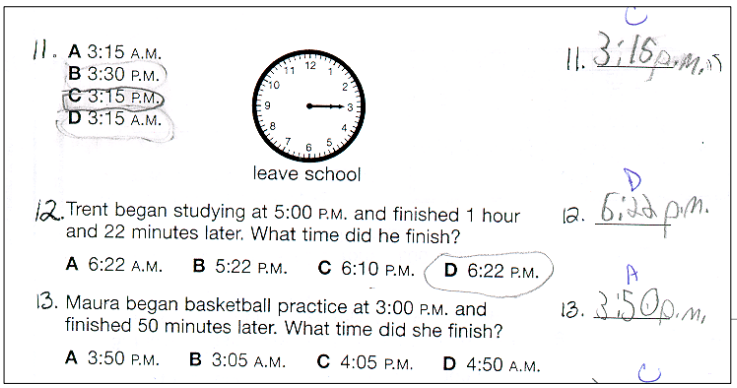


Attention

READING COMPREHENSION IS DIFFICULT BECAUSE OF THE SIMILARITY OF THE OPTIONS

When a Student Understands …

Figure 3.4. Frankie's self-portrait.

Frankie's Weaknesses in Attention and Successive Processing

Frankie had trouble in school from the beginning. Although he was friendly and outwardly pleasant, his teachers sensed in him an undercurrent of anxiety and fear that he was not able to perform as well as his peers. Frankie was popular
ers because he was very able to conver
adult level, even though he sometimes
the conversation. His teachers repor
looked as if he was not following what
seemed to be "floating, out there some
"it is like he loses focus for a while, r
ears, but he comes back if you redirect
fused when learning, for example, his 2

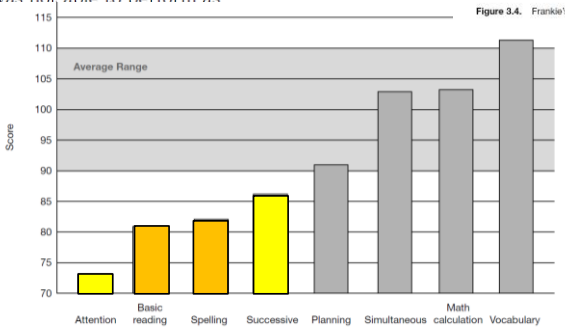


Figure 3.5. Frankie's PASS and selected achievement scores.

Jose: Age 10, 5th Grade, Bilingual Student
by Tulio M. Otero, Ph.D.

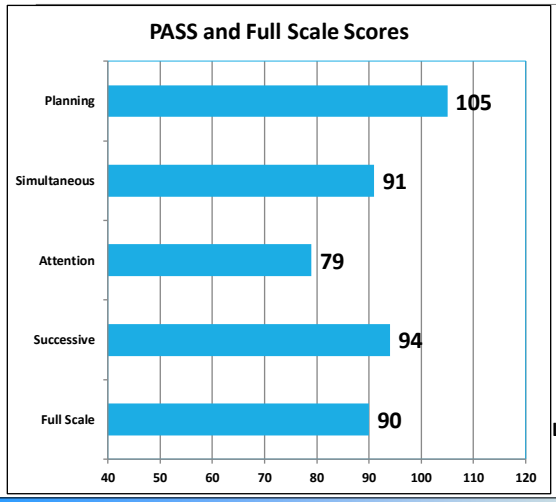
Jose reading problems and the teacher these concerns:

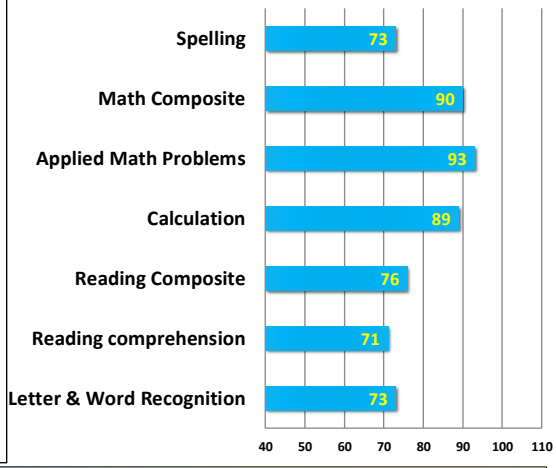
phonemic awareness, reading fluency, reading comprehension math problem-solving, spelling, written expression

Jose also receives ELL services and his current ACCESS scores are as follows: Listening 5.8, Speaking 1.9, Reading 2.8, Writing 3.5.

2018 WISC4 Spanish : VCI 55, PRI 92, WM 86, PS 91

CAS2 and KTEA-III Scores (January 2020)





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Jose was given this simple intervention

Remember to check how well you are attending. If you are having a problem, use a plan and look at this (taped to his desk).

From: Naglieri, J. A., & Pickering, E. B. (2010). *Helping Children Learn: Intervention Handouts for Use at School and Home (Second Edition).* Baltimore, MD: Brookes Publishing.

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Two weeks later!

- Teacher reported that José has increased his reading accuracy by at least 80%.
- He read 16 words correctly out of a list of 20.
- He has done this over the last 3. sessions.

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Attention – a basic psychological process

- Because Attention is a neurocognitive process related to the brain it is by definition a way to define a 'basic psychological process' included in the description of a specific learning disability.

"(30) SPECIFIC LEARNING DISABILITY.—

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PASS Theory Based on Brain Function - Simultaneous Processing

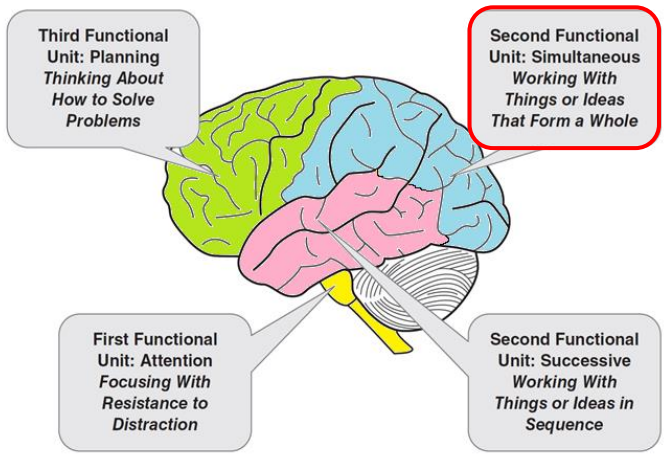

Figure 1.2 Three Functional Units and Associated Brain Structures

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

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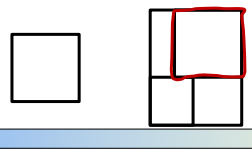
Simultaneous Subtests

Matrices

Verbal Spatial Relations

Figure Memory



CAS2 Cognitive Assessment System Second Edition

Examiner Record Form

Jack A. Naglieri J. P. Das Sam Goldstein

Section 2. Subtest and Composite Scores

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Sentence Repetition/ Questions (SR/SQ)					
Visual Digit Span (VDS)					

	PLAN	SIM	ATT	SUC	FS
Sum of Subtest Scaled Scores		+	+	+	=
PASS Composite Index Scores					
Percentile Rank					
Upper					
% Confidence Interval					
Lower					

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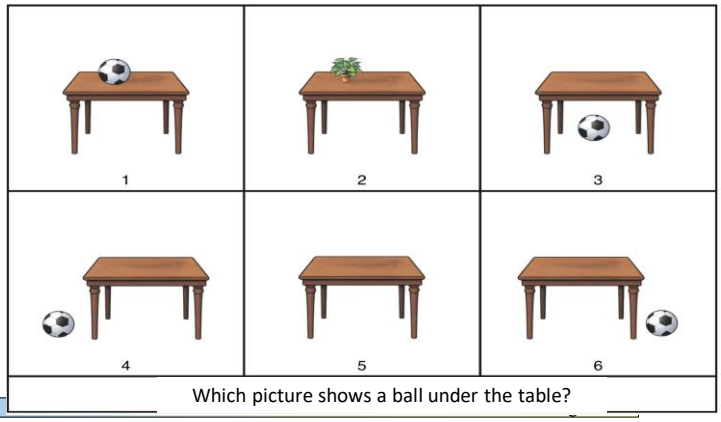
PASS Theory: Simultaneous

- **Simultaneous** processing is used to integrate stimuli into groups
  - Each piece must be related to the other
  - Stimuli are seen as a whole
- Academics:
  - Reading comprehension
  - geometry
  - math word problems
  - whole language
  - verbal concepts



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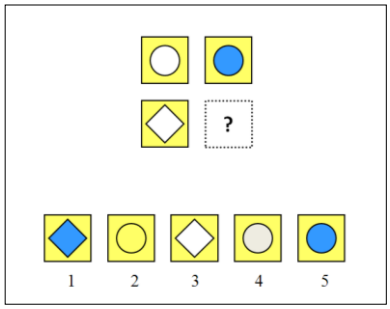
Thinking vs Knowing

Solving these analogies demands the same kind of thinking



Girl is woman as boy is to ____?

3 is to 6 as 4 is to _____?

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

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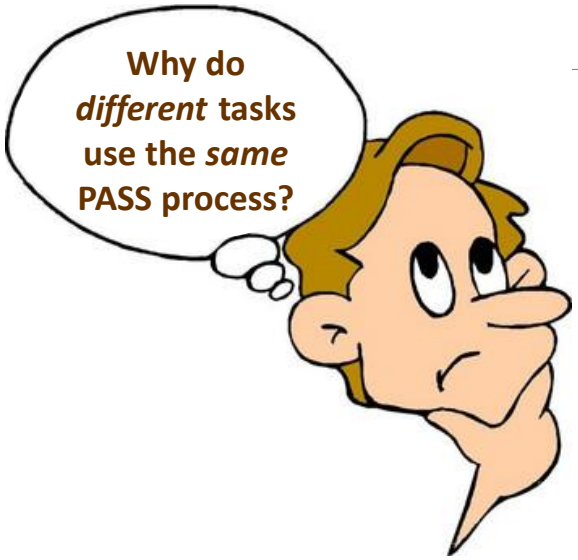


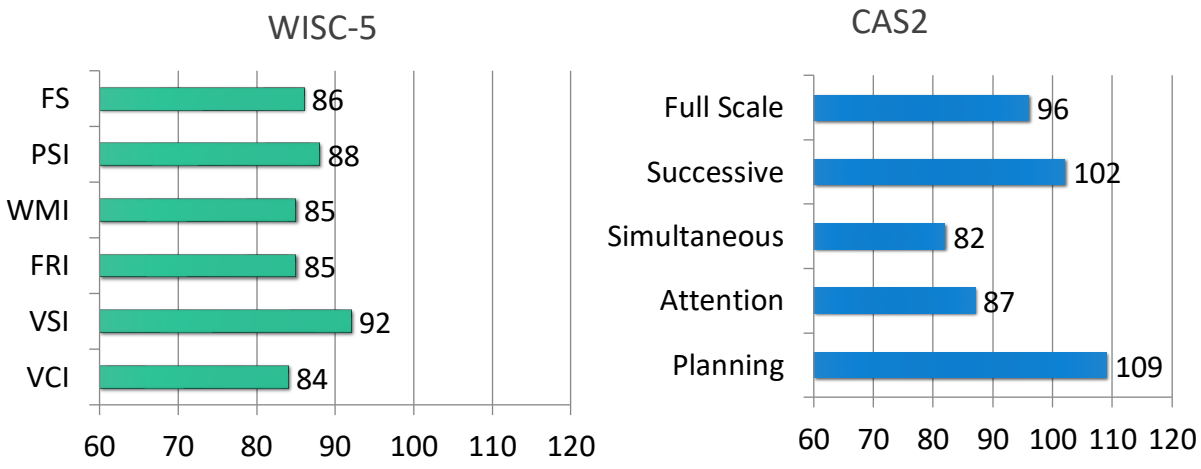
And Consider this…

- Even though the tasks were different in content (shapes, words, numbers & musical notations) and modality (auditory and visual), they required **Simultaneous** processing!

Case of Alexandra (Tulio Otero)

- Alex is 8-years-old in the 3rd grade.
- Her home language is primarily Spanish, although she speaks English with siblings
- Alex has difficulty when encountering most reading and written language tasks.
- Alex was previously evaluated for special education
  - The test results indicated her overall cognitive abilities were in the Low Average range (WISC5).
  - Significant difficulty with reading fluency and automatic word recognition skills
  - Has strong decoding and phonological skills.
  - Spanish literacy achievement results in word reading and spelling fell within the Average range.
  - Her struggles were ascribed to attention problems stemming from ADHD and not a specific learning disability.
- She continues to have significant reading and writing difficulties, limited self-confidence, and struggles to complete her work.

Case of Alexandra



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Case of Alexandra - SLD

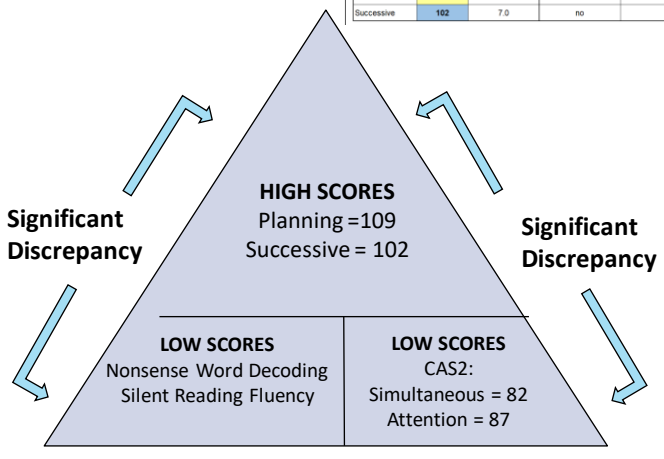
Composite/Subtest	Standard Scores	Percentile Rank
Reading Composite	105	63
Letter & Word Recognition	111	77
Reading Comprehension	99	47
Nonsense Word Decoding	80	9
Silent Reading Fluency	82	12
Math Composite	90	25
Math Concepts & Applications	88	21
Math Computation	95	37
Spelling	98	45

CAS2 8-Subtest CORE 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 CORE battery.

Cognitive Assessment System-2		PASS Mean & Differences:		
PASS Scales	Standard Score	95.0	Significantly Different (at p = .05) from PASS Mean?	Strength or Weakness
Planning	109	14.0	yes	
Simultaneous	82	-13.0	yes	Weakness
Attention	87	-8.0	no	
Successive	102	7.0	no	



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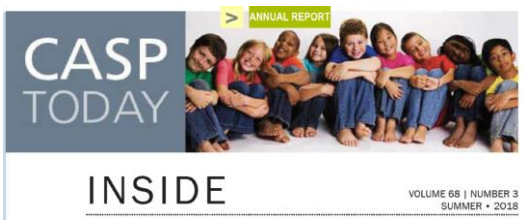
Discrepancy Consistency Method

- Case of Peter by Feifer & Naglieri
- 4th grade and performing below grade level in both reading and mathematics
- despite numerous interventions and classroom accommodations.
- He struggles to remember the sequence of steps when doing math

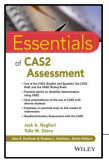


- He is inconsistent with basic math facts, struggles reading long passages and has difficulty decoding and spelling
- Peter has an outstanding memory for details of any type of learning experience

Two Types of Dyslexia (Feifer & Naglieri)

- (1) the phonological assembly of words or (2) the orthographic representation of words
- *Phonological Dyslexia:* students struggle sequencing individual sounds to read the printed word which demands **Successive Processing**.
  - reading pseudowords are especially difficult with the phonological assembly of words which has a high demand on the sequencing of letter and sounds.
- *Surface Dyslexia:* students have difficulty taking in the entire printed word form as a whole which requires **Simultaneous processing.**
  - These readers have difficulty on phonologically irregular words *(I.e. debt, yacht, onion, etc.)* because these words cannot be decoded in a sequential manner, and must be recognized as an orthographical unit.

Case of Nelson
Surface Dyslexia



Reason for Referral:
Nelson is a 9-year-old fourth-grade student who was referred for a comprehensive psychological evaluation because of concerns regarding his overall reading skills and difficulty completing most daily tasks in a timely manner.

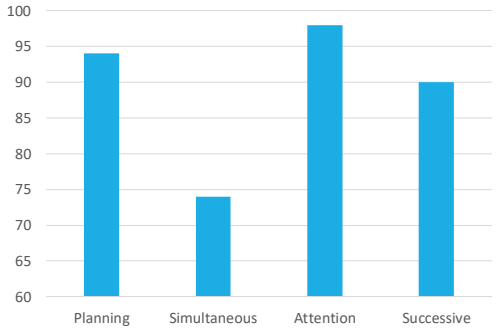


Table 5.3 Nelson's Scores on the KTEA-III Reading Subtests

Reading	Age Norms	Percentile	Range
Letter Word Recognition: The student reads isolated letters and words of gradually increasing difficulty.	81 ± 5	10 53	Below average
Nonsense Word Decoding: The student applies phonics and decoding skills to made-up words of increasing difficulty.	90 ± 5	25	Average
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

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

Math	Age Norms	Percentile	Range
Math Concepts and Applications: The student responds orally to applied math problems involving number concepts, time, money, measurement, and data analysis.	96 ± 6	39	Average
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

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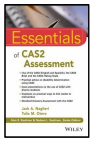
Case of Nelson
Surface Dyslexia



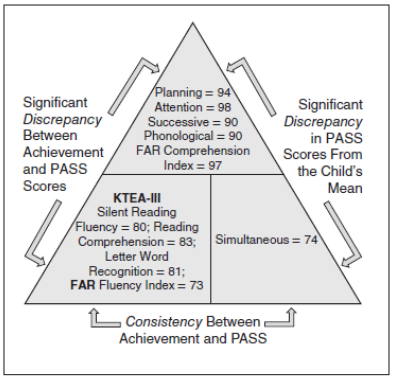


Figure 5.5 Nelson's Discrepancy/Consistency Method of SLD Result

Recommendations for School

1. Nelson would benefit from a targeted reading fluency intervention in order to increase text automatic recognition and fluency (e.g., Read Naturally, Great Leaps, RAVE-O, etc.).
2. Nelson's orthographic processing skills were somewhat weak. Color-coding letter-various syllable and sound subtypes, particularly vowel diphthongs in phonetically irregular words, may be very helpful (e.g., ***au**tion, danger**ous**,* etc.).
3. Nelson may benefit from targeted writing activities to help reinforce letter and word recognition skills. Specific activities such as identifying which of three sight words is spelled correctly (e.g., *wuz, whas, or was*) may help to develop automaticity recognizing vowel patterns in words.
4. Nelson should benefit from using graphic organizers, story maps, and other prewriting activities to assist him when organizing his thoughts when writing. In addition, he should have access to a word bank of words to assist him with spelling as well.
5. Nelson might benefit from having access to a Franklin Word Speller and other technology devices and to assist with his overall spelling skills.
6. In order to improve Simultaneous processing and facilitate text-visualization skills, have Nelson practice spelling words with white space in between each syllable in the word. Next, frame each letter in a box similar to the letter size. For example, the word *fascinate* would be written as *fas cin ate*. The visual space draws attention to the different word parts and the boxes provide organizational cues. A similar method

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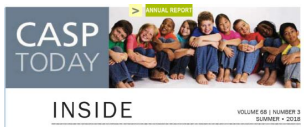

Table 1. Correspondance of Cognitive Assessment System - Second Edition Scales with Commonly Used Descriptions of Processing.

CAS2 Scales	Attention	Visual Processing	Auditory Processing	Phonolocial Processing	Sensory-Motor Skills	Association	Conceptualization	Expression
Primary Scales								
Planning		✓			✓		✓	✓
Attention	✓	✓						
Simultaneous		✓					✓	
Successive			✓	✓	✓	✓		
Supplemental Scales								
Executive Function			✓					
Executive Function with Working Memory			✓	✓				
Working Memory			✓	✓				
Verbal Content						✓		
Nonverbal Content							✓	
Speed/Fluency					✓			
Visual-Auditory Comparison		✓	✓					

Note: Association, conceptualization and expression are described as cognitive abilities.

PASS and California Categories

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Brain Break – STAND AND STRETCH

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PASS Theory Based on Brain Function – Successive Processing

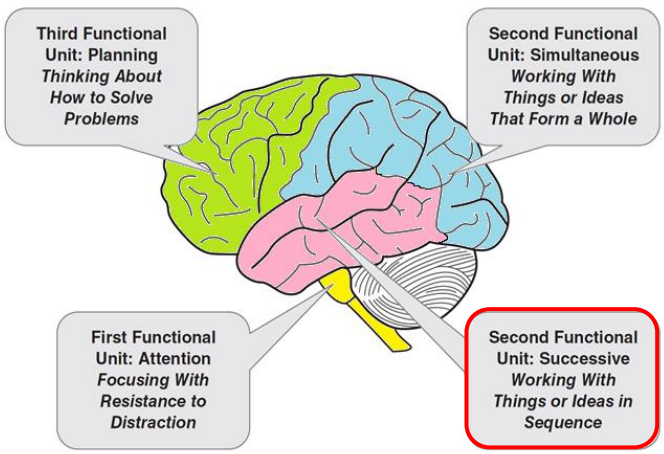

Figure 1.2 Three Functional Units and Associated Brain Structures

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

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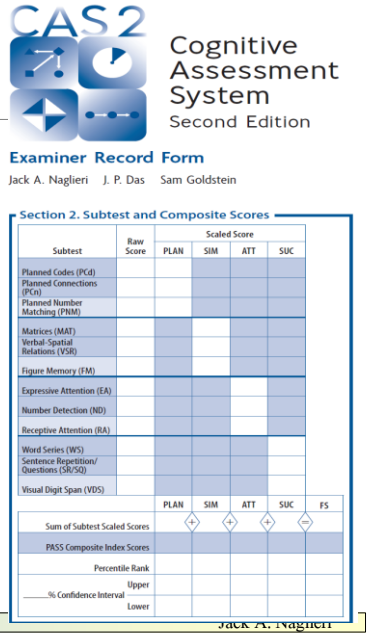
Successive Subtests

Word Series

Sentence Repetition or Sentence Questions

Visual Digit Span



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PASS Theory: Successive

- **Successive** processing is a basic psychological process we use to manage stimuli in a specific serial order
  - Stimuli form a chain-like progression
  - Recall a series of words
  - Decoding words
  - Letter-sound correspondence
  - Phonological tasks
  - Understanding the syntax of sentences
  - Comprehension of written instructions

Recall of Numbers in Order
Successive Processing

4 3 8 6 1

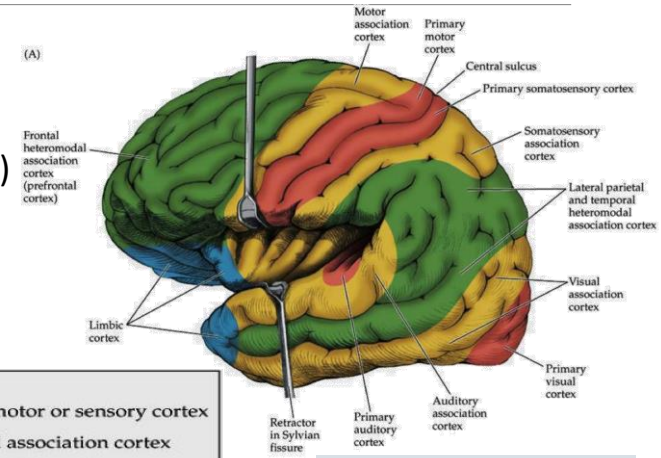
92

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?***

Heteromodal Association Cortex (Goldberg, 2006)

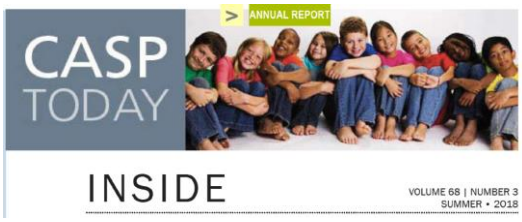
- Our brains ***merge stimuli*** coming in from the senses (unimodal association cortex) into one stream of information in the **Heteromodal association cortex**
- (green areas)



https://goo.gl/images/cyphg7

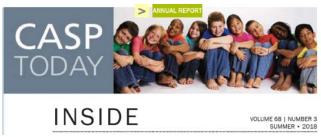
Discrepancy Consistency Method

- Case of Peter by Feifer & Naglieri
- 4th grade and performing below grade level in both reading and mathematics
- despite numerous interventions and classroom accommodations.
- He struggles to remember the sequence of steps when doing math



- He is inconsistent with basic math facts, struggles reading long passages and has difficulty decoding and spelling
- Peter has an outstanding memory for details of any type of learning experience

Discrepancy Consistency Method



- CAS2 FAR and FAM - *FREE* Analyzers on jacknaglieri.com

CAS2 8-Subtest CORE 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 CORE battery.

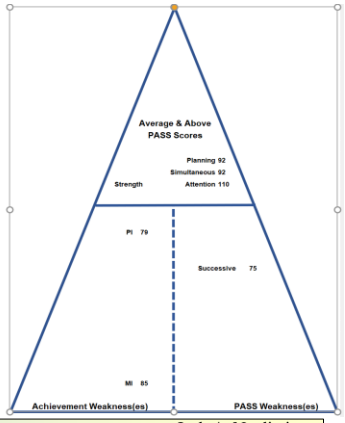
Cognitive Assessment System-2		PASS Mean & Differences:	Significantly Different (at p = .05) from PASS Mean?	Strength or Weakness
PASS Scales	**Standard Score**	92.3		
Planning	**92**	-0.3	no	
Simultaneous	**92**	-0.3	no	
Attention	**110**	17.8	yes	Strength
Successive	**75**	-17.3	yes	Weakness

Notes

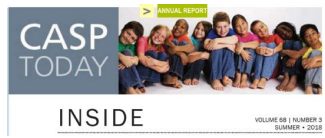
1. A Weakness is defined as PASS standard score that is significantly below the child's average PASS score (ipsative comparison at the .05 level) *and* the PASS score is below 90 (i.e. below the Average range).
2. A Strength is defined as PASS standard score that is significantly above the child's average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

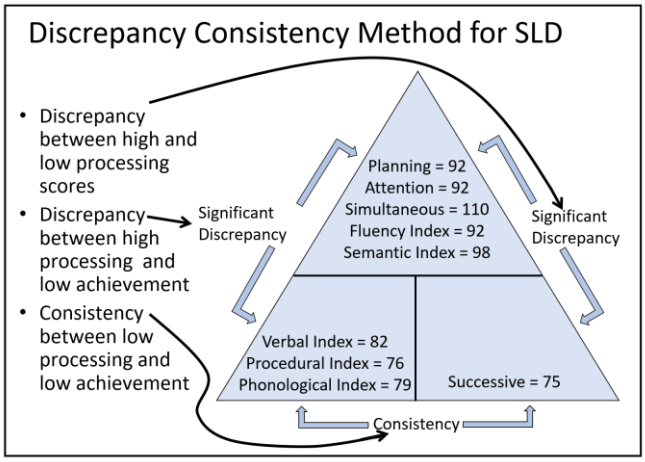
BOX #2 Are high PASS scores significantly different from low achievement scores (Discrepancy 2)? Are low PASS scores similar to low achievement scores (Consistency)?

			PASS Scores from CAS2			
			Planning	Simultaneous	Attention	Successive
			92	92	110	75
Feifer Assessment of READING						
Standard Scores						
79	PI	**Phonological Index**	Discrepant	Discrepant	Discrepant	Consistent
	PA	Phonemic Awareness				
	NWD	Nonsense Word Decoding				
	ISO	Isolated Word Reading Fluency				
	ORF	Oral Reading Fluency				
	PS	Positional Sounds				
92	FI	**Fluency Index**				
	RAN	Rapid Automatic Naming				
	VF	Verbal Fluency				
	VP	Visual Perception				
	IRR	Irregular Word Reading Fluency				
	OP	Orthographical Processing				
85	MI	**Mixed Index**			Discrepant	Consistent
90	CI	**Comprehension Index**				
	SC	Semantic Concepts				
	WR	Word Recall				
	PK	Print Knowledge				
	MP	Morphological Processing				
	SRF MP	Silent Reading Fluency: Comprehension				
84	MP	**Total Index**			Discrepant	Consistent



Discrepancy Consistency Method





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
			92	92	110	75
Feifer Assessment of MATH						
Standard Scores						
76	PI	Procedural Index	Discrepant	Discrepant	Discrepant	Consistent
82	VI	Verbal Index			Discrepant	Consistent
98	SI	Semantic Index				
86	TI	FAM Total Index				

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
			92	92	110	75
Feifer Assessment of READING						
Standard Scores						
79	PI	Phonological Index	Discrepant	Discrepant	Discrepant	Consistent
92	FI	Fluency Index				
85	MI	Mixed Index			Discrepant	Consistent
90	CI	Comprehension Index				
84	MP	Total Index			Discrepant	Consistent

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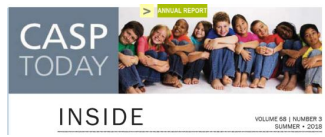
Discrepancy Consistency Method



- Paul

Table 1. Correspondance of Cognitive Assessment System - Second Edition Scales with Commonly Used Descriptions of Processing.

CAS2 Scales	Attention	Visual Processing	Auditory Processing	Phonolocial Processing	Sensory-Motor Skills	Association	Conceptualization	Expression
Primary Scales								
Planning		✓			✓		✓	✓
Attention	✓	✓						
Simultaneous		✓					✓	
Successive			✓	✓	✓	✓		
Supplemental Scales								
Executive Function			✓					
Executive Function with Working Memory			✓	✓				
Working Memory			✓	✓				
Verbal Content						✓		
Nonverbal Content							✓	
Speed/Fluency					✓			
Visual-Auditory Comparison		✓	✓					

Note: Association, conceptualization and expression are described as cognitive abilities.

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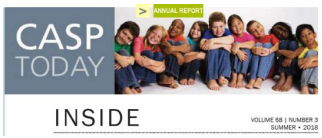
Discrepancy Consistency Method



- Paul

Table 2. Correspondance of Feifer Assessment of Reading (FAR) Scores with Reading Skills.

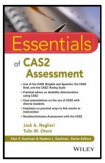
FAR	Reading Comprehension	Basic Reading Skill	Reading Fluency Skills	Phonological Processing	Written Expression	Oral Expression	Listening Comprehension
Phonological Index		✓	✓				
Phonemic Awareness				✓			
Nonsense Word Decoding				✓			
Isolated Word Reading Fluency		✓	✓				
Oral Reading Fluency		✓	✓				
Positiong Sounds				✓			
Fluency Index		✓	✓				
Rapid Automatic Naming			✓				
Verbal Fluency						✓	
Visual Perception							
Irregular Word Reading Fluency		✓	✓				
Orthographical Processing							
Mixed Index		✓	✓				
Comprehension Index	✓		✓				
Semantic Concepts							
Word Recall							✓
Print Knowledge		✓					
Morphological Processing							
Silent Reading Fluency: Comprehension	✓		✓				

Table 3. Correspondance of Feifer Assessment of Math (FAR) Scores with Math and Reading Skills.

FAM	Listening Comprehension	Math Calculation	Math Problem Solving
Procedual Index		✓	✓
Forward Number Count	✓		✓
Backward Number Count	✓		✓
Numeric Capacity			
Sequences		✓	
Object Counting	✓		✓
Verbal Index	✓		✓
Rapid Number Naming			
Addition Fluency	✓		✓
Subtraction Fluency	✓		✓
Multiplication Fluency	✓		✓
Division Fluency	✓		✓
Linguistic Math Concepts	✓		✓
Semantic Index		✓	✓
Spatial Memory			
Equation Building	✓		✓
Perceptual Estimation			
Number Comparison		✓	
Addition Knowledge		✓	
Subtraction Knowledge		✓	
Multiplication Knowledge		✓	
Division Knowledge		✓	

Case of Paul: *Phonological Dyslexia* (Feifer)

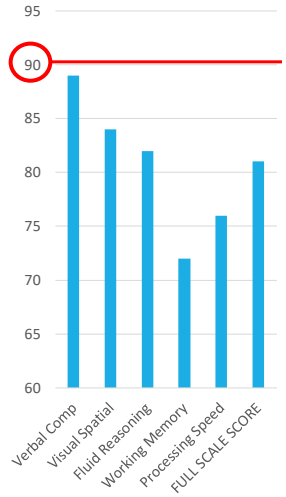
- **Case of Paul -**A 9-year-old in 4th grade
  - Problems in reading and math
  - Can't remember the sequence of steps when doing math and math facts
  - Good memory for details
  - Can't sound out words
  - Poor spelling
  - Poor reading comprehension



Paul – age 9 years

Presenting Concerns: Reading, Math Word Problems, Anxiety

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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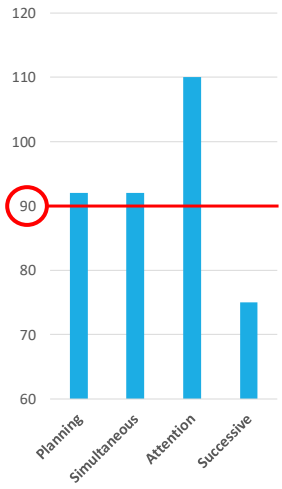
Paul – age 9 years

CAS-2	STANDARD SCORE	Classification
Planning	92	Average
Simultaneous	92	Average
Attention	110	Average
Successive	75	Very Low

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

Ages 8-18 YEARS

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



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Change Demands Courage to Think Differently

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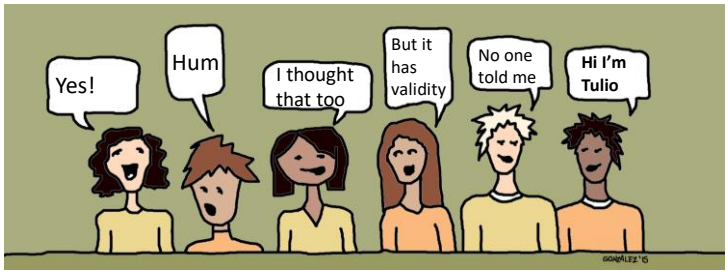
Core Group Activity

- **QUESTION: Questions about PASS Theory?**



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PASS → CAS2

- **My Professional Journey**
  - An Awakening About Traditional Intelligence Tests
- **A Theory Based on Brain Function**
  - Thinking vs Knowing and Social Justice
- **From PASS to CAS2**
  - A Different View of People
- **Research Update**
  - PASS and Equity – Measure Thinking not Knowing
  - To *g* or not to *g*
- **Administration and Interpretation Issues**
  - Test order, subtest interpretation, etc.
- **Reasons To Change**
  - Validity of PASS Theory

PASS Comprehensive System

(Naglieri, Das, & Goldstein, 2014)

Ways to Measure PASS

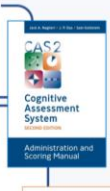
CAS2 Core & Extended English & Spanish for comprehensive Assessment
CAS2 Brief for re-evaluations, instructional planning, gifted screening
CAS2 Rating Scale for teacher ratings

CAS2 Rating Scale
(4 subtests)
Total Score
Planning
Simultaneous
Attention
Successive

CAS2 Brief
(4 subtests
20 minutes)
Total Score
Planning
Simultaneous
Attention
Successive

CAS2 Core
(8 subtests
40 minutes)
Full Scale
Planning
Simultaneous
Attention
Successive

CAS2 Extended
(12 subtests
60 minutes)
Full Scale
Planning
Simultaneous
Attention
Successive
Supplemental Scales
Executive Function
Working Memory
Verbal / Nonverbal
Visual / Auditory
Speed / Fluency



CAS2 Digital (English & Spanish) coming in 2022

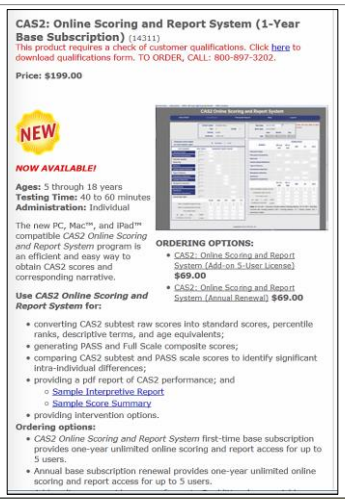
CAS2 for (Ages 5-18 yrs.)

NEW! CAS2 Digital (English and Spanish) coming in 2022 with integrated scoring and narrative report

CAS2 Online Score & Report

http://www.proedinc.com/customer/ProductView.aspx?ID=7277

- Enter data at the subtest level or enter subtest raw scores
- Online program converts raw scores to standard scores, percentiles, etc. for all scales.
- A narrative report with graphs and scores is provided



CAS2: Online Scoring and Report System (1-Year Base Subscription) (14311)
This product requires a check of customer qualifications. Click here to download qualifications form. TO ORDER, CALL: 800-897-3202.

Price: $199.00

NEW

NOW AVAILABLE!

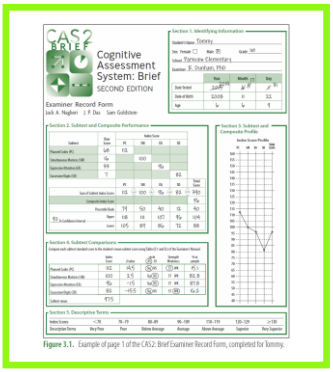
Ages: 5 through 18 years
Testing Time: 40 to 60 minutes
Administration: Individual

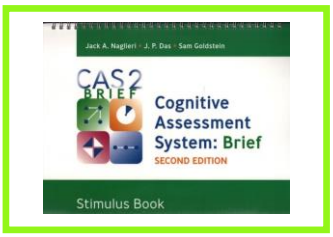
The new PC, Mac™, and iPad™ compatible *CAS2 Online Scoring and Report System* program is an efficient and easy way to obtain CAS2 scores and corresponding narrative.

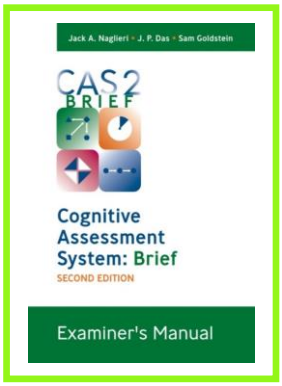
ORDERING OPTIONS:
- CAS2: Online Scoring and Report System (Add-on 5-User License) **$69.00**
- CAS2: Online Scoring and Report System (Annual Renewal) **$69.00**

Use *CAS2 Online Scoring and Report System* for:
- converting CAS2 subtest raw scores into standard scores, percentile ranks, descriptive terms, and age equivalents;
- generating PASS and Full Scale composite scores;
- comparing CAS2 subtest and PASS scale scores to identify significant intra-individual differences;
- providing a pdf report of CAS2 performance; and
  - Sample Interpretive Report
  - Sample Score Summary
- providing intervention options.

Ordering options:
- *CAS2 Online Scoring and Report System* first-time base subscription provides one-year unlimited online scoring and report access for up to 5 users.
- Annual base subscription renewal provides one-year unlimited online scoring and report access for up to 5 users.







CAS2: Brief

- Yields PASS and Total standard scores (Mn 100, SD 15)
- Directions for administration are in the Record Form
- For Re-evaluations and Screening
- All items are different from CAS2
  - Planned Codes
  - Simultaneous Matrices
  - Expressive Attention
  - Successive Digits

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CAS2: Brief

- CAS2: Brief takes 20 minutes to administer
- It is intended to be used for instructional planning during Tier 2
- It is also used as a screening tool for a fast evaluation of PASS neurocognitive ability scores
- Also helpful for re-evaluations

CAS2: Brief Standard Scores

Planning	Attention	Simultaneous	Successive
133	91	103	125
94	82	94	78
61	91	90	100
91	92	97	100
70	83	100	70
65	75	66	50
40	89	68	80
87	87	87	85
89	85	90	70
96	103	101	85
59	61	62	55
99	98	105	125
56	82	92	85
103	83	92	80
97	99	100	115
94	89	99	90
95	76	97	122
81	98	70	75
96	105	100	95
75	89	98	55
81	79	104	110
77	85	100	80
52	81	80	65
94	82	82	100
56	145	106	115
86	95	75	80
80	74	82	75
134	89	107	85
96	83	85	100
88	79	73	80
64	129	98	121
98	118	85	75
85	97	75	80
98	107	102	83
64	91	90	65
83	91	93	60
MN	83.8	91.2	90.2	86.5
SD	20.1	15.6	20.4

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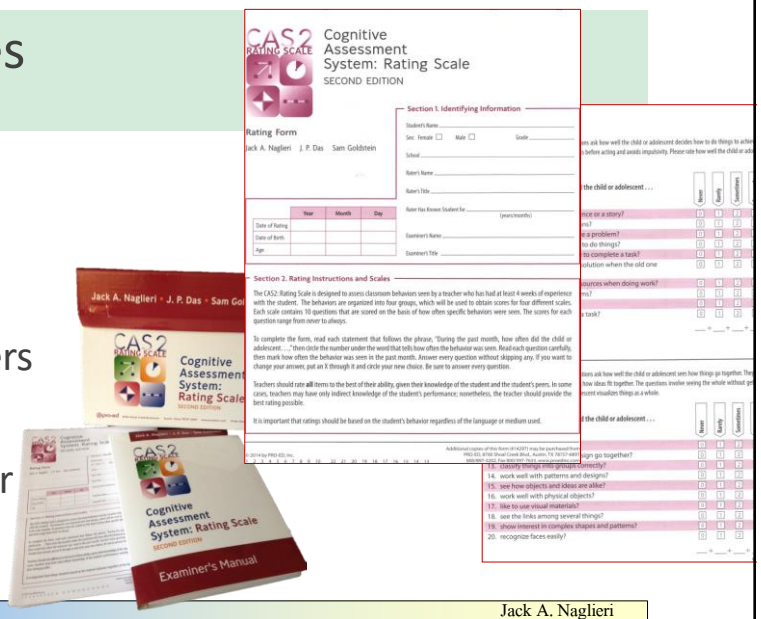
CAS2 Rating Scales
(Ages 4-18 yrs.)

- The CAS2: Rating measures behaviors associated with PASS constructs
- Completed by teachers and can be used by psychologists, special educators and regular educators



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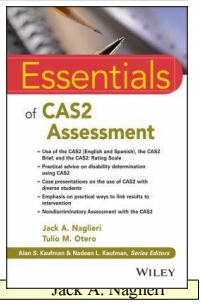
CAS2, CAS2 Online Score and Report Write, CAS2-Espanol, CAS2: Brief, CAS2 Rating Scale

- This book is the most complete discussion of PASS theory and its measurement
- Chapters cover all versions of the CAS2 as well as the online scoring and report writer
- Administration, scoring, interpretation
- Reliability, validity (PASS profiles, evidence of test fairness,
- Discrepancy Consistency Method for SLD
- Intervention planning and clinical case studies



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CAS2 is Different

My Professional Journey
- An Awakening About Traditional Intelligence Tests

A Theory Based on Brain Function
- Thinking vs Knowing and Social Justice

From PASS to CAS2
- A Different View of People

Research Update
- PASS and Equity – Measure Thinking not Knowing
- To *g* or not to *g*

Administration and Interpretation Issues
- Test order, subtest interpretation, etc.

Reasons To Change
- Validity of PASS Theory

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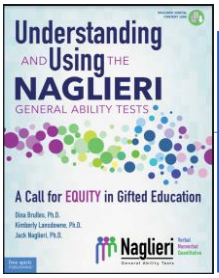
Race and Ethnic Differences for *Traditional* and *Second-Generation* Ability Tests



Note: Even though traditional intelligence tests may not show psychometric bias (Worrell, 2019) the large mean score differences suggest they are unfair (Brulles, et al., 2022).

Race and Ethnic Standard Score Differences Across Intelligence Tests	By Race	By Ethnicity
Tests that require knowledge	**Mn = 11.5**	**Mn = 9.2**
Otis-Lennon School Ability Test (distric wide)	13.6	
Stanford-Binet IV (normative sample)	12.6	
WISC-V (normative sample)	11.6	
WJ- III (normative sample)	10.9	10.7
CogAT7 (Nonverbal scale)	11.8	7.6
WISC-V (statistical controls normative sample)	8.7	
Tests that require minimal knowledge	**Mn = 4.1**	**Mn = 2.6**
K-ABC (normative sample)	7.0	
K-ABC (matched samples)	6.1	
CAS-2 (normative sample)	6.3	4.5
CAS (statistical controls normative sample)	4.8	4.8
CAS-2 (statistical controls normative sample)	4.3	1.8
CAS-2 Brief (normative samples)	2.0	2.8
NNAT (matched samples)	4.2	2.8
Naglieri General Ability Test-Verbal	2.2	1.6
Naglieri General Ability Test-Nonverbal	1.0	1.1
Naglieri General Ability Test-Quantitative	3.2	1.3

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4

Notes: The results summarized here were reported for the Otis-Lennon School Ability Test by Avant and O'Neal (1986); Stanford-Binet IV by Wasserman (2000); Woodcock-Johnson III race differences by Edwards & Oakland (2006) and ethnic differences by Sotelo- Dynega, Ortiz, Flanagan & Chaplin (2013); CogAT7 by Carman, Walther and Bartsch (2018); WISC-V by Kaufman, Raiford & Coalson (2016); Kaufman Assessment Battery for Children-II by Lichenberger, Sotelo- Dynega and Kaufman (2009); CAS by Naglieri, Rojahn, Matto & Aquilino (2005); CAS-2 and CAS2:Brief by Naglieri, Das & Goldstein, 2014; Naglieri Nonverbal Ability Test by Naglieri and Ronning (2000), and Naglieri General Ability Tests by Naglieri, Brulles and Lansdowne (2021).

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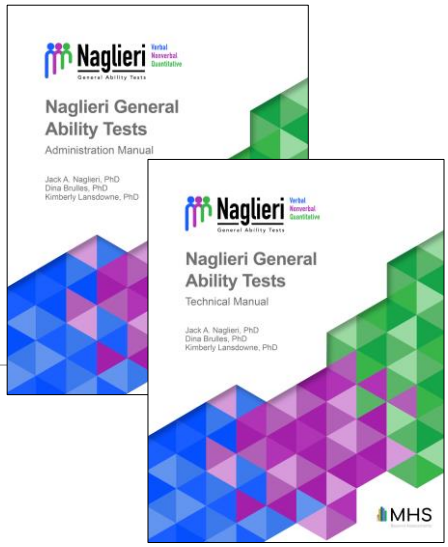
Measuring General Ability Equitably Using the Naglieri General Ability Tests: Verbal, Nonverbal and Quantitative



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Dina Brulles, Ph.D. dbrulles@gmail.com
Kim Lansdowne, Ph.D.
Kimberly.Lansdowne@asu.edu

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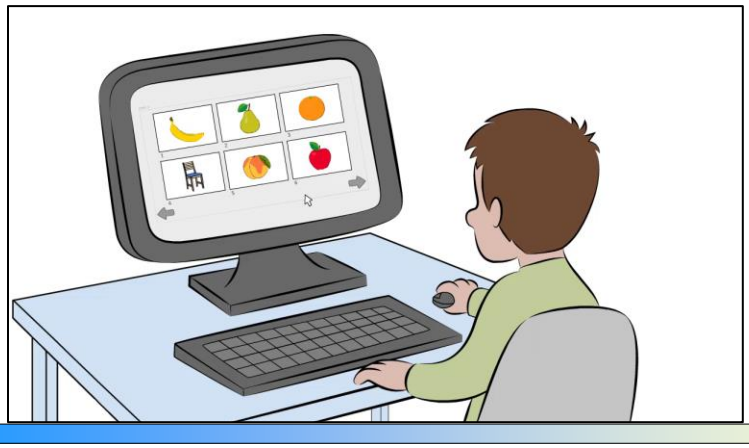
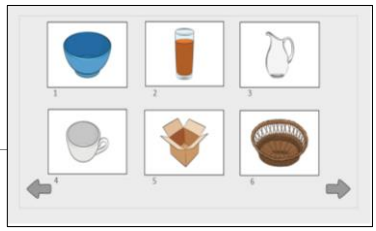
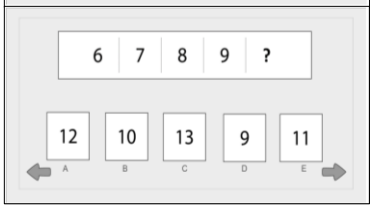
Naglieri General Ability Tests

(Naglieri & Brulles & Lansdowne, 2022)







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Initial Research Results (2019)

Selvamenan, M., Paolozza, A., Solomon, J., Naglieri, J. A., & Schmidt, M. T. (submitted for publication, Nov. 2020). Race, Ethnic, Gender, and Parental Education Level Differences on Verbal, Nonverbal, and Quantitative Naglieri General Ability Tests: Achieving Equity.

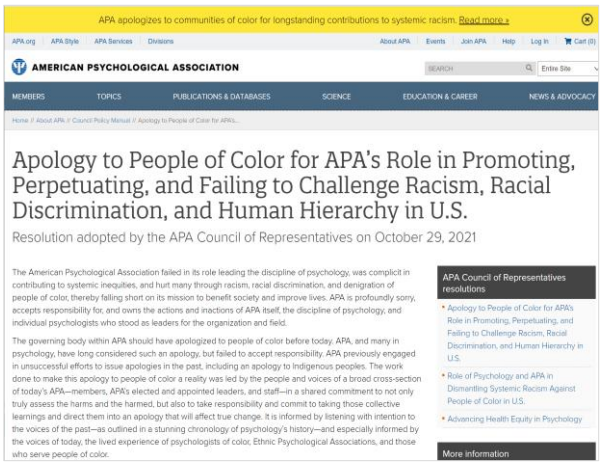
- **VERBAL SAMPLE**
  - 2,482 That closely matches the US population on key demographics
- **GENDER**
  - No differences between **males** and **females** for raw score across all forms
- **RACE/ETHNICITY**
  - No differences among **White, Black, & Hispanic** for raw score across all forms
- **PARENTAL EDUCATION LEVEL**
  - No differences among five education levels (**No high school diploma; High School graduate; Some college/Associate's degree; Bachelor's degree; Graduate/professional degree**) for raw score across all forms

- **NONVERBAL SAMPLE**
  - 3,630 That closely matches the US population on key demographics
- **GENDER**
  - No differences between **males** and **females** for raw score across all forms
- **RACE/ETHNICITY**
  - No differences among **White, Black, & Hispanic** for raw score across all forms
- **PARENTAL EDUCATION LEVEL**
  - No differences among five education levels (**No high school diploma; High School graduate; Some college/Associate's degree; Bachelor's degree; Graduate/professional degree**) for raw score across all forms

- **QUANTITATIVE SAMPLE**
  - 2,841 That closely matches the US population on key demographics
- **GENDER**
  - No differences between **males** and **females** for raw score across all forms
- **RACE/ETHNICITY**
  - No differences among **White, Black, & Hispanic** for raw score across all forms
- **PARENTAL EDUCATION LEVEL**
  - No differences among five education levels (**No high school diploma; High School graduate; Some college/Associate's degree; Bachelor's degree; Graduate/professional degree**) for raw score across all forms

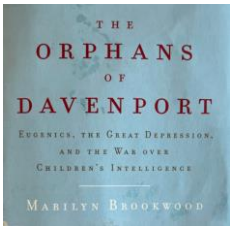
American Psychological Association Apology

- 'APA recognizes the roles of psychology in promoting…racism, and the harms that have been inflicted on communities of color …'
- 'Psychologists created and promoted the widespread application of psychological tests that have been used to disadvantage many communities of color'
- 'APA and its leadership failed to take action in response to calls from Black psychologists for an end to the misuse of tests developed by psychologists that perpetuated racial inequality… and the ways measurement of intelligence has been systemically used to create the ideology of White supremacy'



IQ Tests Role in Promoting Racism

- Lewis Terman – promoter of eugenics (Greek for good birth) and author of the Stanford-Binet (1916) wrote that his test would reveal "significant racial differences in general intelligence…which cannot be wiped our by any culture" and that identification of low-intelligence children and adults who would be involuntarily institutionalized and sterilized… would improve society. (p. 68, Brookwood, 2021)



RACIAL DIFFERENCES IN THE INTELLIGENCE OF SCHOOL CHILDREN

BY FLORENCE L. GOODENOUGH

Institute of Child Welfare, University of Minnesota

TABLE II

DISTRIBUTION OF INTELLIGENCE QUOTIENTS BY RACIAL STOCK

IQ	American	Armenian	Italian	Spanish-Mexican	California Negroes	Southern Negroes	Hoopa Valley Indians	Jewish	Chinese	Japanese	Germans	Portuguese	English and Scotch	French and Swiss	Danish, Swedish and Norwegian	Assyrian, Slavonian and Serbian
Total cases	500	123	456	367	69	613	79	55	25	42	29	11	14	14	31	29
Mdn.	100.3	91.8	87.5	87.2	82.7	76.5	85.6	106.3	103.1	99.5	98.8	93.3	99.5	92.8	104.5	94.5
Mean	101.5	92.3	89.1	88.5	85.8	78.7	85.6	106.1	104.1	101.9	101.1	94.5	100.2	94.5	103.6	92.8
S.D.	18.3	15.6	16.0	17.5	18.7	17.5	14.1	16.2	18.0	18.0	19.3	16.5	16.8	19.6	17.8	18.8
Coeff. of var.	18.0	16.9	18.0	19.8	21.8	22.2	16.5	15.3	17.2	17.7	19.1	17.5	16.8	20.7	17.2	20.3

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Equitable Intellectual Assessment

- The summary of research on race and ethnic differences illustrates:
- how the field of intellectual assessment has incorrectly influenced our understanding of the intelligence of PEOPLE;
- when the research was really a reflection of the content of the TESTS

Jack A. Naglieri

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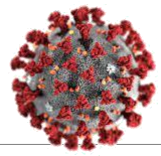
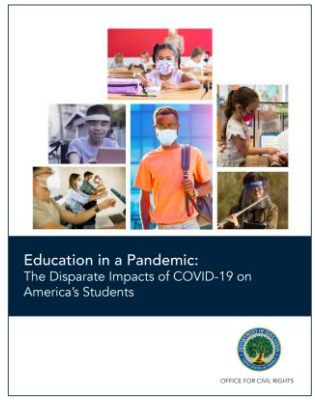
Academic Learning Loss & COVID



- COVID-19 has deepened the impact of disparities in access and opportunity for students of color
- Students of color are even further behind than they were before the pandemic
- ELL students had the dual challenge of learning content and English.
- These students' **intellectual scores on traditional tests** will reflect that larger learning gap related to COVID



Education in a Pandemic: The Disparate Impacts of COVID-19 on America's Students. US Dept. of Ed- Office of Civil Rights. June, 21, 2021. https://www2.ed.gov/about/offices/list/ocr/docs/20210608-impacts-of-covid19.p

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Illinois School District U-46

CAUTION !

Does an Equitable Test Always Solve the Problem?

The district with 42% Hispanics but only 2% of students in gifted were Hispanic.

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

DANIEL, DINAH and DEANNA MCFADDEN, minors, by their parent and next friend, Tracy McFadden; KAREN, RODOLFO and KIARA TAPIA, minors, by their parent and next friend, Mariela Montoya; JOCELYN BURCIAGA, minor, by her parent and next friend, Griselda Burciaga; and KASHMIR IVY, minors, by their parent and next friend, Beverly Ivy; KRISTIANNE SIFUENTES, minors, by her parent and next friend, Irma Sifuentes,

Plaintiffs,

v.

BOARD OF EDUCATION FOR ILLINOIS SCHOOL DISTRICT U-46,

Defendant.

No. 05 C 0760

Judge Robert W. Gettleman

On July 11, 2013, Judge Robert Gettlemen issued a decision holding that District U-46 *intentionally* discriminated against Hispanic students specific in their gifted programming (placement), and found problems with policies and instruments for screening and identification, (c) use of both verbal and math scores at arbitrary designated levels for screening and for identification, (d) use of weighted matrix, as well as content and criteria in weighted matrices that favored achievement and traditional measures, (e) too little reliance on a nonverbal test (Naglieri Nonverbal Ability Test) for admission to

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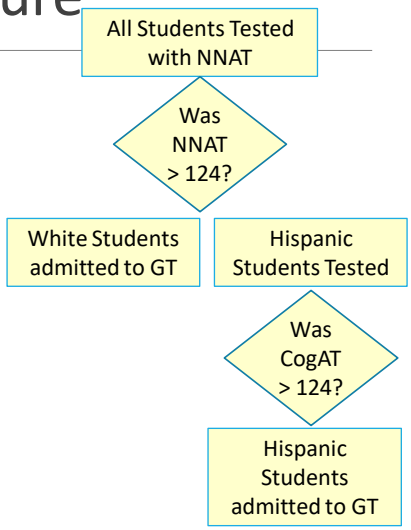
U-46 Identification Procedure

- Universal testing – ALL students given the Naglieri Nonverbal Ability Test (NNAT2).
- The white students with sufficiently high scores are identified and placed in gifted programs
- The Hispanic students with sufficiently high scores were then administered the CogAT and they were placed in the gifted program ***only*** if they had equally high scores



Jack A. Naglieri

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CAUTION!

Using **one fair test does NOT ensure** an equitable assessment process.

To find ALL gifted students **the entire assessment process must be equitable**.

The U-46 case reminds us that **HOW** tests scores are used in the assessment process is as important as **WHICH** tests are used.

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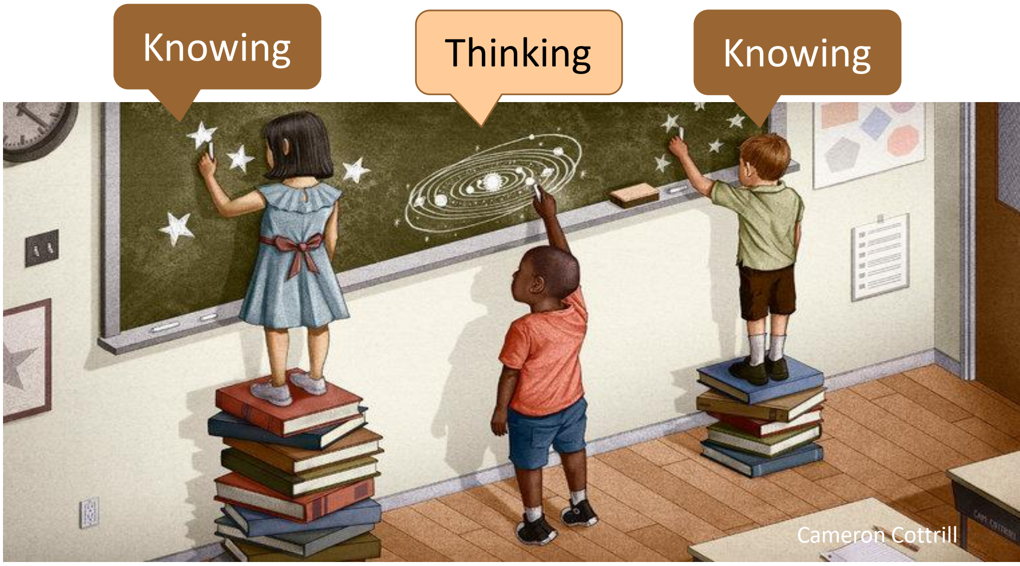

Why Talented Black and Hispanic Students Can Go Undiscovered
By SUSAN DYNARSKI APRIL 8, 2016

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PASS Scores for Hispanics
Naglieri, Rojahn, Matto (2007)

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

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

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

[a] Center for Cognitive Development, George Mason University, Department of Psychology, MS# 2C6, United States
[b] Virginia Commonwealth, United States

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

Abstract

Hispanics have become the largest minority group in the United States. Hispanic children typically come from working class homes with parents who have limited English language skills and educational training. This presents challenges to psychologists who assess these children using traditional IQ tests because of the considerable verbal and academic (e.g., quantitative) content. Some researchers have suggested that intelligence conceptualized on the basis of psychological processes may have utility for assessment of children from culturally and linguistically diverse populations because verbal and quantitative skills are not included. This study examined Hispanic children's performance on the Cognitive Assessment System (CAS; [Naglieri, J.A., and Das, J.P. (1997). Cognitive Assessment System. Itasca, IL: Riverside.]) which is [illegible] the Planning, Attention, Simultaneous, and Successive (PASS) theory of intelligence. The scores of Hispani[illegible] hite (N = 1956) children on the four PASS [illegible] complementary sampling [illegible] ximized using nationally [illegible] ples. Small differences

Hispanic White difference on CAS Full Scale of **4.8**

WJ-III and ELL Hispanic Students
(Sotelo-Dynega, Ortiz, Flanagan & Chaplin, 2013)

Table 1
WJ III GIA and Test Performance Differences Between LEPs and the WJ III Standardization Sample Mean

	Sample		WJ III Sample				
WJ III Test	*M*	*SD*	*M*	*SD*	Difference	*t*	*d*
General Intellectual Ability	89.34	11.78	100	15	− 10.64	− 7.07**	− .90
Verbal Comprehension	80.38	14.09	100	15	− 19.62	− 10.87***	− 1.40
Concept Formation	87.16	12.20	100	15	− 12.84	− 8.22***	− 1.05
Numbers Reversed	95.23	12.46	[illegible]	15	− 4.77	− 2.96*	− 0.38
Visual-Auditory Learning	95.62	14.56	[illegible]	15	− 4.38	− 2.35*	− 0.30
Sound Blending	97.82	11.57	[illegible]	15	− 2.18	− 1.47	− 0.19
Visual Matching	[illegible]	[illegible]	[illegible]	[illegible]	− 1.07	− 0.85	− 0.11
Spatial Relations	[illegible]	[illegible]	[illegible]	[illegible]	− 0.82	− 0.758	− 0.10

*p < .05. **p < .01. ***p [illegible]

11-point mean score difference in GAI

Table 2
Differences Among the NYSESLAT Proficiency Group's WJ III, GIA Mean Score, and the WJ III Standardization Sample Mean

	Sample		WJ III Sample
NYSESLAT Proficiency Group	*M*	*SD*	*M*
Beginner	71.75	3.95	100
Intermediate	82.29	8.66	[illegible]
Advanced	89.55	9.17	100
Proficient	101	9.23	100

*p < .001.

As English skills go down so does the GAI

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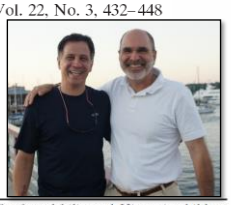
PASS scores – English and Spanish

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

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

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



This study compared the performance of referred bilingual Hispanic 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 [illegible] were noted between the [illegible] Simultaneous and Successive [illegible] were similar. Specific subtests were found to contribute to [illegible] versions of the CAS. Compar[illegible] ness on both versions of the [illegible] sistently despite the language [illegible]

Keywords: bilingual assessment, [illegible] tem, non-biased assessment

APPLIED NEUROPSYCHOLOGY: CHILD, 0: 1–9, 2012
Copyright © Taylor & Francis Group, LLC
ISSN: 2162-2965 print/2162-2973 online
DOI: 10.1080/21622965.2012.670547

Psychology Press

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

Tulio M. Otero
Departments of Clinical Psychology and School Psychology, Chicago School of Professional Psychology, Chicago, Illinois
Lauren Gonzales
George Mason University, Fairfax, Virginia
Jack A. Naglieri
University of Virginia, Fairfax, Virginia

This study examined the performance of referred Hispanic English-language learners ($N = 40$) on the English and Spanish versions of the *Cognitive Assessment System* (CAS; Naglieri & Das, 1997). The CAS measures basic neuropsychological processes based on the Planning, Attention, Simultaneous, and Successive (PASS) theory (Naglieri & Das, [illegible] scores as well as PASS processing scale [illegible]rences were found in FS scores or in any of [illegible] English ($M = 86.4$, $SD = 8.73$) and Spanish [illegible] (uncorrected) and .99 (corrected for range [illegible]s in Successive processing regardless of the [illegible]. PASS cognitive profiles were similar on [illegible]cales. These findings suggest that students [illegible] and that the CAS may be a useful measure [illegible]n with underdeveloped English-language

- Very similar scores in English and Spanish versions of CAS
- >**90% agreement** between PASS weakness & strengths using English and Spanish CAS in **BOTH** studies

CAS in Italy

Using US norms, Italian sample (N = 809) CAS Full Scale was 100.9 and matched US sample (N = 1,174) was 100.5 and factorial invariance was found

Psychological Assessment

1040-3590/12/$12.00 DOI: 10.1037/a0029828

Multigroup Confirmatory Factor Analysis of U.S. and Italian Children's Performance on the PASS Theory of Intelligence as Measured by the Cognitive Assessment System

Jack A. Naglieri
University of Virginia and Devereux Center for Resilient Children

Stefano Taddei
University of Florence

Kevin Williams
Multi-Health Services, Toronto, Ontario, Canada

This study examined Italian and U.S. children's performance on the English and Italian versions, respectively, of the Cognitive Assessment System (CAS; Naglieri & Conway, 2009; Naglieri & Das, 1997), a test based on a neurocognitive theory of intelligence entitled PASS (Planning, Attention, Simultaneous, and Successive; Naglieri & Das, 1997; Naglieri & Otero, 2011). CAS subtest, PASS scales, and Full Scale scores for Italian ($N = 809$) and U.S. ($N = 1,174$) samples, matched by age and gender, were examined. Multigroup confirmatory factor analysis results supported the configural invariance of the CAS factor structure between Italians and Americans for the 5- to 7-year-old (root-mean-square error of approximation [RMSEA] = .038; 90% confidence interval [CI] = .033, .043; comparative fit index [CFI] = .96) and 8- to 18-year-old (RMSEA = .036; 90% CI = .028, .043; CFI = .97) age groups. The Full Scale standard scores (using the U.S. norms) for the Italian (100.9) and U.S. (100.5) samples were nearly identical. The scores between the samples for the PASS scales were very similar, except for the Attention Scale ($d = 0.26$), where the Italian sample's mean score was slightly higher. Negligible mean differences were found for 9 of the 13 subtest scores, 3 showed small d-ratios (2 in favor of the Italian sample), and 1 was large (in favor of the U.S. sample), but some differences in subtest variances were found. These findings suggest that the PASS theory, as measured by CAS, yields similar mean scores and showed factorial invariance for these samples of Italian and American children, who differ on cultural and linguistic characteristics.

Measuring Thinking using CAS

- ***White*** children earned similar scores on the Verbal and Performance scales
- ***Black*** children earned lower VIQ than PIQ scores due to language / achievement tasks → low Full Scale
- ***Black*** children earned ***higher*** Full Scale scores on CAS than whites
- ***Fewer*** Black children would be identified as having intellectual disability based on Full Scale scores using CAS than WISC-III
- *THIS IS A SOCIAL JUSTICE ISSUE*.

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

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

Jack A. Naglieri
George Mason University

Johannes Rojahn
The Ohio State University

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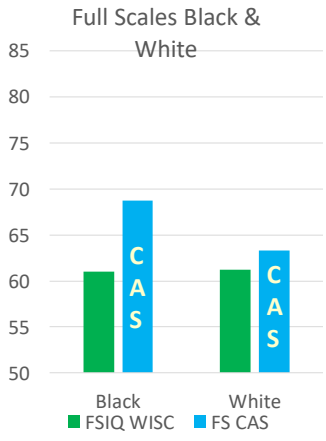
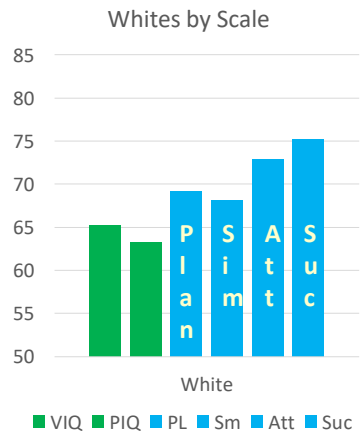
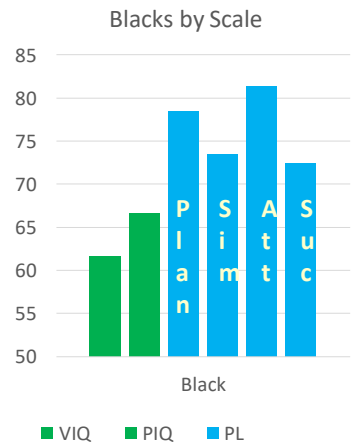
Measuring Thinking using CAS







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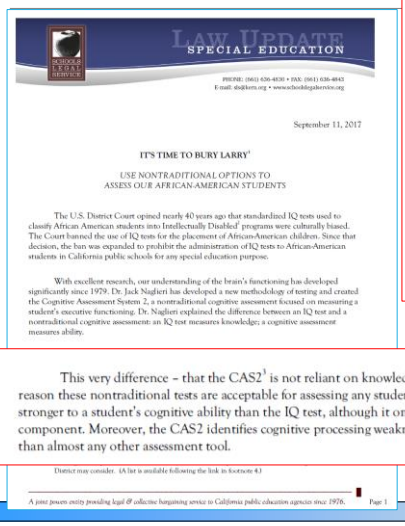
California



LAW UPDATE
SPECIAL EDUCATION

September 11, 2017

IT'S TIME TO BURY LARRY[1]

USE NONTRADITIONAL OPTIONS TO ASSESS OUR AFRICAN-AMERICAN STUDENTS

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

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

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

District may consider. (A list is available following the link in footnote 4.)

A joint powers entity providing legal & collective bargaining service to California public education agencies since 1976. Page 1

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

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

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

- STEPHANIE VIRREY GUTCHER

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

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

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

A joint powers entity providing legal & collective bargaining service to California public education agencies since 1976. Page 2

Jack A. Naglieri

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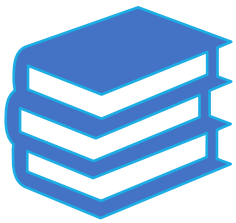

Research on Interpretation of Test Scores and PSW

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Journal Information
Journal TOC

PsycARTICLES: Journal Article

Structural validity of the Wechsler Intelligence Scale for Children–Fifth Edition: Confirmatory factor analyses with the 16 primary and secondary subtests.

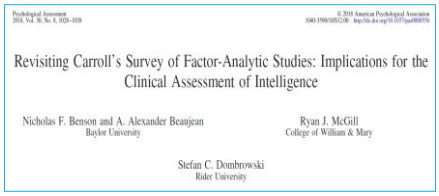
© Request Permissions

Canivez, Gary L.,Watkins, Marley W.,Dombrowski, Stefan C.

Canivez, G. L., Watkins, M. W., & Dombrowski, S. C. (2017). Structural validity of the Wechsler Intelligence Scale for Children–Fifth Edition: Confirmatory factor analyses with the 16 primary and secondary subtests. *Psychological Assessment, 29*(4), 458–472. https://doi.org/10.1037/pas0000358

Support for 'g'

- …The small portions of variance uniquely captured by [subtests]… render the group factors [scales]of questionable interpretive value independent of g (FSIQ general intelligence)
- Present CFA results confirm the EFA results (Canivez, Watkins, & Dombrowski, 2015); Dombrowski, Canivez, Watkins, & Beaujean (2015); and Canivez, Dombrowski, & Watkins (2015).



Revisiting Carroll's Survey of Factor-Analytic Studies: Implications for the Clinical Assessment of Intelligence

Nicholas F. Benson and A. Alexander Beaujean, Baylor University
Ryan J. McGill, College of William & Mary
Stefan C. Dombrowski, Rider University

- **The results of this study indicate that most cognitive abilities specified in** John Carroll's **three-stratum theory have little-to-no interpretive relevance above and beyond that of general intelligence.**

Research Supports 'g' but little More

Benson, N. F., Beaujean, A. A., McGill, R. J, & Dombrowski, S. C. (2018). Revisiting **Carroll's Survey of Factor-Analytic Studies**: Implications for the Clinical Assessment of Intelligence. *Psychological Assessment,* 30, 8, 1028–1038.

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School Psychology Quarterly
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1045-3830/11/$12.00 DOI: 10.1037/a0025973

Hierarchical Factor Structure of the Cognitive Assessment System: Variance Partitions From the Schmid–Leiman (1957) Procedure

Gary L. Canivez
Eastern Illinois University

Orthogonal higher-order factor structure of the Cognitive Assessment System (CAS; Naglieri & Das, 1997a) for the 5–7 and 8–17 age groups in the CAS standardization sample is reported. Following the same procedure as recent studies of other prominent intelligence tests (Dombrowski, Watkins, & Brogan, 2009; Canivez, 2008; Canivez & Watkins, 2010a, 2010b; Nelson & Canivez, 2011; Nelson, Canivez, Lindstrom, & Hatt, 2007; Watkins, 2006; Watkins, Wilson, Kotz, Carbone, & Babula, 2006), three- and four-factor CAS exploratory factor extractions were analyzed with the Schmid and Leiman (1957) procedure using MacOrtho (Watkins, 2004) to assess the hierarchical factor structure by sequentially partitioning variance to the second- and first- order dimensions as recommended by Carroll (1993, 1995). Results showed that greater portions of total and common variance were accounted for by the second-order, global factor, but compared to other tests of intelligence CAS subtests measured less second-order variance and greater first-order Planning, Attention, Simultaneous, and Successive (PASS) factor variance.

Keywords: CAS, construct validity, hierarchical exploratory factor analysis, Schmid–Leiman higher-order analysis, structural validity

Support for PASS Scales

- "…compared to the WISC–IV, WAIS–IV, SB–5, RIAS, WASI, and WRIT, the CAS subtests had less variance apportioned to the higher-order general factor (g) and *greater proportions of variance apportioned to first-order (PASS…) factors*.
- This is consistent with the subtest selection and construction in an attempt to measure PASS dimensions linked to PASS theory … and neuropsychological theory (Luria)." (p. 311)

Jack A. Naglieri

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PASS

- Given that PASS scales CAN be interpreted it is important to know
  - if these scales yield PROFILES that can be used in a Pattern of Strengths and Weaknesses approach to eligibility determination AND
  - do PASS scores relate to achievement more than traditional intelligence tests?

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Summaries of Research on Pattern of Strengths & Weaknesses of Scales from Several Intelligence Tests


OVERVIEW 39

DETECTING LEARNING PROBLEMS

All intelligence tests give a Full Scale score that is composed of scales that in turn are composed of subtests. The analysis of subtest and scale variation on ability tests is a method called *profile analysis*, which has been advocated by Kaufman (1994) and others (e.g., Sattler, 1988) to identify strengths and weaknesses that may underlie a learning disability. Information about strengths and weaknesses has been used to generate hypotheses that are integrated with other information so that decisions can be made regarding eligibility, diagnosis, and treatment. Despite the widespread use of this method, some have argued that subtest profile analysis does not provide useful information beyond that which is obtained from the IQ scores (e.g., Dombrowski & Watkins, 2013; McDermott, Fantuzzo, & Glutting, 1990). Naglieri (1999) proposed that subtest analysis is problematic because of limitations in subtest reliability and validity and suggested that profile analysis of scales could be more effective. Theoretically derived scales could be helpful if the ability test shows a specific pattern for a specific group of exceptional students, which in turn could have implications for understanding the cognitive characteristics of the group, allow for guidance during the eligibility process (see Naglieri, 2011a, 2012) and guide interventions (Naglieri & Pickering, 2010).

Naglieri (2011a) summarized research about students with reading decoding failure and ADHD reported in the technical manual for the Wechsler Intelligence


CHAPTER 1

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

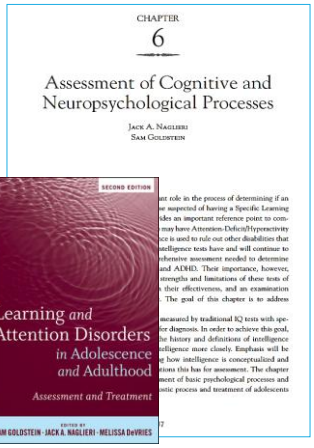
Jack A. Naglieri

The reliability and validity of information obtained from any psychological test is dependent on the scope and psychometric attributes of the instrument used. As in all areas of science, what psychologists discover depends on the quality of the instruments

in school psychological practice, as described by the National Association of School Psychologists (2010). The goal of this chapter is not to summarize all the changes that have recently occurred or to predict the outcome of these changes but rather to summarize some important issues related to the current state of the field and the apparent strengths and weaknesses of the various options.

INTELLIGENCE AND SPECIFIC LEARNING DISABILITIES

Controversy is not new to the construct of intelligence and its measurement (see Jensen, 1998). Arguments have raged about the nature of intelligence—is it one factor or multiple factors, are intelligence tests biased or not, what are the best ways to interpret test results, do children with specific disabilities have distinctive ability profiles, and do intelligence test scores have relevance beyond diagnostic classifica-


CHAPTER
6

Assessment of Cognitive and Neuropsychological Processes

JACK A. NAGLIERI
SAM GOLDSTEIN

Jack A. Naglieri

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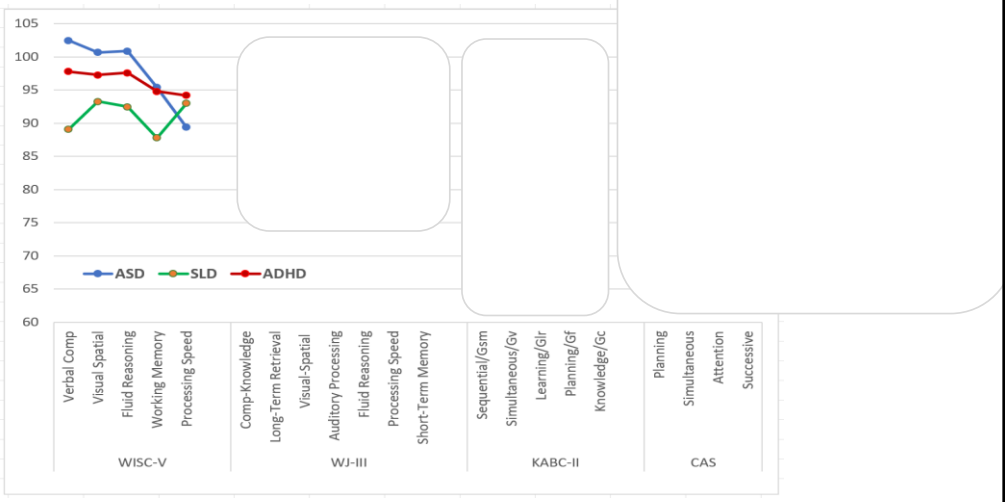
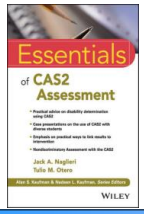
These profiles across tests is very revealing - PASS works

Patterns of Strengths & Weaknesses



Correlation with Achievement: We can do better!

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



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

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

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PASS theory of intelligence and academic achievement: A meta-analytic review

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[c] State University of Maringá, Brazil

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Meta-analysis
PASS processes
Reading

ABSTRACT

Although Planning, Attention, Simultaneous and Successive (PASS) processing theory of intelligence has been argued to offer an alternative look at intelligence and PASS processes – operationalized with the Cognitive Assessment System – have been used in several studies, it remains unclear how well the PASS processes relate to academic achievement. Thus, this study aimed to determine their association by conducting a meta-analysis. A random-effects model analysis of data from 62 studies with 93 independent samples revealed a moderate-to-strong relation between PASS processes and reading, $r = 0.409$, 95% CI = [0.363, 0.454]), and mathematics, $r = 0.461$, CI = [0.405, 0.517]. Moderator analyses further showed that (1) PASS processes were more strongly related with reading and math in English than in other languages, (2) Simultaneous processing was more strongly related to math accuracy and problem solving than math fluency, (3) Simultaneous processing was more strongly related to problem solving than Attention, and (4) Planning was more strongly related to math fluency than Simultaneous processing. Age, grade level, and sample characteristics did not influence the size of the correlations. Taken together, these findings suggest that PASS cognitive processes are significant correlates of academic achievement, but their relation may be affected by the language in which the study is conducted and the type of mathematics outcome. They further support the use of intervention programs that stem from PASS theory for the enhancement of reading and mathematics skills.

Georgiou, G., Guo, K., Naveenkumar, N., Vieira, A. P. A., & Das, J. P. (2019) PASS theory of intelligence and academic achievement: A meta-analytic review. *In press Intelligence.*

PASS Research

- "The results clearly show that when CAS Full Scale is used it correlates **.60 with reading** and **.61 with mathematics**."
- "**These correlations are significantly stronger … than the correlations reported in previous meta-analysis for other measures of intelligence** (e.g., Peng et al., 2019; Roth et al., 2015)…(e.g., WISC) that include tasks (e.g., Arithmetic, Vocabulary)…"
- "if we **conceptualize intelligence as … cognitive processes that are linked to the functional organization of the brain**" it leads to significantly higher relations with academic achievement."
  - "and these processes have direct implications for instruction and intervention…"

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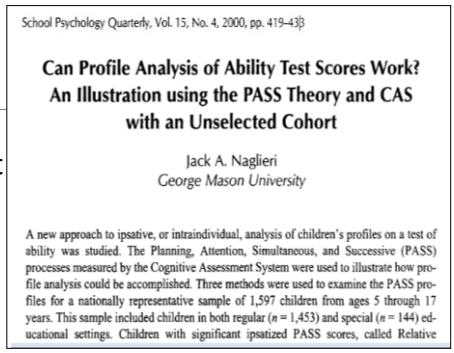
Research on PASS Profiles

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

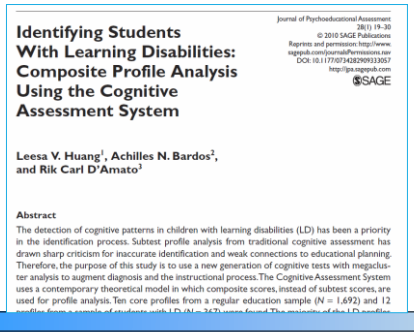


School Psychology Quarterly, Vol. 15, No. 4, 2000, pp. 419–43[illegible]

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

Jack A. Naglieri
George Mason University

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



Identifying Students With Learning Disabilities: Composite Profile Analysis Using the Cognitive Assessment System

Journal of Psychoeducational Assessment
28(1) 19-30
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DOI: 10.1177/0734282909333057
http://jpa.sagepub.com
SAGE

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

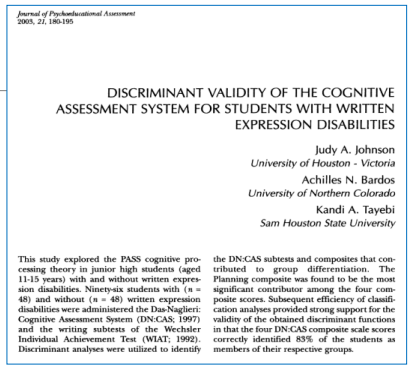
Abstract

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

"**Ten core profiles** from a regular education sample (N = 1,692) and 12 profiles from a sample of students with LD (N = 367) were found.

Research on PASS Profiles

- "the CAS…yields information that contributes to the differential diagnosis of students suspected of having a **learning disability in writing**"

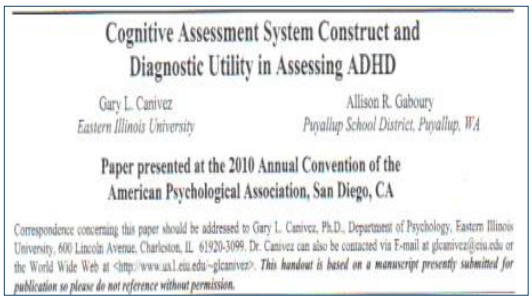


Journal of Psychoeducational Assessment
2005, *21*, 180-195

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

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

This study explored the PASS cognitive processing theory in junior high students (aged 11-15 years) with and without written expression disabilities. Ninety-six students with (n = 48) and without (n = 48) written expression disabilities were administered the Das-Naglieri: Cognitive Assessment System (DN:CAS; 1997) and the writing subtests of the Wechsler Individual Achievement Test (WIAT; 1992). Discriminant analyses were utilized to identify the DN:CAS subtests and composites that contributed to group differentiation. The Planning composite was found to be the most significant contributor among the four composite scores. Subsequent efficiency of classification analyses provided strong support for the validity of the obtained discriminant functions in that the four DN:CAS composite scale scores correctly identified 85% of the students as members of their respective groups.



Cognitive Assessment System Construct and Diagnostic Utility in Assessing ADHD

Gary L. Canivez
Eastern Illinois University

Allison R. Gaboury
Puyallup School District, Puyallup, WA

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

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

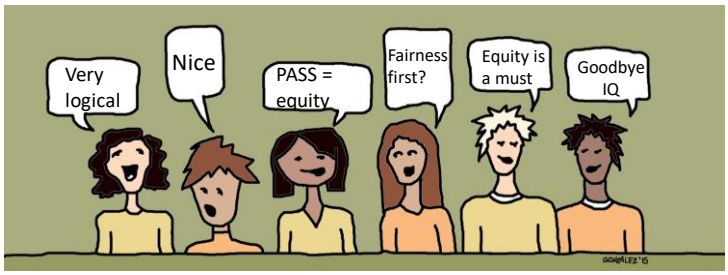
- "the present study demonstrated the potential of the CAS to correctly identify students who **demonstrated behaviors consistent with ADHD** diagnosis."

Intelligence Tests and Prediction

- Intelligence tests are one of the primary tools for identifying children with Intellectual disability, specific learning disabilities, and giftedness
  - The goal is to determine if there is a cognitive explanation for academic successes or failure
- The correlations between intelligence and achievement tests and the profiles of scores these tests measure tell us the value these test scores have for both predication and explanation of specific academic success and failure

Core Group Activity

- **QUESTION:**
  - **How do you intend to practice in a socially equitable manner?**
  - **Can you integrate PASS theory into your comprehensive assessments**



CAS2 is Different

- **My Professional Journey**
  - An Awakening About Traditional Intelligence Tests
- **A Theory Based on Brain Function**
  - Thinking vs Knowing and Social Justice
- **From PASS to CAS2**
  - A Different View of People
- **Research Update**
  - PASS and Equity – Measure Thinking not Knowing
  - To *g* or not to *g*
- **Administration and Interpretation Issues**
  - Test order, subtest interpretation, etc.
- **Reasons To Change**
  - Validity of PASS Theory

Administration Details

- Core Battery is the first 2 subtests in each of the PASS scales
- Order of administration is IMPORTANT
  - Why is Planning first and Successive last?
- Should you use parts of the CAS2?
- Demonstration, Example, and Provide Help option

Table 1.2 Structure of the CAS Scales and Subtests in Order of Administration

Scale	Subtests
Planning	
	Matching Numbers (MN)
	Planned Codes (PCd)
	Planned Connections (PCn)
Simultaneous	
	Nonverbal Matrices (NvM)
	Verbal-Spatial Relations (VSR)
	Figure Memory (FM)
Attention	
	Expressive Attention (EA)
	Number Detection (ND)
	Receptive Attention (RA)
Successive	
	Word Series (WS) and or Sentence Repetition (SR)
	Speech Rate (SpR, ages 5–7 years) or Sentence Questions (SQ, ages 8–17 years)

Expose Example A and say,

Look at this page (point to the page). **Draw a line from the number 1 to the number 2, 2 to 3, 3 to 4, and 4 to 5.** Provide help if necessary.

With Example A still exposed, say,

I'm going to give you some more of these to do. You should always start from the number 1 (point to the number 1 in the bold box in Example A) **and draw a line from one number to the next until you get to the last number** (point to the number 5). **Work as quickly as you can without making a mistake, and tell me when you're finished.**

Ready? (Provide a brief explanation if necessary.)

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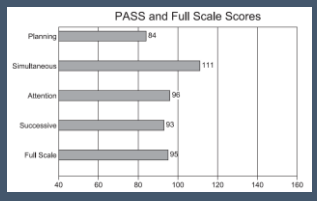
Interpretation Details

- Full Scale – Is misleading if there is PASS scale variability
- You may want to exclude the Full Scale completely



FULL SCALE

Tony earned a Cognitive Assessment System, Second Edition (CAS2) Full Scale score of 95, which is within the Average classification and is a percentile rank of 37. This means that his performance is equal to or greater than that of 37% of children his age in the standardization group. There is a 90% probability that Tony's true Full Scale score falls within the range of 91 to 99. 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 Planning Scale was found to be a significant cognitive weakness. This means that Tony's Planning score was a weakness both in relation to his average PASS score and when compared to his peers. This cognitive weakness has important implications for diagnosis, eligibility determination, therapeutic and educational programming. The Simultaneous Scale was found to be a significant cognitive strength. This means that Tony's Simultaneous 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.

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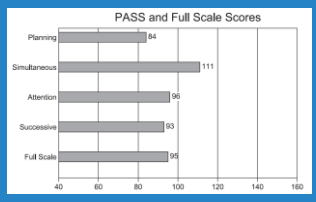
INTERPRETATION 123

FULL SCALE

Tony earned a Cognitive Assessment System, Second Edition (CAS2) Full Scale score of 95, which is within the Average classification and is a percentile rank of 37. This means that his performance is equal to or greater than that of 37% of children his age in the standardization group. There is a 90% probability that Tony's true Full Scale score falls within the range of 91 to 99. 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 Planning Scale was found to be a significant cognitive weakness. This means that Tony's Planning score was a weakness both in relation to his average PASS score and when compared to his peers. This cognitive weakness has important implications for diagnosis, eligibility determination, therapeutic and educational programming. The Simultaneous Scale was found to be a significant cognitive strength. This means that Tony's Simultaneous 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.



Interpretation Details

PASS SCALE – IPSATIVE AND NORMATIVE COMPARISONS

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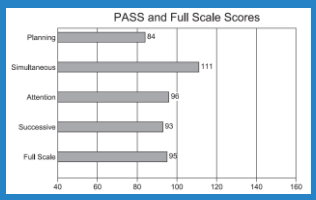
124 ESSENTIALS OF CAS2 ASSESSMENT

PLANNING SCALE

Tony's Planning score was significantly lower than his average PASS score and below the average range. This means that Tony performed particularly poorly on tests that required strategies for solving the problems on the Planning tests. He had trouble with development and use of good strategies, control of behavior, self-monitoring, and self-correction when completing these tests. Tony earned a CAS2 Planning Scale score of 84 which is within the Below Average classification and is a percentile rank of 14. The percentile rank indicates that Tony did as well as or better than 14% of others his age in the standardization group. There is a 90% probability that Tony's true Planning score is within the range of 79 to 92. This cognitive weakness has important implications for diagnosis, eligibility determination, and educational and therapeutic programming because children who are weak on the Planning Scale often have problems with tasks requiring strategies, completing schoolwork and other tasks on time, impulse control, self-monitoring, and social situations. There was no significant variation among his three subtest scores in the Planning Scale.

Interpretation Details

INTERPRET EACH SCALE FROM PASS THEORY



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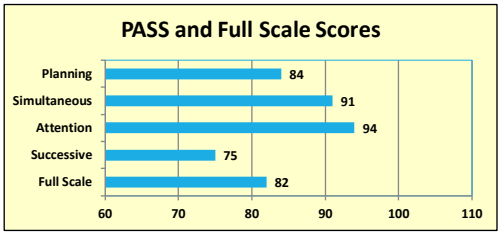
Lupe Aged 12 Years

- Initial referral !
- Her low Successive processing influenced Planned Connections subtest
- Pro-rated Planning score = 97



Composite/Subtest	Standard Scores	Percentile Rank
Brief Achievement (BA-3) Composite	74	4
Letter & Word Recognition	80	9
Letter & Word Recognition-Spanish	47	<0.1
Math Computation	76	5
Spelling	75	5
Reading Composite	75	5
Letter & Word Recognition	80	9
Reading Comprehension	72	3
Math Composite	74	4
Math Concepts & Applications	74	4
Math Computation	76	5
Written Language Composite	-	-
Spelling	75	5

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- My Professional Journey
  - An Awakening About Traditional Intelligence Tests
- A Theory Based on Brain Function
  - Thinking vs Knowing and Social Justice
- From PASS to CAS2
  - A Different View of People
- Research Update
  - PASS and Equity – Measure Thinking not Knowing
  - To *g* or not to *g*
- Administration and Interpretation Issues
  - Test order, subtest interpretation, etc.
- Reasons To Change
  - Validity of PASS Theory

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Summary: PASS theory and CAS2 (see Naglieri & Otero, 2017)

1. The PASS scales on the CAS2 measure *thinking* (i.e. basic psychological processing) rather than *knowing* (e.g., vocabulary, arithmetic etc.), making the test good for assessment of diverse populations and those with limited educational opportunity.
2. PASS scores can be easily obtained in 20 minutes (using the 4-subtest **CAS2 Brief**), 40 minutes (using the **8-subtest Core Battery**) or 60 minutes (using the **12-subtest Extended Battery**), scored and a narrative reports provided using the **online program**. (Digital CAS2 is in final stages of development.)
3. PASS results are easy for teachers, parents and the students themselves to understand because the concepts can be explained in non-technical language.
4. The PASS theory and the CAS2 provide a way to both define and assess 'basic psychological processes' so that practitioners can obtain scores that are consistent with state and federal IDEA guidelines.
5. The PASS scores are strongly correlated to achievement, show distinct patterns of strengths and weaknesses, are very useful for intervention planning.
6. The CAS2 provides defensible Discrepancy Consistency Method to identify students with SLD.
7. Research has shown that PASS scores have relevance to instruction and intervention.

Questions and Thoughts Please

Change Demands Courage to Think Differently

Socially just assessment requires self-reflection (What am I doing?) and self-correction (I will choose something new) in response to current research (There is a better way!).

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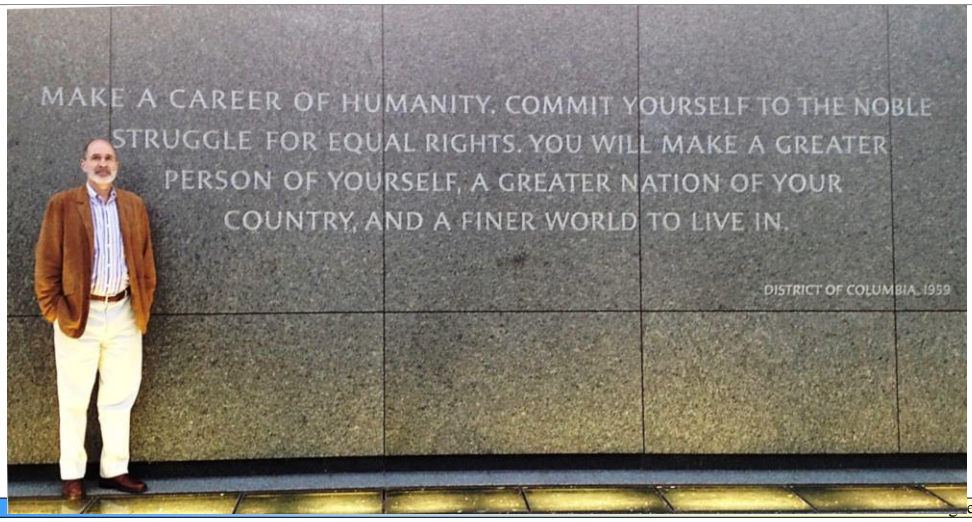
Equitable Assessment is Essential



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