SUMMARY: In this presentation Drs. Naglieri and Otero will review the current state of the art in intellectual assessment and emphasize the value of the neurocognitive processing approach called PASS as measured by the Cognitive Assessment System-Second Edition (CAS2), both English and Spanish versions, as well as the CAS2: Brief and CAS2: Rating Scale. Cases will be shown which illustrate the value of the CAS2 for eligibility determination and intervention and the alignment of PASS scores to academic achievement test scores. The Discrepancy Consistency Method will be used to identify students with Dyslexia, their strengths and cognitive processing weakness, and identify interventions all within the context of equitable assessment. Topics will address intellectual disabilities, English language learners, and ADHD. The goal is the help teachers and parents better understand the impact Dyslexia can have on their students and children, respectively. In addition, to help these and other students be more resilient by engaging them in the solutions to any learning challenges that they may have.

Using the PASS Theory and CAS2 for Assessment of Dyslexia and Other Disabilities in an Equitable Manner

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How Are You Feeling Today ?

2

Feeling Overwhelmed?

Mindful Breathing

3

3

Resources

FOR MORE INFORMATION
PLEASE GO TO MY WEB PAGE

4

4

Disclosures

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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 us 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 a way to measure a student's ABILITY to think

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Genaro 10yrs 4th Grader

- Was in a bilingual across categorical class grades 1-3
- Had a diagnosis of developmental delay (preK and K) and then ID in 1st grade. Intensive speech and language interventions for language processing and well as OT. Continues in Sp/L and OT services are now on a consultive bases.
- Since last year has received intensive reading intervention and some math supports
- Seen as part of a reevaluation – I was asked, Is he really ID?

Note: All names are fictional and stock photos are used.

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Current Status

- Currently is in a Cross-Categorical, self-contained program
- Is reading instructional level G text, with 98% accuracy, 1:2 self-correction rate, and approaching proficient comprehension with prompting, scaffolding, rephrasing, and interpreting in Spanish.
- Working in the 2nd grade math curriculum within a small group. He is making satisfactory progress at this level.

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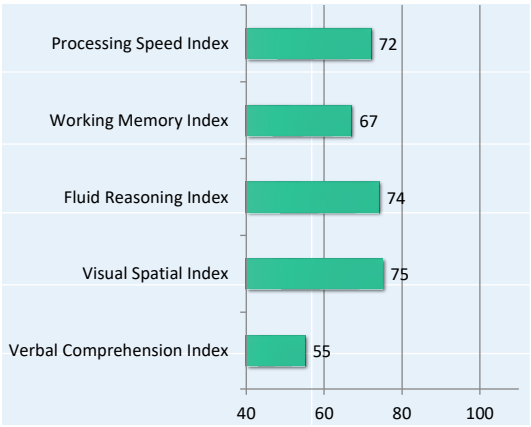
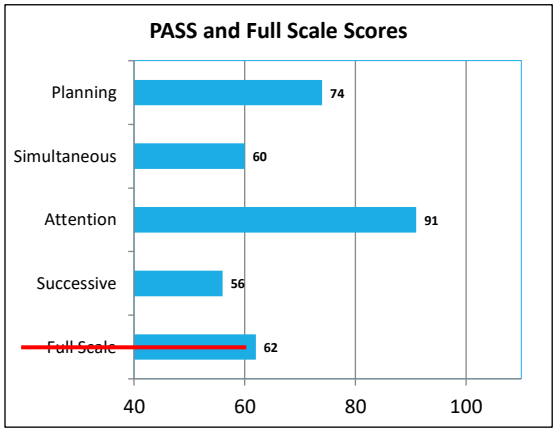
Cognitive abilities & Cognitive Processes

WISC-5



CAS2



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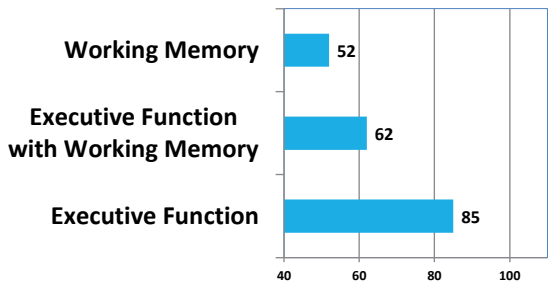
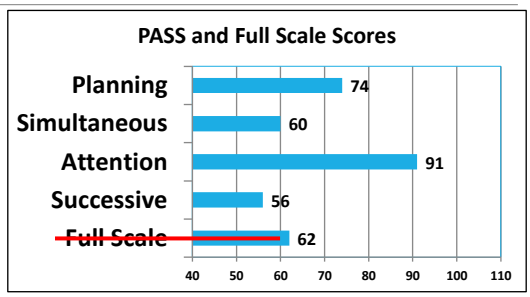
CAS2 Results

Supplemental Composite Scores





Even though this Planning score is not significantly lower then the PASS mean it is weak in relation to the norm

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

Cognitive Assessment System-2		PASS Mean & Differences:	Significantly Different (at p = .05) from PASS Mean?	Strength or Weakness
PASS Scales	Standard Score	70.3		
Planning	74	3.7	no	
Simultaneous	60	-10.3	yes	Weakness
Attention	91	20.7	yes	
Successive	56	-14.3	yes	Weakness

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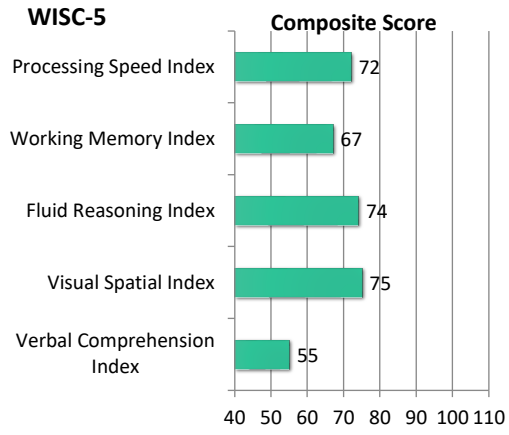
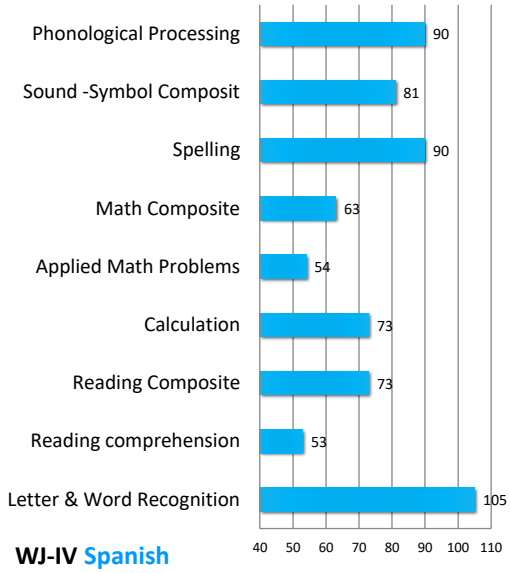
Cognitive Ability & Academic Skills





WJ-IV Spanish
English

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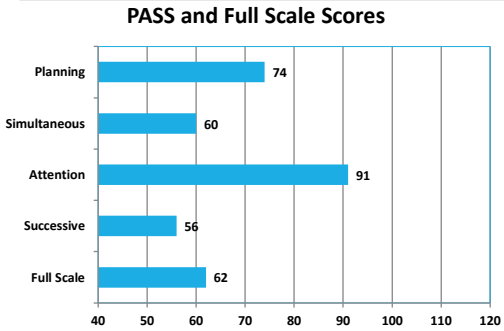
Cognitive Processing Abilities and Academic skills



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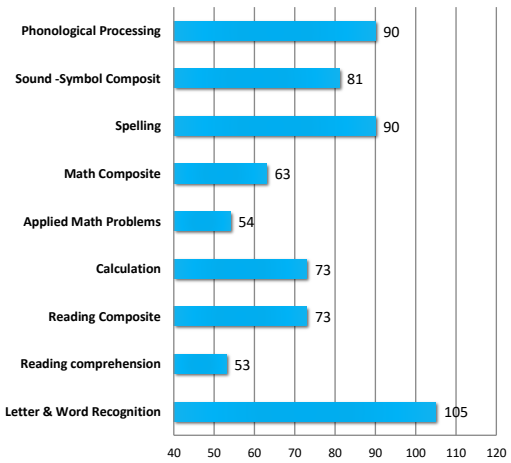

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Why is this Case important?

- 1. He was identified as ID and now they are not sure. He has improved substantially.
- 2. Teachers have worked with him intensively in reading. This is why decoding real words, nonwords and phonological processing are better.
- 3. He is using his his strength in Attention to aid in his learning. However, he learns very slowly.
- 4. The WISC has no areas of strength and does not explain the academic strengths
- 5. Comprehension & Word problems are very low. Has low Simultaneous & Successive processing.
- I see this as Successive and Simultaneous issue. Although Planning is also involved, he can't get to the place where he can recruit planning to implement a strategy - even when given pencil and paper as an aid.

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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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One of the great challenges in this world is knowing enough about a subject to think your right; but not enough about the subject to know your wrong!

Neil deGrasse Tyson

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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

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How and Why…

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

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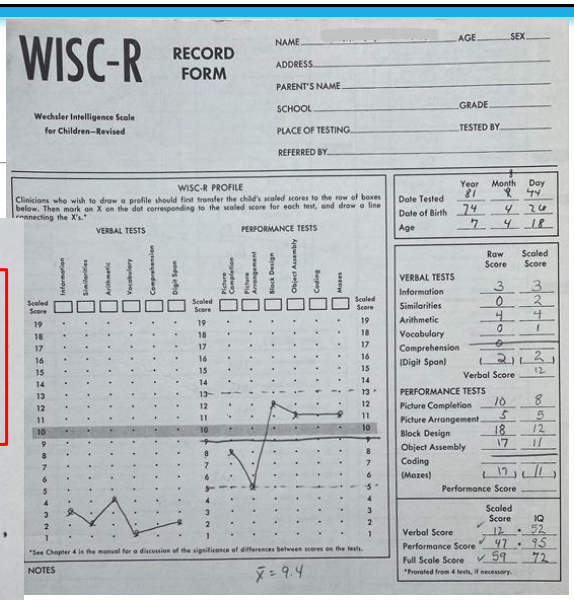
How and Why…

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.



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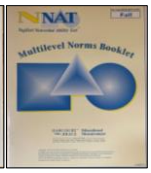
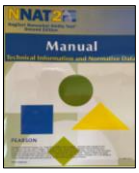
How and Why…

- 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)

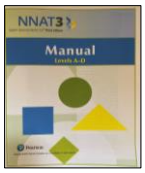
1985 MAT Short and Expanded Forms



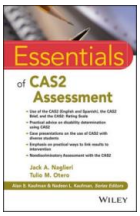
Naglieri Nonverbal Ability Test in 1997

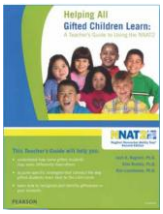


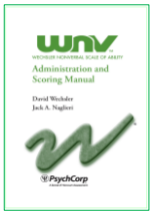
NNAT -2 published in 2008



NNAT -3 published in 2016







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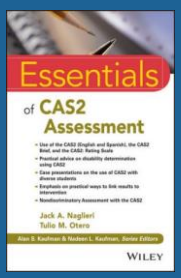
Naglieri & Otero (2017) on Fairness

We can and must do better



Traditional IQ tests which were originally devised to "aid in segregating and eliminating the mentally incompetent, classify men according to their mental ability, and assist in selecting competent men for responsible positions" (Yoakum, 1921, p. 19) are insufficient for the demands of today for several reasons. First, these tests were not built on any theory of intelligence which is critical for test development and puts undue responsibility on the user to determine what the scores mean. Second, the use of verbal and quantitative tests as measures of *ability* is hard to justify because the test questions are often virtually indistinguishable from questions on tests of *achievement*. Third, the fact that these IQ tests demand knowledge of English creates considerable problems for the assessment of those with limited familiarity with English. Fourth, traditional IQ tests also are ineffective for non-discriminatory assessment and yield inaccurately large racial and ethnic differences. Fifth, these tests have failed to yield profiles for students with

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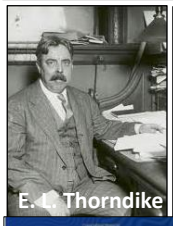
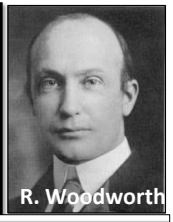
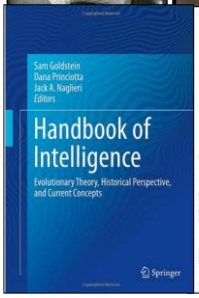
Why do we measure intelligence the way we do?

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

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Jack A. Naglieri

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

Context

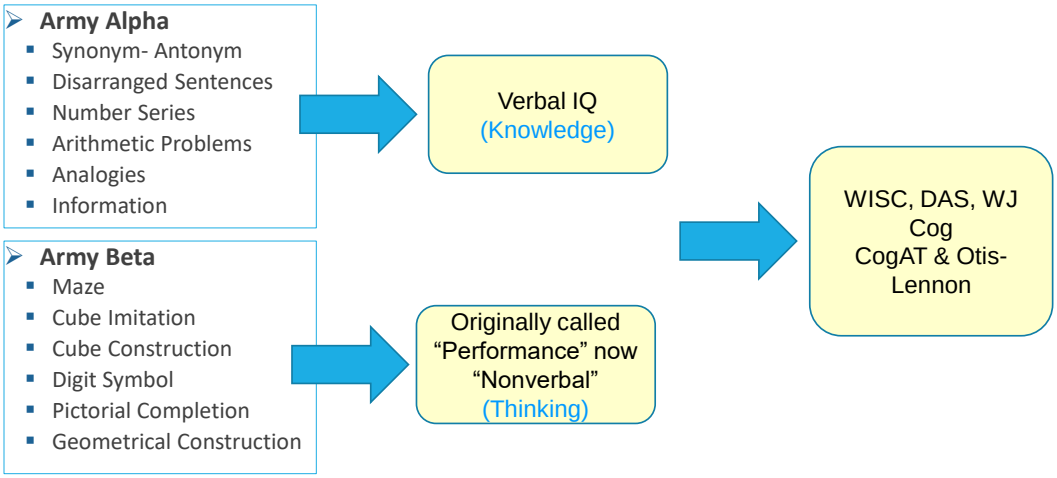
April 6, 1917, is remembered as the day the United States entered World War I. On that same day a group of psychologists held a meeting in Harvard University's Emerson Hall to discuss the possible role they could play with the war effort (Yerkes 1921). The group agreed that psychological knowledge and methods could be of importance to the military and utilized to increase the efficiency of the Army and Navy personnel. The group included Robert Yerkes, who was also the president of the American Psychological Association. Yerkes made an appeal to members of APA who responded by

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

The Alpha tests were designed to measure general information (e.g., how many months are

- 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



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Our Tests Demand Knowledge

Stanford-Binet 5	WISC-V	WJ-IV and Batería-IV (including Cross Battery)	K-ABC-II
• Verbal • Knowledge • Quantitative Reasoning • Vocabulary • Verbal Analogies	• Verbal Comprehension: Vocabulary, Similarities, Information & Comprehension • Fluid Reasoning: Figure Weights, Picture Concepts, Arithmetic	• Comprehension Knowledge: Vocabulary & General Information • Fluid Reasoning: Number Series & Concept Formation • Auditory Processing: Phonological Processing	• Knowledge / GC: Riddles, Expressive Vocabulary, Verbal Knowledge

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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)

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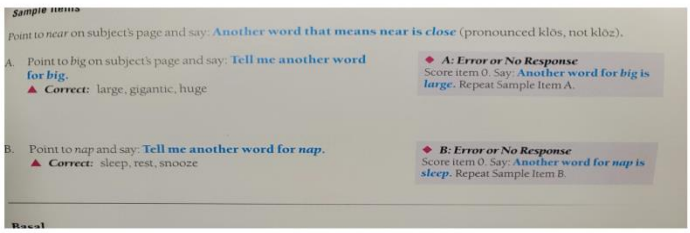
WJ-IV Items from Cognitive and Achievement Tests:

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

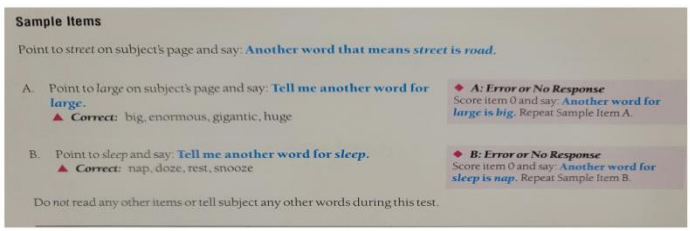
◆ ***A: Error or No Response***
Score item 0. Say: **Another word for *big* is *large*.** Repeat Sample Item A.

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

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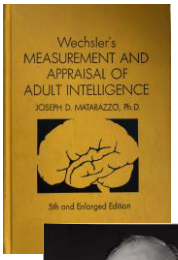
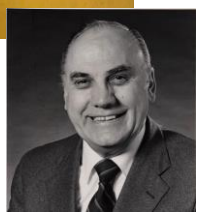
The Problem with Verbal and Quantitative tests

- 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) ?





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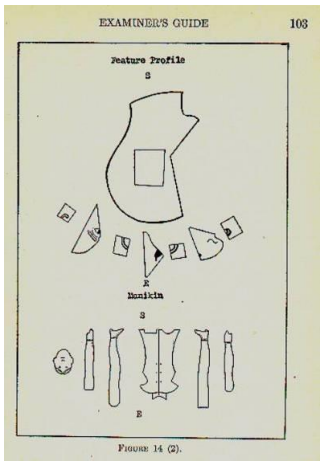
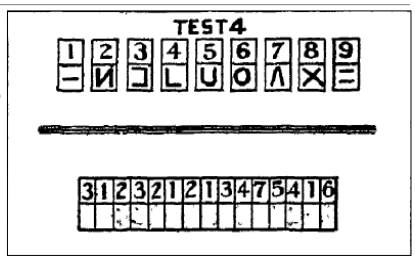
The US Army Beta Test (Nonverbal)



- Wechsler's Performance tests were taken from the Army Beta
- **BUT WHY were nonverbal test included?**



Test 7.—Digit Symbol

E. shows S. the record sheet, points to blank below 2 in the sample, then to symbol for 2 at top of page, writes in symbol, proceeds in the same way with the other parts of the sample, then gives S. pencil, points to space below 3 in the test, and nods affirmatively.

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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.

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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

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WE CAN DO BETTER

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Doing Better Requires a *Paradigm Shift*

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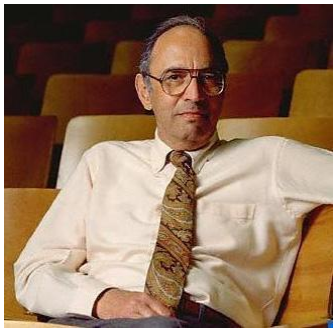
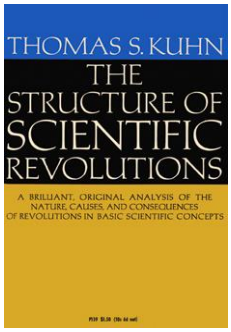
Paradigm Shift in Intelligence Theory

Thomas Khun





Changing Your Assumptions Will Change Your Mind. Go Beyond What You Were Taught And Examine The New.

A paradigm shift is a phase in which the underlying assumptions of the field are reexamined, and a new paradigm is established.

Moving away from the typical way of thinking and operationalizing intelligence to intelligence as neurocognitive processes, is that shift.

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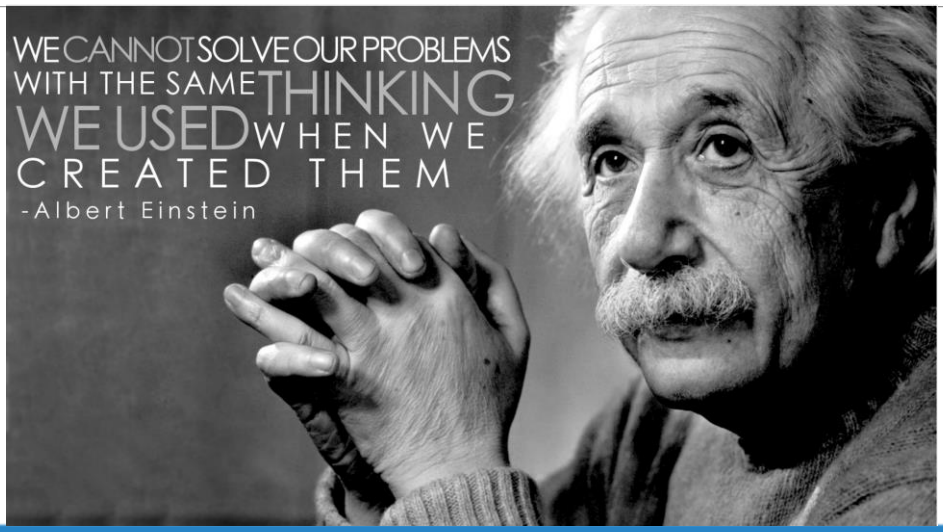
Your Thoughts and Questions



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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

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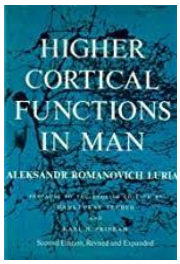
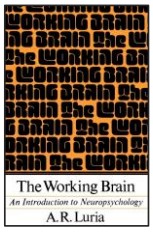
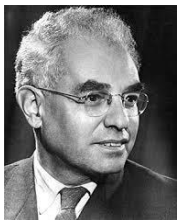
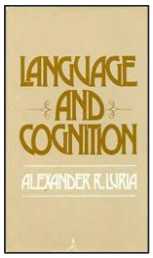
PASS Neurocognitive Theory









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

PASS = 'basic psychological processes'

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

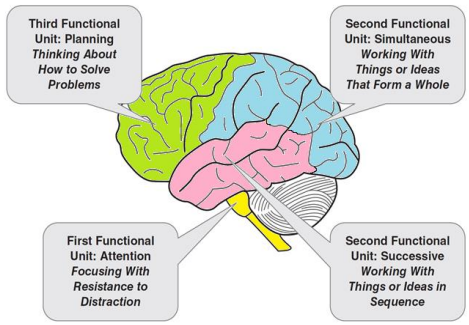


Figure 1.2 Three Functional Units and Associated Brain Structures

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.

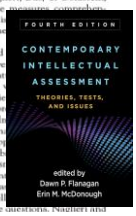
CHAPTER 6

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 measures somewhat extensively in Chapter 15 of this book, but here we focus on the PASS theory and the research on these measures are based.

The PASS theory and neurocognitive perspective from that of traditional bat in part, subtests requiring knowledge). These batteries the Army mental testing pr akum and Yerkes (1920) alt PASS theory, as operationa CAS2, has created an opp field of intelligence and ab emphasizing (1) that a test be based on a *theory* of int the test should measure ba cesses defined by the intell test, not the content of the questions. Naglieri and



28 Cognitive Assessment System: Redefining Intelligence From a Neuropsychological Perspective

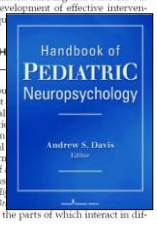
Jack A. Naglieri and Tulio M. Otero

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 interventions and address the qu

FROM NEUROPSYCH TO ASSESSMENT

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



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PASS Theory Based on Brain Function – Planning

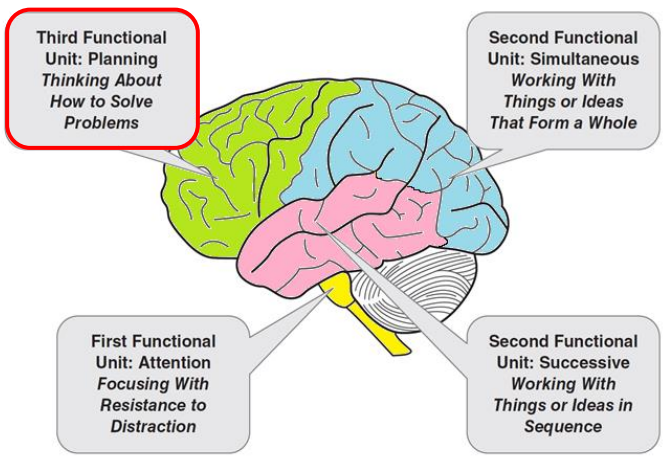

Figure 1.2 Three Functional Units and Associated Brain Structures

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

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CAS2: Rating Scale Planning

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

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

___ + ___ + ___ + ___ + ___ = ☐

Planning Raw Score

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Planning Subtests

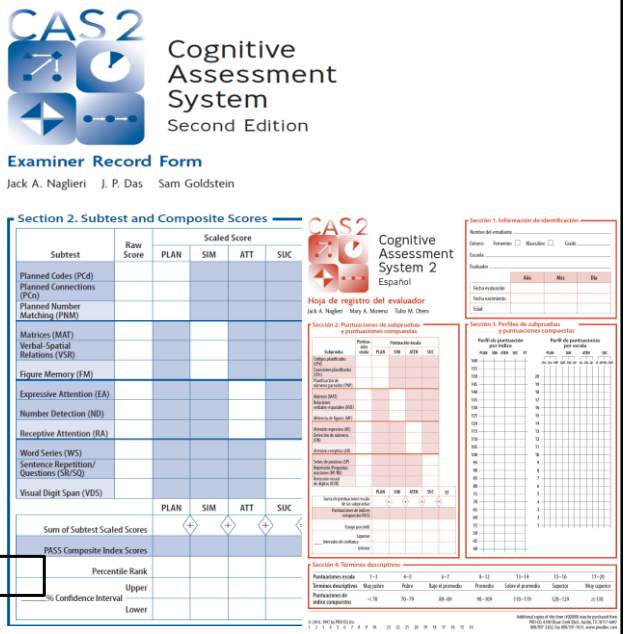
Planned Codes

Planned Connections

1 2 4 3

Planned Number Matching

5176	5761	5167	1576	5176	1567



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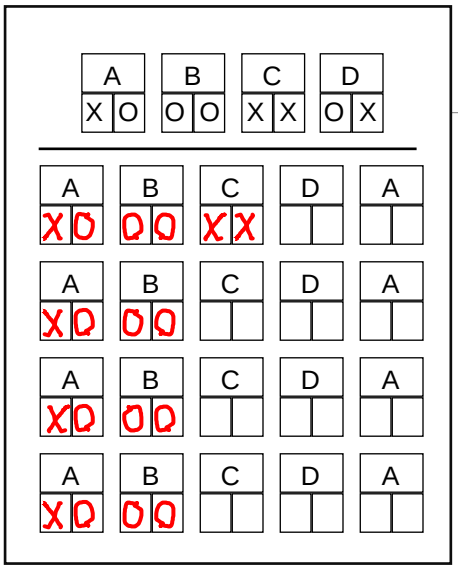

Planned Codes Page 1

- 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"

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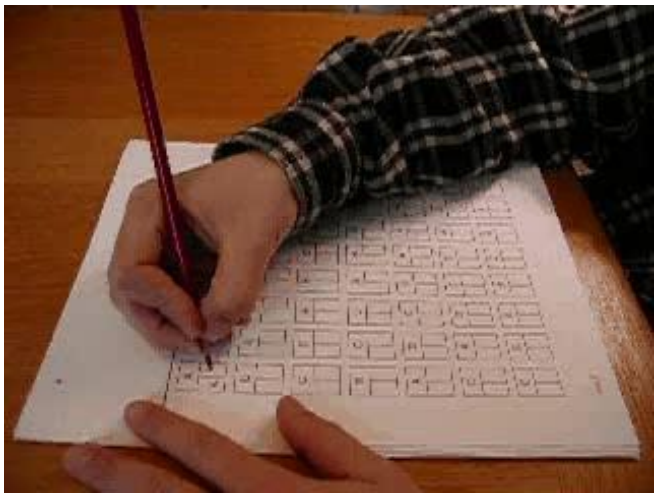
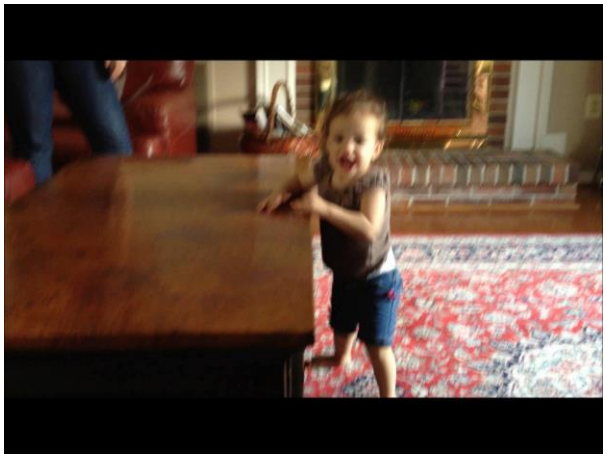
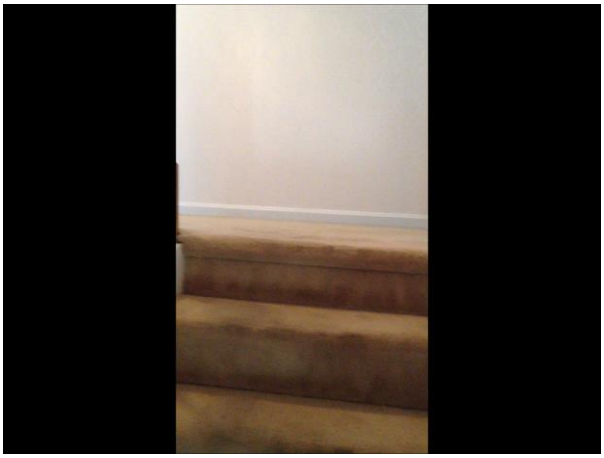
Planned Codes Page 2 Jack Jr age 10



A 13 month old's Plan

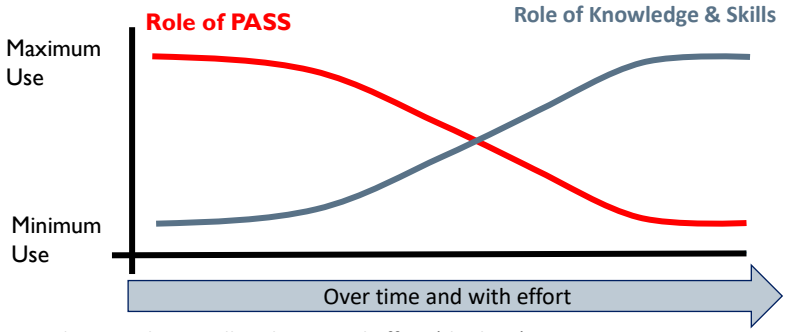


At 19 months Planning & Knowledge



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)

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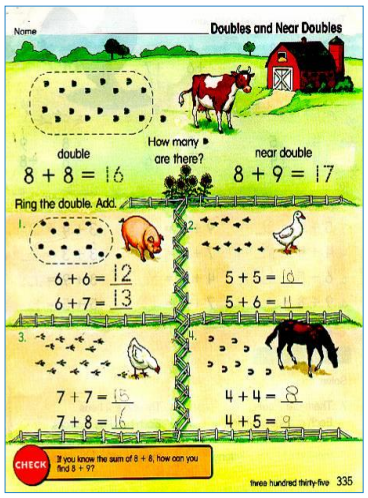
Math strategies stimulate thinking



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.

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Answering the Question: "Why the student struggles?"

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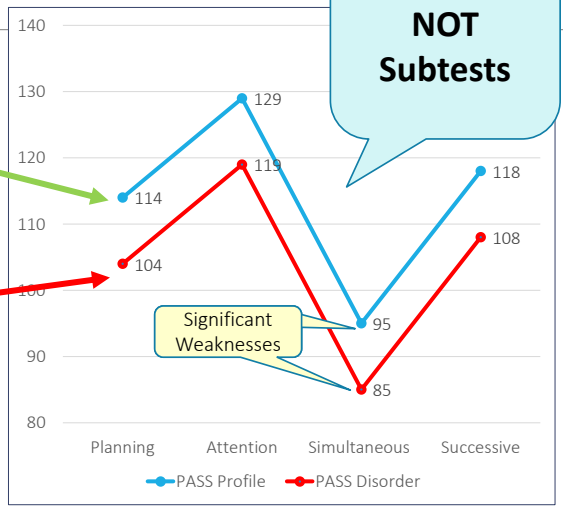
How to Determine a Disorder

- 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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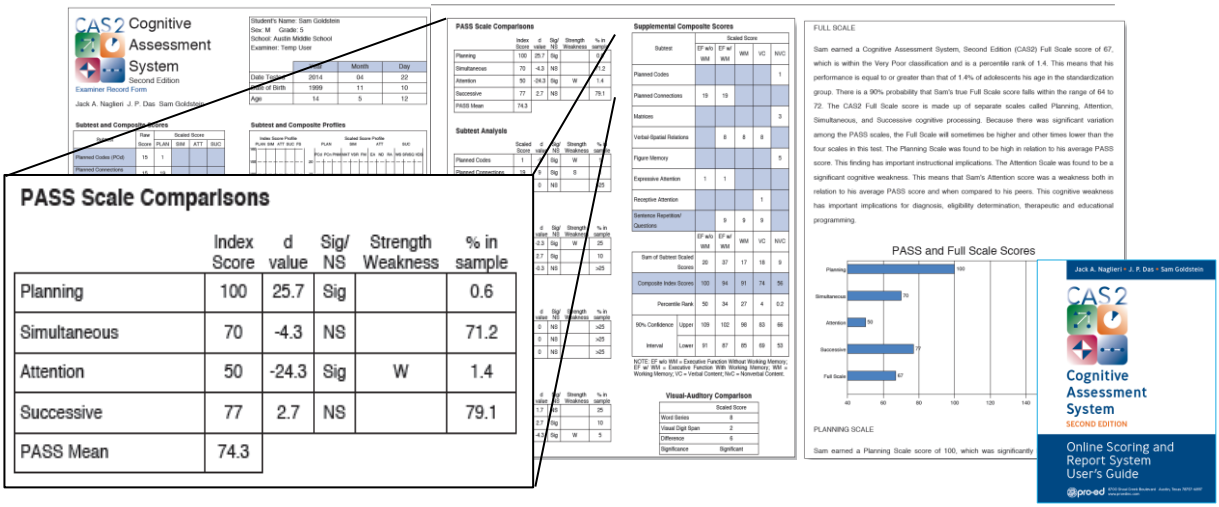
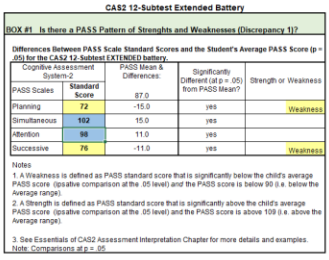
Online Scoring and Report Writer



CAS2 Achievement Analyzer for PSW



CAS2 12-Subtest Extended Battery

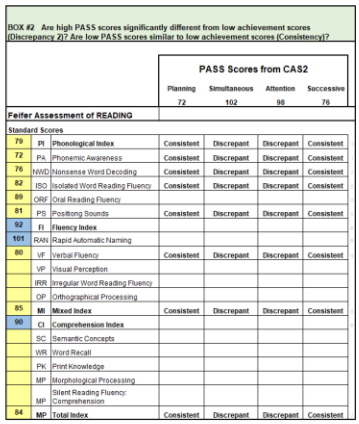
BOX #1 Is there a PASS Pattern of Strenghts and Weaknesses (Discrepancy 1)?

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

Cognitive Assessment System-2 PASS Scales	Standard Score	PASS Mean & Differences: 87.0	Significantly Different (at p = .05) from PASS Mean?	Strength or Weakness
Planning	72	-15.0	yes	Weakness
Simultaneous	102	15.0	yes	
Attention	98	11.0	yes	
Successive	76	-11.0	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

Note: These **FREE** analyzers can be downloaded from www.jacknaglieri.com

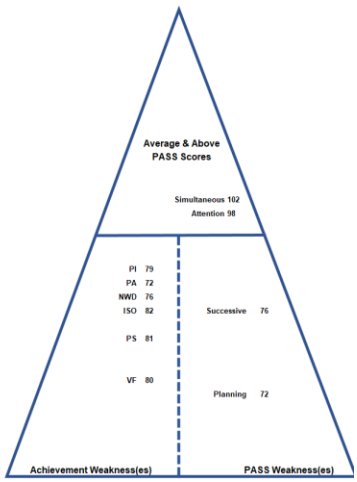


BOX #2 Are high PASS scores significantly different from low achievement scores (Discrepancy 2)? Are low PASS scores similar to low achievement scores (Consistency)?

PASS Scores from CAS2: Planning 72 | Simultaneous 102 | Attention 98 | Successive 76

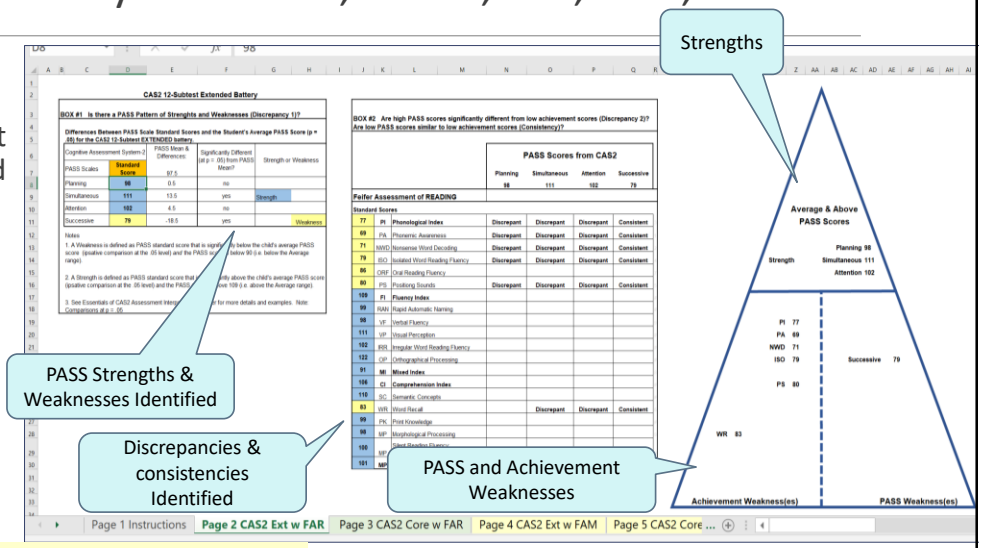
Feifer Assessment of READING

Standard Scores						
79	PI	Phonological Index	Consistent	Discrepant	Discrepant	Consistent
72	PA	Phonemic Awareness	Consistent	Discrepant	Discrepant	Consistent
76	NWD	Nonsense Word Decoding	Consistent	Discrepant	Discrepant	Consistent
82	ISO	Isolated Word Reading Fluency	Consistent	Discrepant	Discrepant	Consistent
89	ORF	Oral Reading Fluency				
81	PS	Positiong Sounds	Consistent	Discrepant	Discrepant	Consistent
92	FI	Fluency Index				
101	RAN	Rapid Automatic Naming				
80	VF	Verbal Fluency	Consistent	Discrepant	Discrepant	Consistent
	VP	Visual Perception				
	IRR	Irregular Word Reading Fluency				
	OP	Orthographical Processing				
85	MI	Mixed Index	Consistent	Discrepant	Discrepant	Consistent
90	CI	Comprehension Index				
	SC	Semantic Concepts				
	WR	Word Recall				
	PK	Print Knowledge				
	MP	Morphological Processing				
	MP	Silent Reading Fluency: Comprehension				
84	MP	Total Index	Consistent	Discrepant	Discrepant	Consistent



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

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



FREE – on www.jacknaglieri.com

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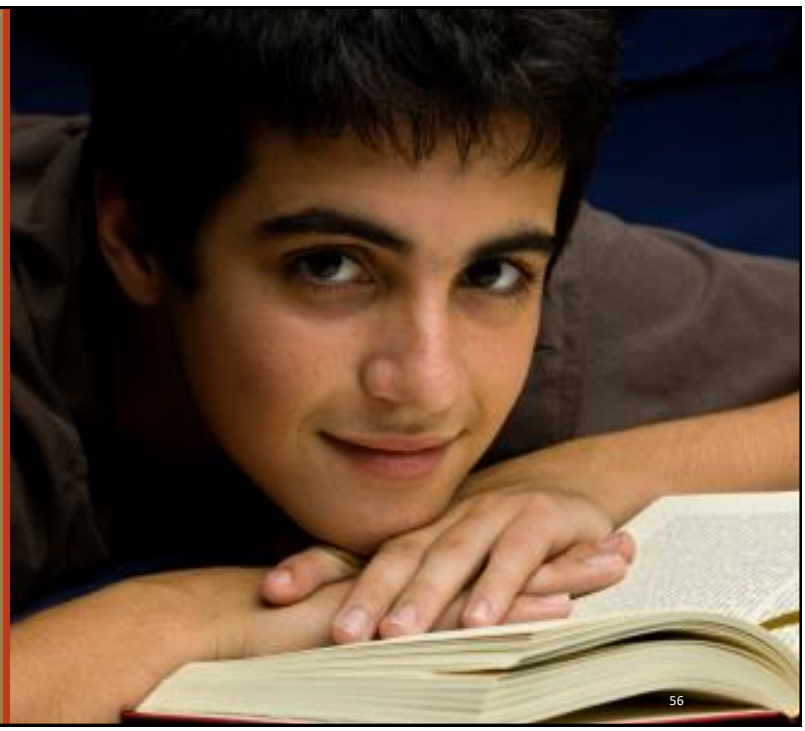
The Case of Rocky

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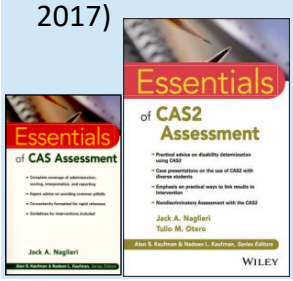
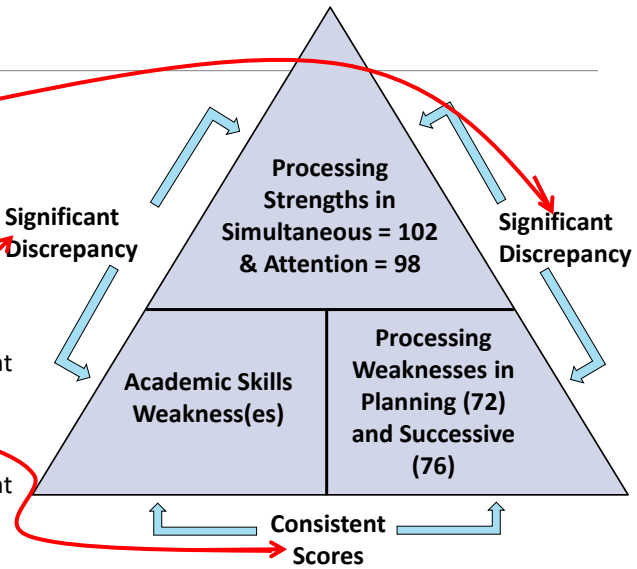
- The Discrepancy Consistency Method (DCM) was first introduced in 1999 (most recently in 2017)



- 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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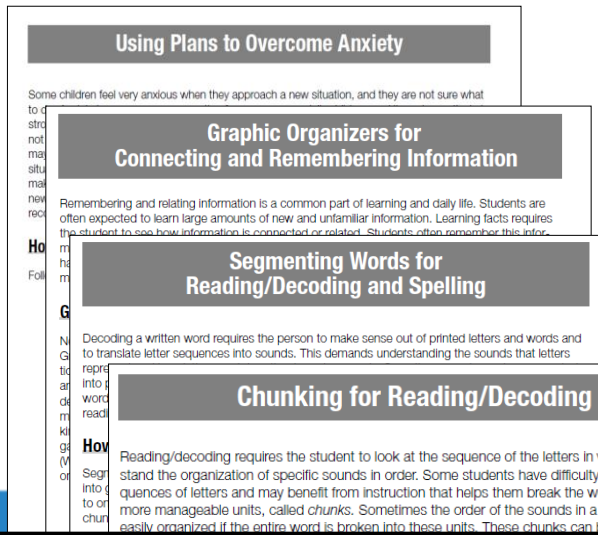
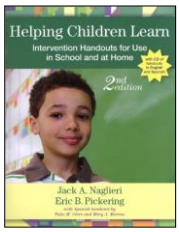
Interventions for Rocky



- 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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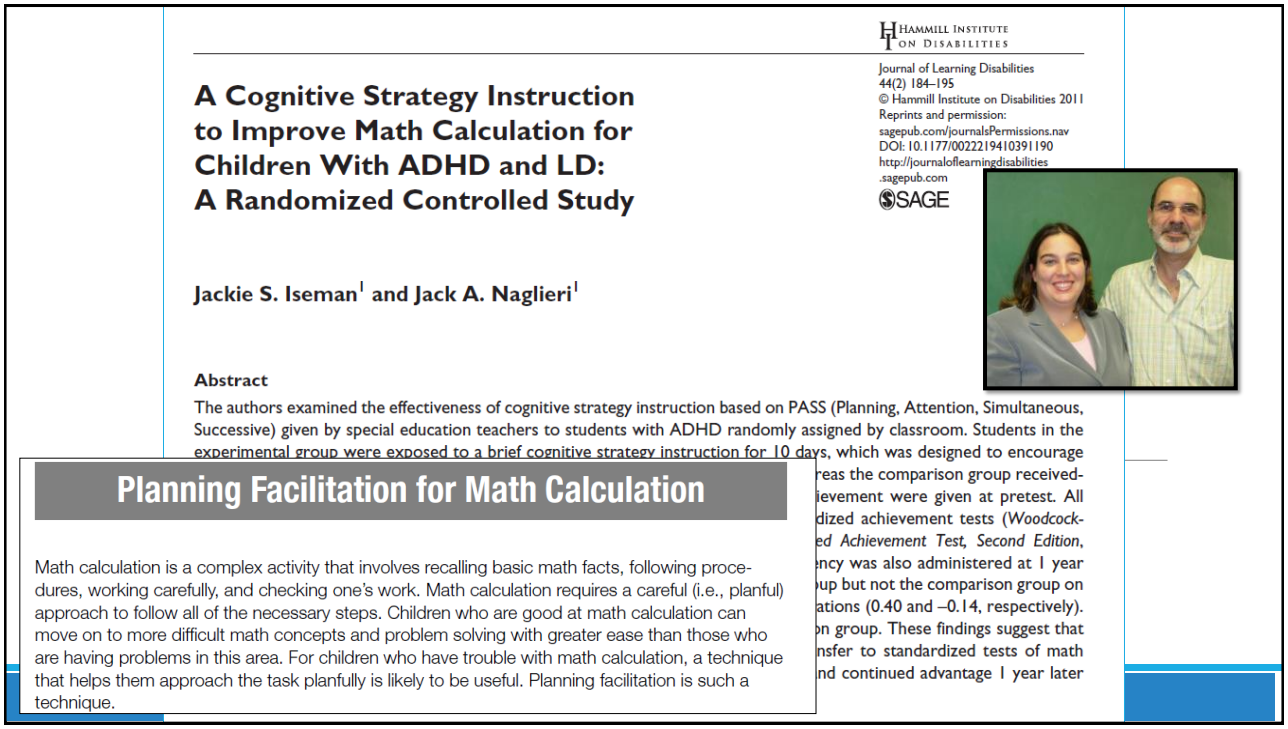

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Instructional Sessions

- 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"

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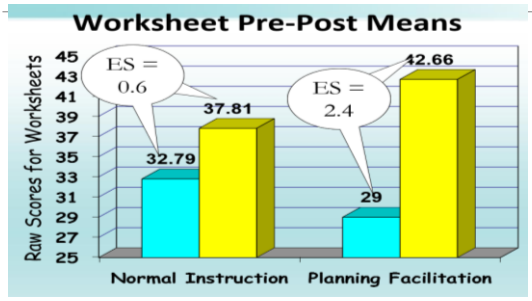
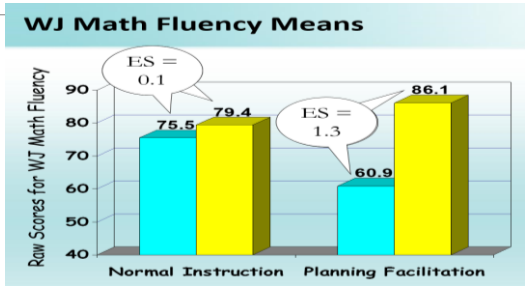
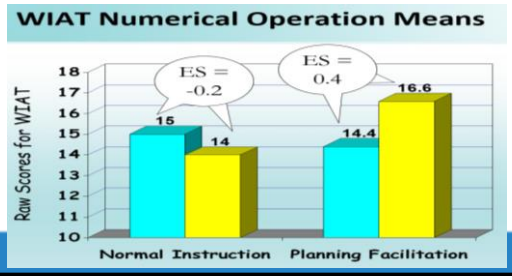
Pre-Post Means and Effect Sizes for the Students with LD and ADHD







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

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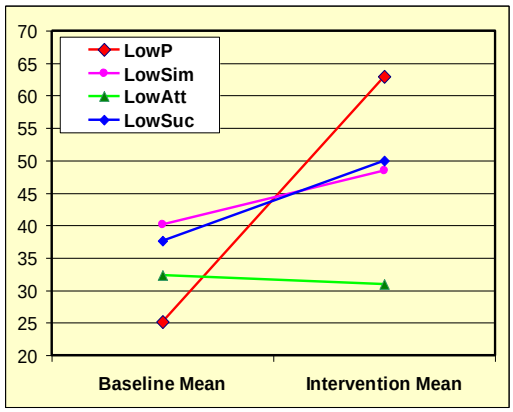
Pre-Post Changes for the Students with LD and ADHD

- 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



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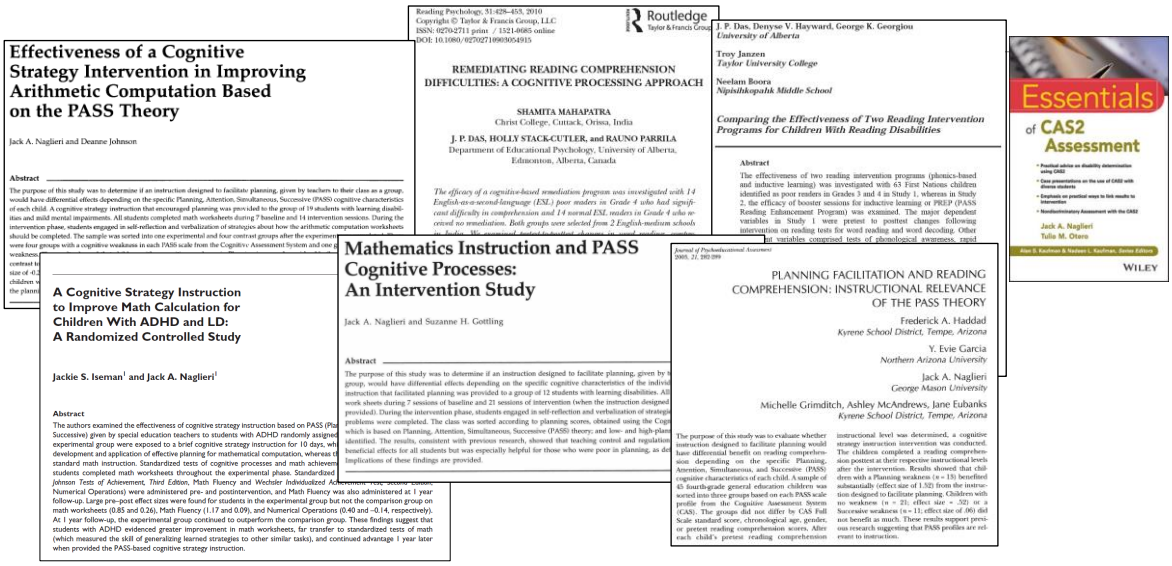
Summary of PASS Intervention Research in Essentials of CAS2



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Jessica

- Previous diagnoses of ADHD, ODD, Anxiety and Depression.
- Received OT since 1st grade.
- Since 3rd grade the OT focus was helping the teacher to teach strategies for self monitoring, attention, visual sequencing, and organization
- Problems following verbal directions, inefficient work, struggles to work in a noisy setting, is distractable, fiddles with objects, inflexible, and frustrates easily.
- She receives speech and language services for language processing issues.
- Currently takes medications to manage her diagnoses, she takes Clonidine 0.2 mg to help with sleep and anger issues. She also takes Ritalin 40 mg ER in the am and 10 mg booster at lunch time.

66

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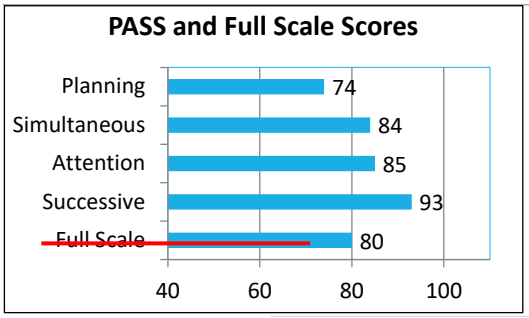
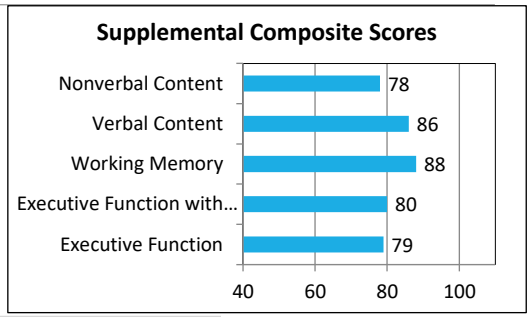
Jessica 4th grade





Composite/Subtest	Standard Scores	Percentile Rank	Descriptive Category
Reading Composite	74	4	Below average
Letter & Word Recognition	73	4	Below average
Reading Comprehension	76	5	Below average
Math Composite	68	2	Low
Math Concepts & Applications	65	1	Low
Math Computation	74	4	Below average
Written Language Composite	-	-	-
Spelling	66	1	Low

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PASS and KTEA-III Score Analyzer

CAS2 12-Subtest Extended Battery

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

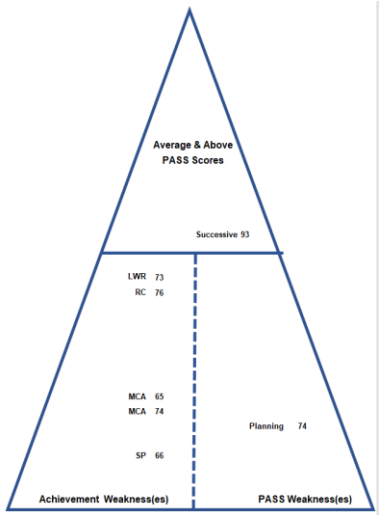
Differences Between PASS Scale Standard Scores and the Student's Average PASS Score (p = .05) for the CAS2 12-Subtest EXTENDED battery.

Cognitive Assessment System-2 PASS Scales	Standard Score	PASS Mean & Differences: 84.0	Significantly Different (at p = .05) from PASS Mean?	Strength or Weakness
Planning	74	-10.0	yes	Weakness
Simultaneous	84	0.0	no	
Attention	85	1.0	no	
Successive	93	9.0	no	

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

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

			PASS Scores from CAS2			
			Planning 74	Simultaneous 84	Attention 85	Successive 93
Kaufman Test of Educational Achievement 3rd Edition						
Standard Scores						
73	LWR	Letter & Word Recognition	Consistent	Consistent	Consistent	Discrepant
76	RC	Reading Comprehension	Consistent	Consistent	Consistent	Discrepant
	NWD	nonsense Word Decoding				
	PP	Phonological Processing				
	WRF	Word Recognition Fluency				
	DF	Decoding Fluency				
	SRF	Silent Reading Fluency				
	RV	Reading Vocabulary				
65	MCA	Math Concepts and Applications	Consistent	Consistent	Consistent	Discrepant
74	MCA	Math Computation	Consistent	Consistent	Consistent	Discrepant
	MF	Math Fluency				
	WE	Written Expression				
66	SP	Spelling	Consistent	Consistent	Consistent	Discrepant
	WF	Writing Fluency				
	LC	Listening Comprehension				
	OE	Oral Expression				
	AF	Associational Fluency				
	ONF	Object Naming Facility				
	LNF	Letter Naming Facility				



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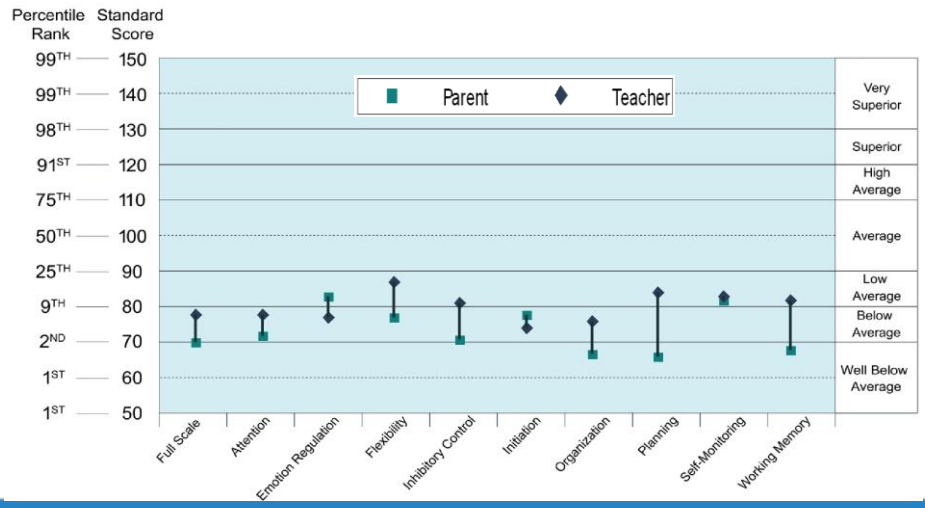
Comprehensive Executive Function Inventory Comparative Results



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Impressions

- This case is an example of the behaviors (CEFI) that predict a low planning score on CAS2.
- Based on the data and teacher reports/observations, I see her low performance is driven by Low planning, EF, and Attention. She can't get to the point where she can fully recruit Simultaneous and Successive processes.

70

70

PASS Theory Based on Brain Function -– Attention

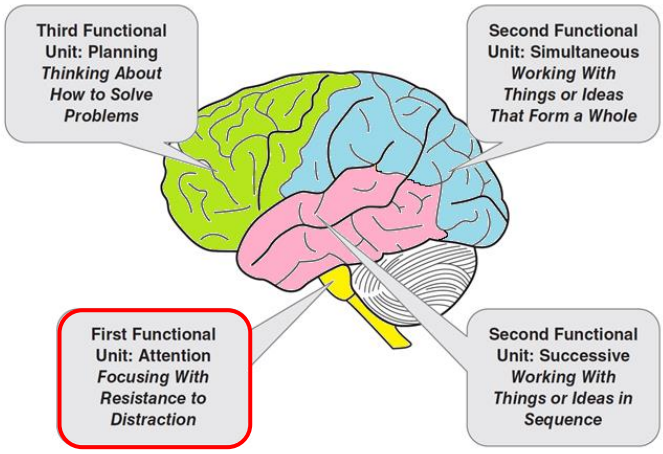

Figure 1.2 Three Functional Units and Associated Brain Structures

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

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Attention Subtests

Expressive Attention

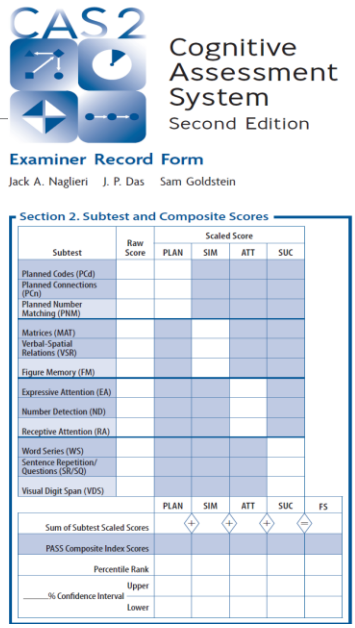
Number Detection

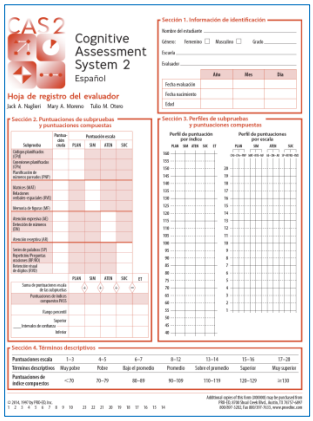
Find the numbers that look like this: 1 2

1 5 1 4 2 2 5

Receptive Attention

N n	T r	b t
T R	n b	A a





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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

RED	RED	BLUE
YELLOW	YELLOW	RED

ROJO	AZUL	VERDE	AMARILLO
AMARILLO	VERDE	ROJO	AZUL

73

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

leave school

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

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

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

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

11. 3:15 p.m.
12. 6:22 p.m.
13. 3:50 p.m.

Attention

READING COMPREHENSION IS DIFFICULT BECAUSE OF THE SIMILARITY OF THE OPTIONS

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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

75

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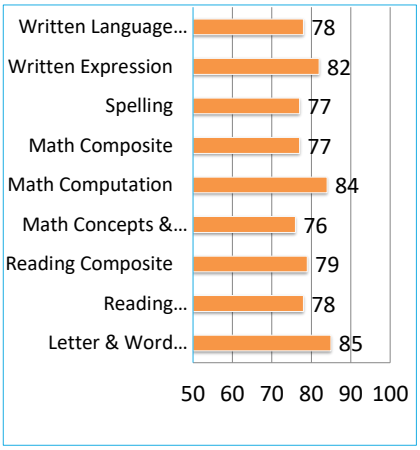
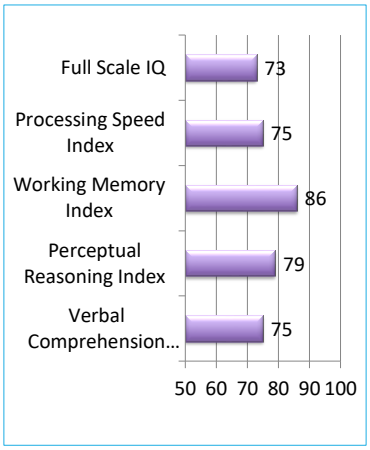
WISC-IV ASSESSMENT

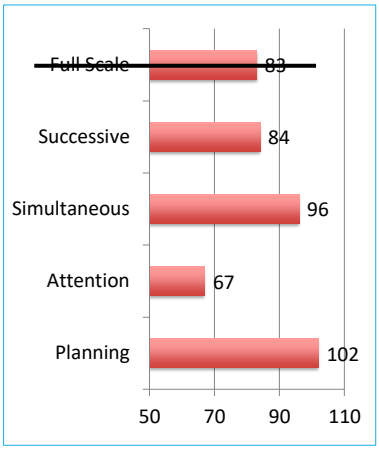
KTEA2



WISC-IV



CAS2



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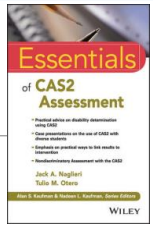
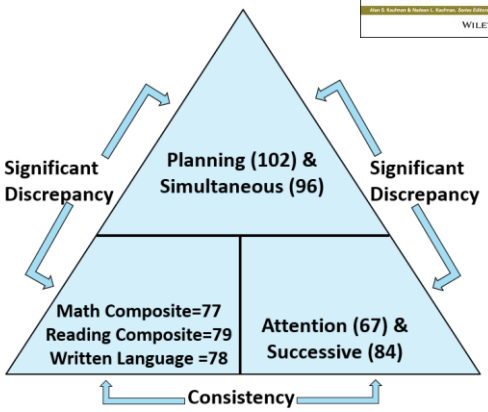
Alejandro and PASS (by Dr. Otero)



- Alejandro is not a slow learner.
- He has good processing scores:
  - Simultaneous = 96 and Planning = 102
- He has a "disorder in one or more of the basic psychological processes"
  - Attention = 67 and Successive = 84
- Using the Discrepancy Consistency Method (1999, 2017) he meets criteria for SLD (see Naglieri & Otero, 2017).



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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)

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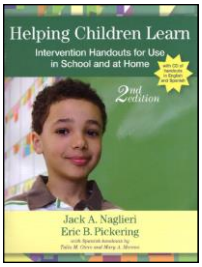
Be Intentional and Transparent

- Give Alejandro the PASS handouts
  - *"The test showed that your brain is strong in seeing the BIG PICTURE (Simultaneous Processing) and*
  - *recognizing sequences. (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 PLANS (PFC).
  - We're going to work on using your strengths and helping you develop your PLANNING skills.



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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

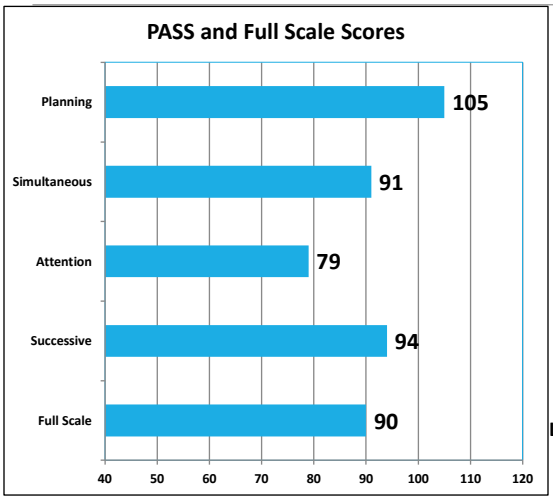
Jose also receives ELL services and his current ACCESS scores are as follows: Listening 5.8, Speaking 1.9, Reading 2.8, Writing 3.5.

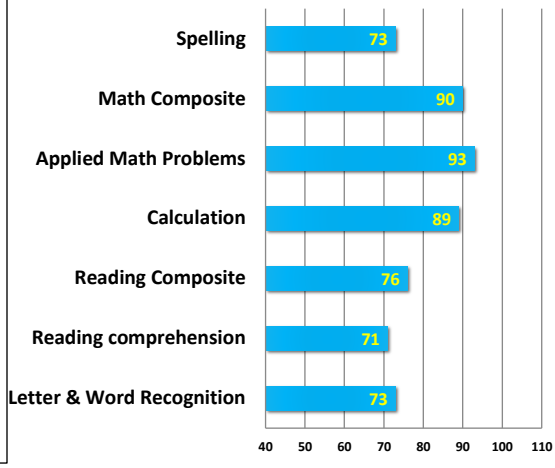
2018 WISC5 Spanish : VCI 55, VS= 92, FR= 91, WM 86, PS 91

80

80

CAS2 and KTEA-III Scores (January 2020)





81

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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).

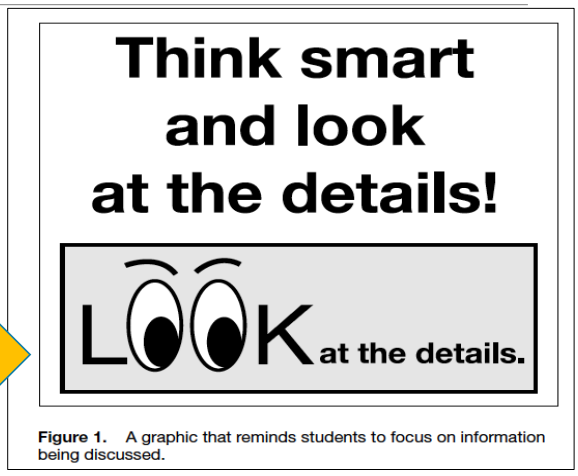

Figure 1. A graphic that reminds students to focus on information being discussed.

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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PASS Theory Based on Brain Function - Simultaneous Processing

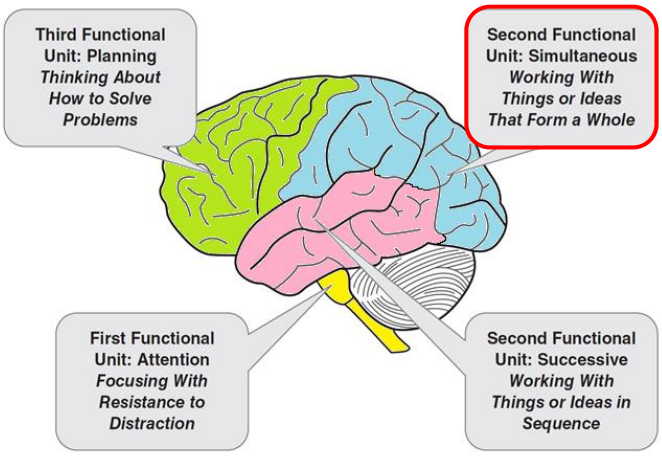

Figure 1.2 Three Functional Units and Associated Brain Structures

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

84

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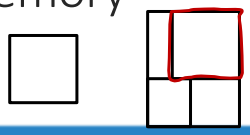
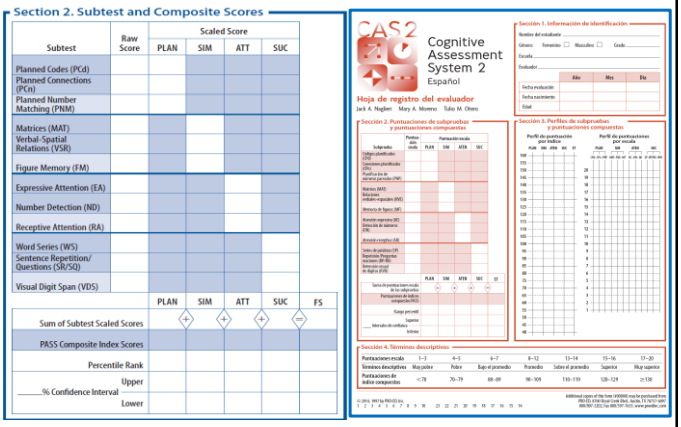
Simultaneous Subtests

Matrices

Verbal Spatial Relations

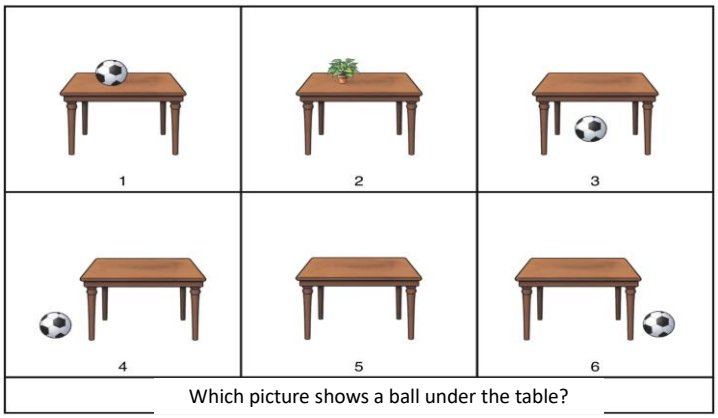
Figure Memory





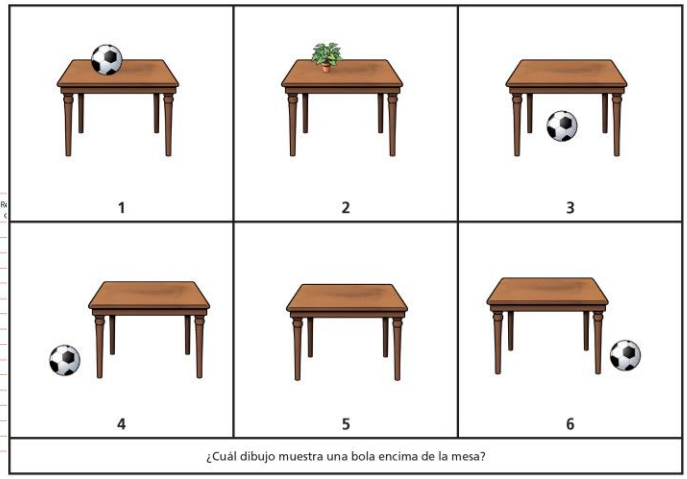
PASS Theory: Simultaneous

- **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



Cas2 Español

- Verbal Spatial Relations subtest



Example

87

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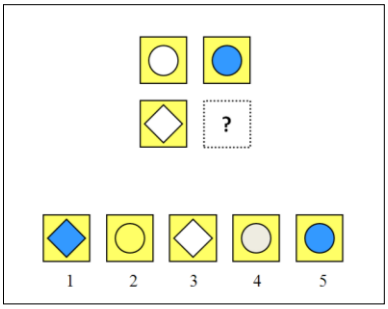
Thinking vs Knowing

Solving these analogies demands the same kind of thinking



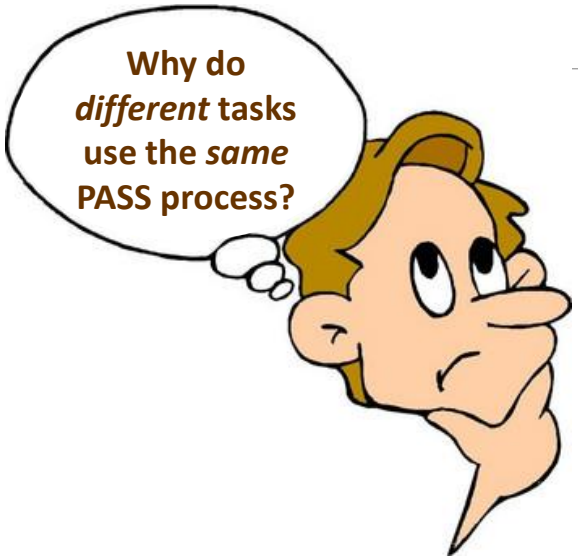
Girl is woman as boy is to _____?

3 is to 6 as 4 is to _____?

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

88

88

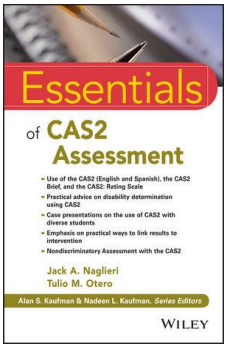


And Consider this…

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

Case: Neil (Naglieri & Feifer, 2017, Intervention Chapter 5)

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



Case: Neil 4th grade –CAS2

CAS-2	STANDARD SCORE	RANGE
Planning:	**94**	**Average**
Attention:	**98**	**Average**
Simultaneous the ability to reason and problem solve by integrating separate elements into a conceptual whole, and often requires strong visual-spatial problem solving skills.	**74**	**Very Low**
Successive	**90**	**Average**
~~**CAS-2 Full SCale**~~	~~**89**~~	~~**Below Average**~~

FAR index	Standard score
Phonological Index	90
Fluency Index	73
Mixed Index	81
Comprehension Index	97
FAR Total Index	**84**

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Case: Neil- FAR Subtest Interpretation

KEY INTERPRETATION	Score	Percentile	Descriptor
Isolated Word Reading Fluency – the student reads a list of phonologically regular words arranged in order of increasing difficulty in 60 seconds.	86	18%	Below Average
Irregular Word Reading Fluency – the student reads a list of phonologically irregular words arranged in order of increasing difficulty in 60 seconds.	71	3%	Moderately Below Average

➢He can apply decoding skills to familiar words but lacks an effective strategy when reading phonologically irregular words.

KEY INTERPRETATION	Score	Percentile	Descriptor
Visual Perception – requires the student to identify letters printed backwards that are embedded within an array of words. A timed measure of text perception.	75	5%	Moderately Below Average
Orthographic Processing – the student must recall a group of letters in the correct order that are embedded within a target word presented for 1 second. A measure of orthographic working memory skills.	72	4%	Moderately Below Average

➢He struggles with both text perception, as well as orthographic processing, both of which are hindering his reading pace and fluency

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Case: FAM Scores for Neil

FAM Index	Standard Score	Percentile	Range
Procedural Index – measures the ability to count, order, and/or sequence numbers.	94	34%	Average
Verbal Index – measures the ability to automatically identify numbers, retrieve facts, and understand math terminology.	86	18%	Below Average
Semantic Index – measures the ability to determine magnitude representations, estimation, pattern recognition, and quantitative reasoning.	72	3%	Moderately Below Average
FAM TOTAL INDEX	79	8%	Moderately Below Average

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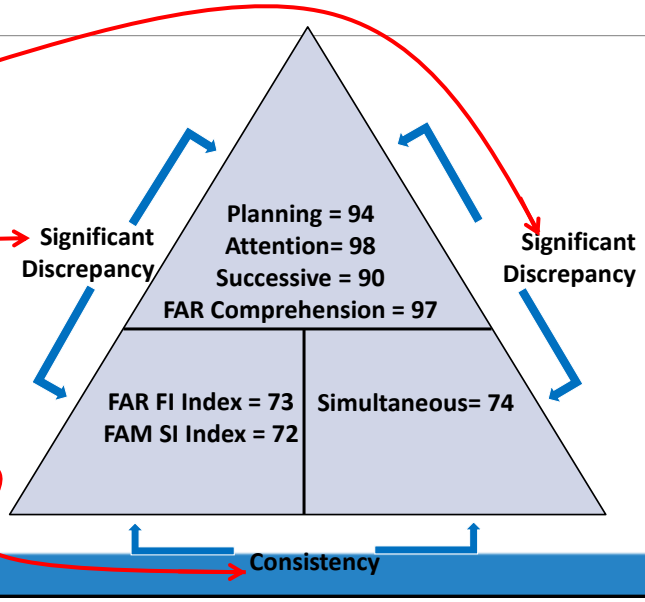
Case: Discrepancy Consistency for Neil

- 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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Case: FAM Report Writer
Websites and Apps

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

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

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

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

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

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

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

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

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

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

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PASS Theory Based on Brain Function – Successive Processing

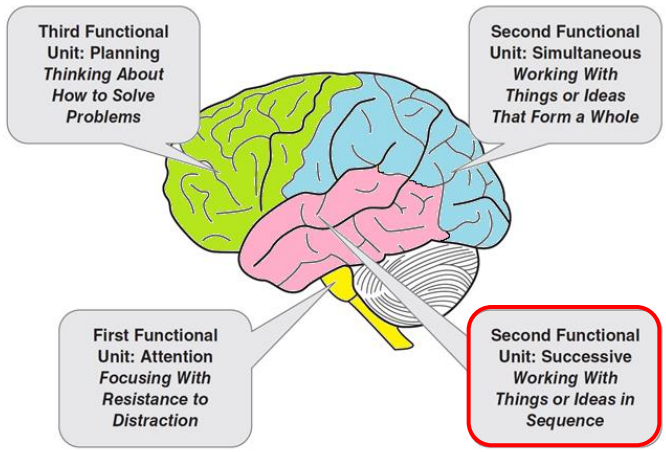

Figure 1.2 Three Functional Units and Associated Brain Structures

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

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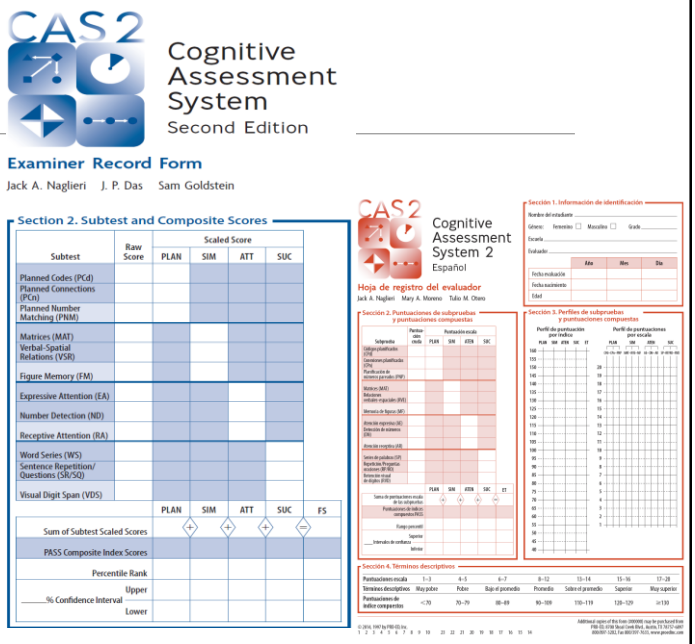
Successive Subtests

Word Series

Sentence Repetition or Sentence Questions

Visual Digit Span


CAS 2 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					
Upper ___% Confidence Interval					
Lower					

CAS 2 Cognitive Assessment System 2 Español

Hoja de registro del evaluador

Jack A. Naglieri Mary A. Moreno Tulio M. Otero

Sección 1. Información de identificación

Sección 2. Puntuaciones de subpruebas y puntuaciones compuestas

Sección 3. Perfiles de subpruebas y puntuaciones compuestas

Sección 4. Términos descriptivos

Puntuaciones escala	1–3	4–5	6–7	8–12	13–14	15–16	17–28
Términos descriptivos	Muy pobre	Pobre	Bajo el promedio	Promedio	Sobre el promedio	Superior	Muy superior
Puntuaciones de índice compuestos	<70	70–79	80–89	90–109	110–119	120–129	≥130

97

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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

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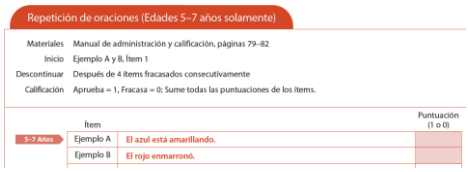
Successive and Syntax

- Sentence Repetition
  - Child repeats sentences exactly as stated by the examiner such as:
  - ***The red greened the blue with a yellow.***

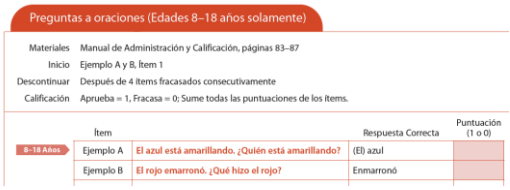


Repetición de oraciones (Edades 5–7 años solamente)

Materiales	Manual de administración y calificación, páginas 79–82
Inicio	Ejemplo A y B, Ítem 1
Descontinuar	Después de 4 ítems fracasados consecutivamente
Calificación	Aprueba = 1, Fracasa = 0; Sume todas las puntuaciones de los ítems.

	Ítem		Puntuación (1 o 0)
5–7 Años	Ejemplo A	El azul está amarillando.	
	Ejemplo B	El rojo enmarronó.	

- 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?***



Preguntas a oraciones (Edades 8–18 años solamente)

Materiales	Manual de Administración y Calificación, páginas 83–87
Inicio	Ejemplo A y B, Ítem 1
Descontinuar	Después de 4 ítems fracasados consecutivamente
Calificación	Aprueba = 1, Fracasa = 0; Sume todas las puntuaciones de los ítems.

	Ítem		Respuesta Correcta	Puntuación (1 o 0)
8–18 Años	Ejemplo A	El azul está amarillando. ¿Quién está amarillando?	(El) azul	
	Ejemplo B	El rojo emarronó. ¿Qué hizo el rojo?	Enmarronó	

CAS2: Rating Scale Successive

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

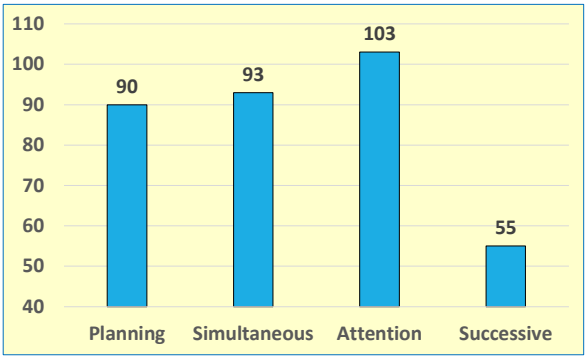
During the past month, how often did the child or adolescent . . .	Never	Rarely	Sometimes	Frequently	Always
31. recall a phone number after hearing it?	0	1	2	3	4
32. remember a list of words?	0	1	2	3	4
33. sound out hard words?	0	1	2	3	4
34. correctly repeat long, new words?	0	1	2	3	4
35. remember how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

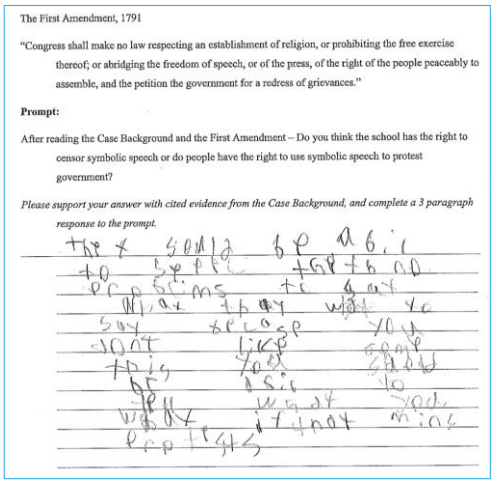
___ + ___ + ___ + ___ + ___ = ☐

Successive Raw Score

PASS and Handwriting

- Acquisition of handwriting demands Successive processing




The First Amendment, 1791

"Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press, of the right of the people peaceably to assemble, and the petition the government for a redress of grievances."

Prompt:

After reading the Case Background and the First Amendment – Do you think the school has the right to censor symbolic speech or do people have the right to use symbolic speech to protest government?

Please support your answer with cited evidence from the Case Background, and complete a 3 paragraph response to the prompt.

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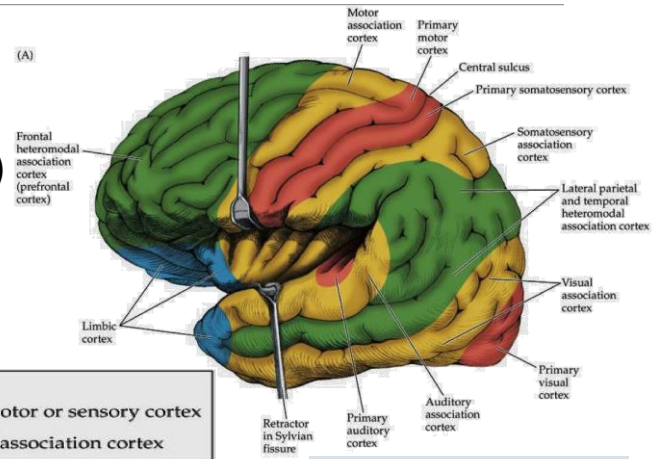
Heteromodal Association Cortex (Goldberg, 2006)

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



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Case of Paul: gr. 4 Dyslexia (Steve 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

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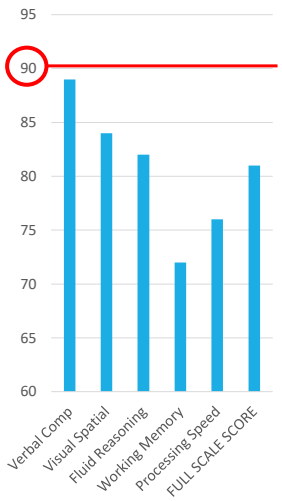
Paul – age 9 years

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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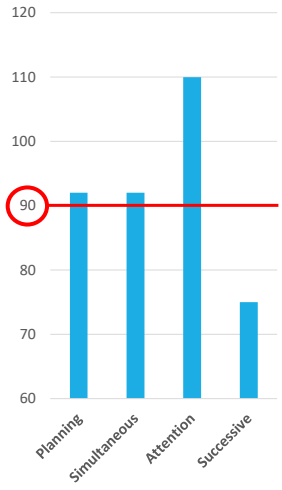
Paul – age 9 years

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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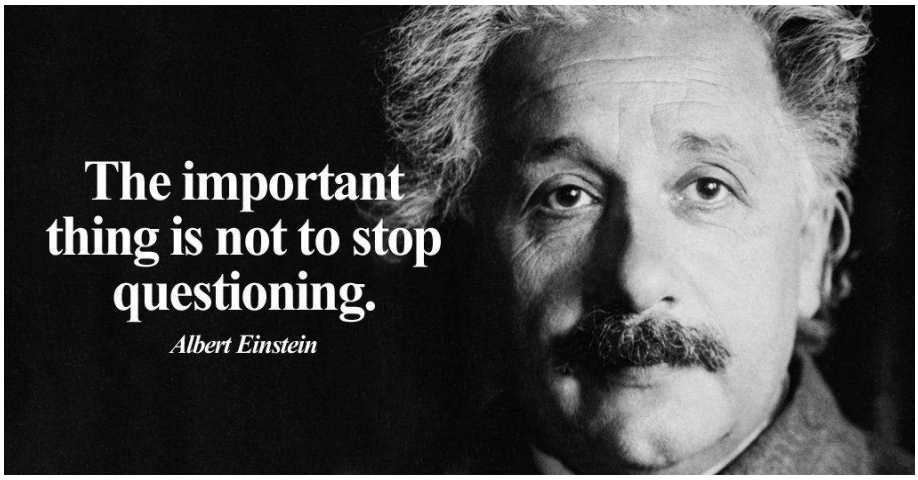
Your thoughts and questions…



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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

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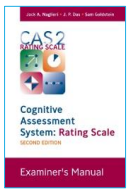
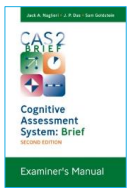
PASS Comprehensive System

(Naglieri, Das, & Goldstein, 2014)

- **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)	**CAS2 Brief** (4 subtests 20 minutes)	**CAS2 Core** (8 subtests 40 minutes)	**CAS2 Extended** (12 subtests 60 minutes)
Total Score Planning Simultaneous Attention Successive	Total Score Planning Simultaneous Attention Successive	Full Scale Planning Simultaneous Attention Successive	Full Scale Planning Simultaneous Attention Successive Supplemental Scales Executive Function Working Memory Verbal / Nonverbal Visual / Auditory Speed / Fluency





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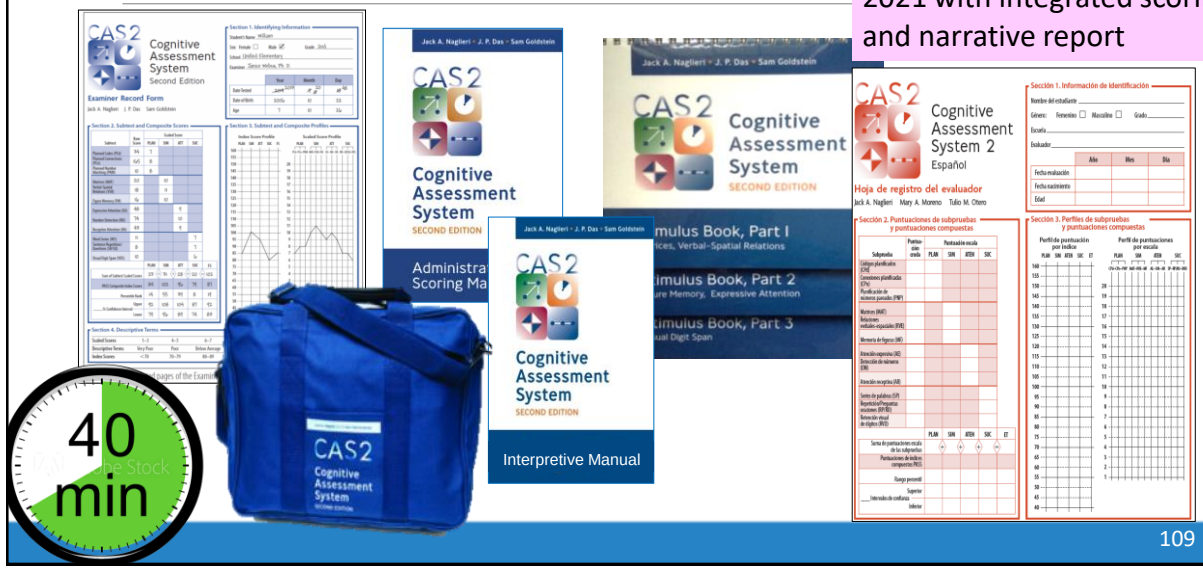
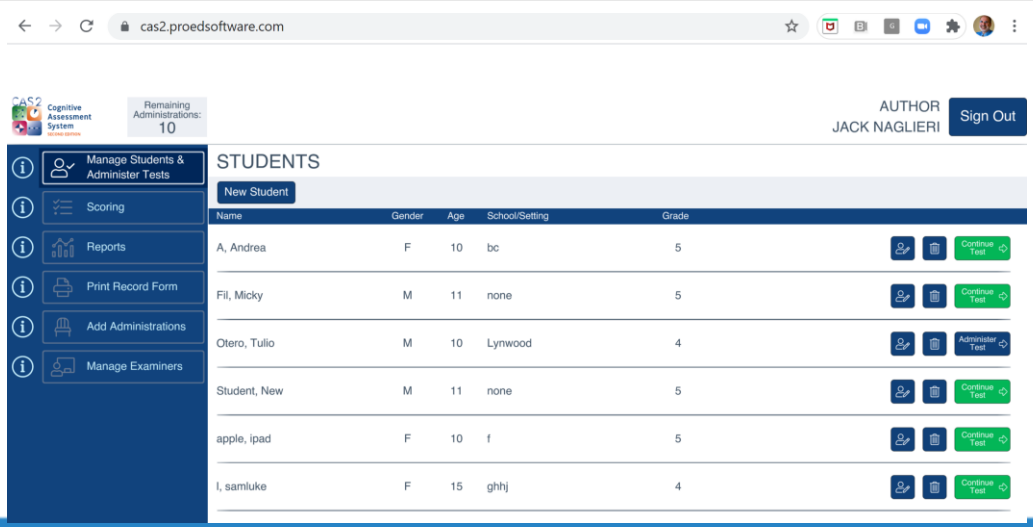
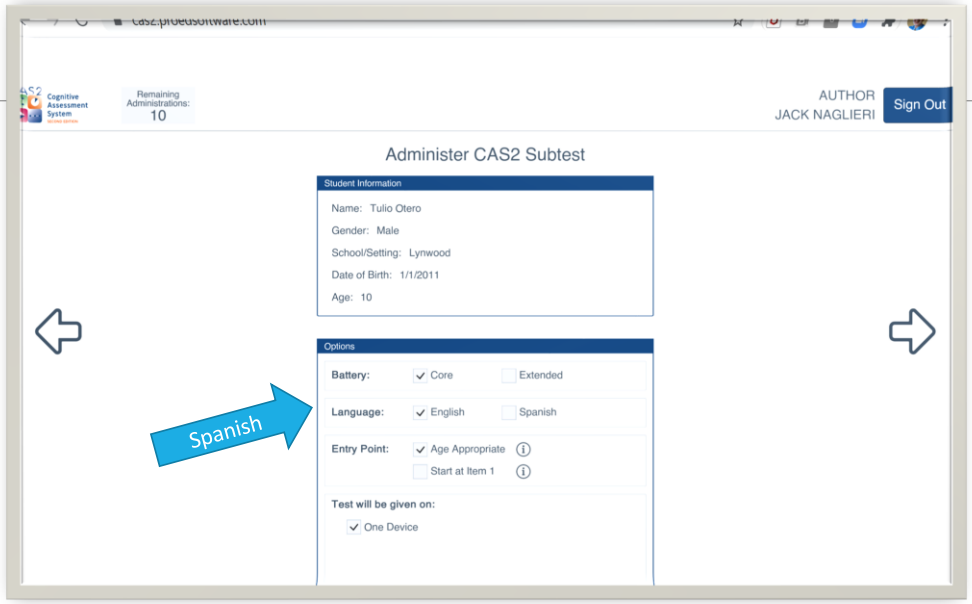
CAS2 for (Ages 5-18 yrs.)

NEW! CAS2 Digital (English and Spanish) coming in 2021 with integrated scoring and narrative report



CAS2 Computer Admin: 1 or 2 Device versions





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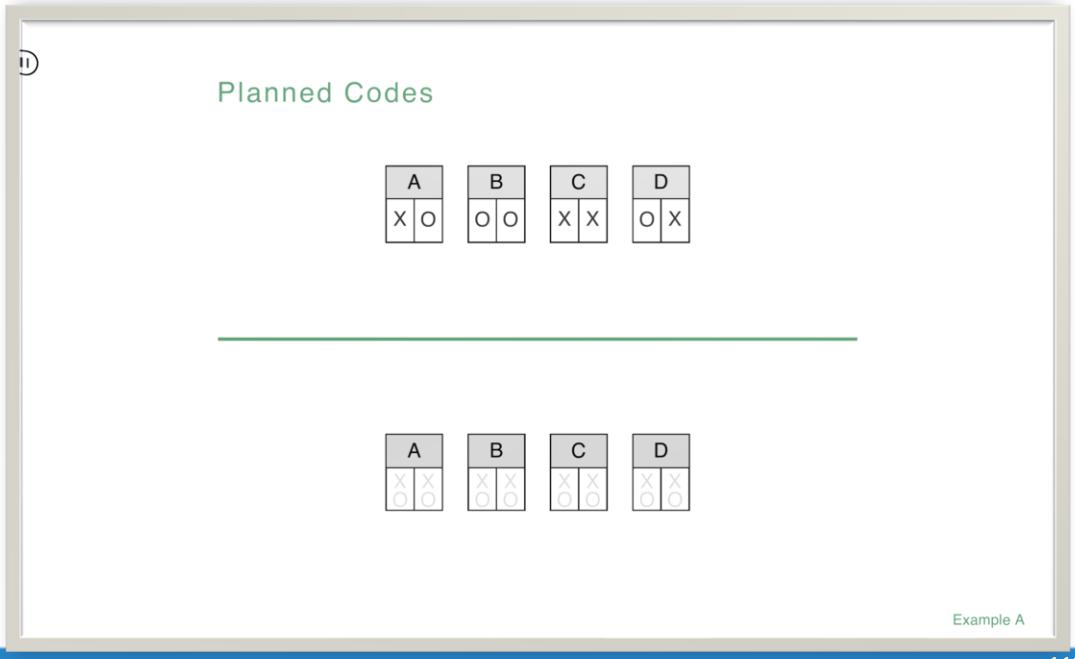

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CAS2 Online Score & Report

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:

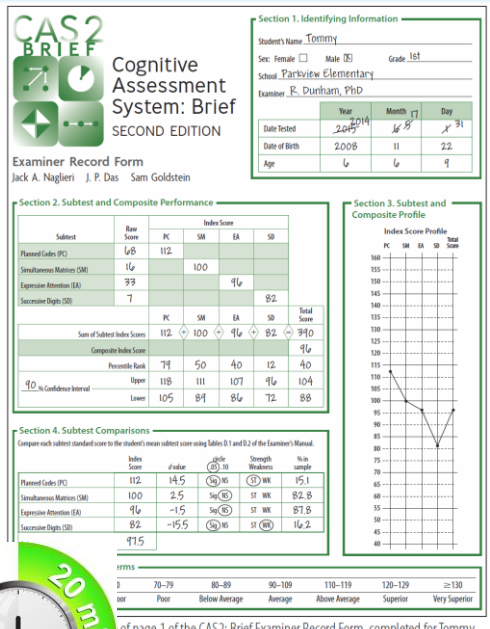
- CAS2: Online Scoring and Report System (Add-on 5-User License) **$69.00**
- CAS2: Online Scoring and Report System (Annual Renewal) **$69.00**

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
Cognitive Assessment System: Brief
SECOND EDITION
Examiner Record Form
Jack A. Naglieri J. P. Das Sam Goldstein

Section 1. Identifying Information

Student's Name Tommy
Sex: Female ☐ Male ☒ Grade 1st
School Parkview Elementary
Examiner R. Dunham, PhD

	Year	Month	Day
Date Tested	2019	6	21
Date of Birth	2008	11	22
Age	6	6	9

Section 2. Subtest and Composite Performance

Subtest	Raw Score	Index Score PC	SM	EA	SD
Planned Codes (PC)	68	112			
Simultaneous Matrices (SM)	16		100		
Expressive Attention (EA)	33			96	
Successive Digits (SD)	7				82

	PC	SM	EA	SD	Total Score
Sum of Subtest Index Scores	112	100	96	82	390
Composite Index Score					96
Percentile Rank	79	50	40	12	40
90 % Confidence Interval Upper	118	111	107	96	104
90 % Confidence Interval Lower	105	89	86	72	88

Section 3. Subtest and Composite Profile

Index Score Profile

Section 4. Subtest Comparisons

Compare each subtest standard score to the student's mean subtest score using Tables D.1 and D.2 of the Examiner's Manual.

	Index Score	d value	Sig (.05) .10	Strength Weakness	% in sample
Planned Codes (PC)	112	14.5	Sig NS	ST WK	15.1
Simultaneous Matrices (SM)	100	2.5	Sig NS	ST WK	82.8
Expressive Attention (EA)	96	-1.5	Sig NS	ST WK	87.8
Successive Digits (SD)	82	-15.5	Sig NS	ST WK	16.2
	97.5				

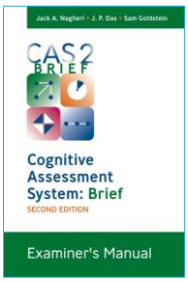
70–79	80–89	90–109	110–119	120–129	≥130
Poor	Below Average	Average	Above Average	Superior	Very Superior

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

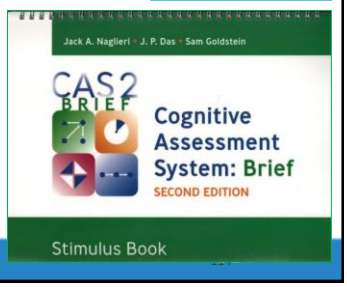
20 min

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



Jack A. Naglieri • J. P. Das • Sam Goldstein
CAS2 BRIEF
Cognitive Assessment System: Brief
SECOND EDITION
Examiner's Manual



Jack A. Naglieri • J. P. Das • Sam Goldstein
CAS2 BRIEF
Cognitive Assessment System: Brief
SECOND EDITION
Stimulus Book

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	12.4	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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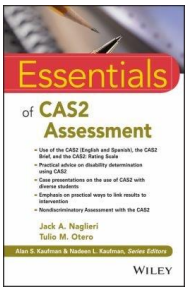
CAS2, CAS2 Online Score and Report Write, CAS2-Espanol, CAS2: Brief, CAS2 Rating Scale

- 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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How Psychometric Bias is Studied (e.g., Jensen's Bias in Mental Tests)

- reliability of internal consistency of items
- reliability of test/retest scores
- rank order of item difficulties
- item intercorrelations
- factor structure of test
- magnitude of the factor loadings

- slope & intercept of the regression line
- correlation of raw scores with age
- item characteristic curve
- frequencies of choice of error distracters
- interaction of test items by group membership

Race and Ethnic Differences in Group & Individually Administered Ability Tests

Note: Even though traditional tests may not show psychometric bias (Worrell, 2019) they still do not achieve equity.

Mean Score Differences in Group and iindividually Administered Intelligence Test Scores by Race & Ethnicity.

	Race	Ethnicity
Tests that require knowledge		
Otis-Lennon School Ability Test (school system)	13.6	
Stanford-Binet IV (normative sample)	12.6	
WISC-V (normative sample)	11.6	9.1
WJ- III (normative sample)	10.9	10.7
CogAT7 (Nonverbal scale)	11.8	7.6
WISC-V (statistical controls normative sample)	8.7	5.4
Average Across All Tests	11.5	8.2
Tests that require minimal knowledge		
KABC-2 (matched samples)	5.0	
CAS-2 (normative sample)	6.3	4.5
CAS-2 (statistical controls normative sample)	4.5	1.8
NNAT (matched samples)	4.2	2.8
CAS2: Brief (normative samples)	2.0	2.8
Average Across All Tests	4.4	3.0

Citations: Otis-Lennon School Ability Test by Avant and O'Neal (1986); Stanford-Binet IV from Wasserman & Becker (2000); Woodcock-Johnson III race differences from Edwards & Oakland (2006) and ethnic differences from Sotelo-Dynega, Ortiz, Flanagan & Chaplin (2013); CogAT7 from Carman, Walther and Bartsch (2018); WISC-V from Kaufman, Raiford & Coalson (2016); Kaufman Assessment Battery for Children-II from (Lichenberger, Sotelo-Dynega & Kaufman, 2009); CAS-2 and CAS2:Brief from Naglieri, Das & Goldstein, 2014a & 2014b; Naglieri Nonverbal Ability Test (Naglieri & Ronning, 2000).

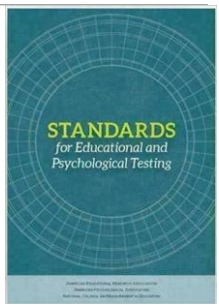
From: Brulles, D., Lansdowne, K. & Naglieri, J. A. (2022). *Ensuring Equity: Identifying and Serving All Gifted Students Using the Naglieri General Ability Tests*. Minneapolis, MN: Free Spirit Publishing.

Traditional Ability Tests' Overall Differences

Second Generation Ability Tests' Overall Differences

Differences in Mean Scores = Impact

- According to the *Standards for Educational and Psychological Testing* (AERA, APA, NCME, 2014), **equitable assessment** provides examinees *an equal opportunity to display one's ability* and …
- And … **if a person has had limited opportunities to learn the content in a test of intelligence, *that test may be considered unfair*** if it penalizes students for not knowing the answers **even if the norming data do not demonstrate test bias.**



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Illinois School District U-46

Main question: Does the District's gifted program unlawfully discriminate against Hispanic Students?

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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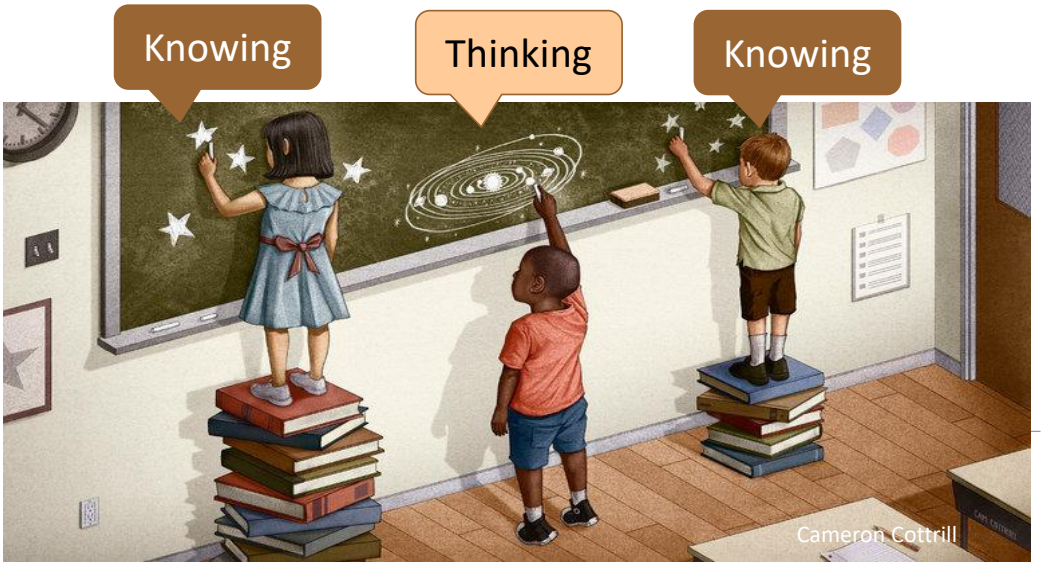
Measure Thinking not Knowledge

- What does the student have to know to complete a task?
  - This is dependent upon educational opportunity

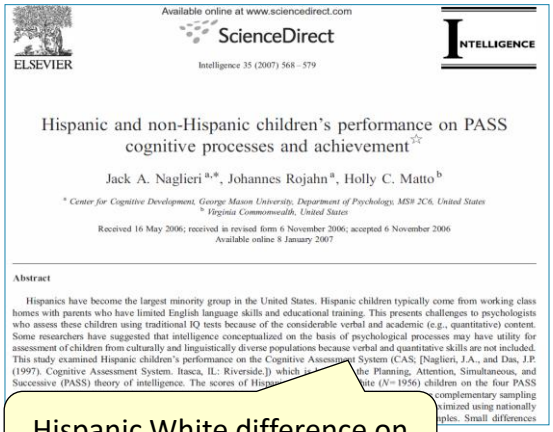
- How does the student have to think to complete a task?
  - This is dependent on the brain



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

PASS Scores for Hispanics

Naglieri, Rojahn, Matto (2007)



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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]

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[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 [illegible] the Planning, Attention, Simultaneous, and Successive (PASS) theory of intelligence. The scores of Hispa[illegible]hite (N = 1956) children on the four PASS [illegible] complementary sampling [illegible]eximized using nationally [illegible]mples. 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

WJ III Test	Sample M	Sample SD	WJ III Sample M	WJ III Sample 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	100	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

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

*p < .001.

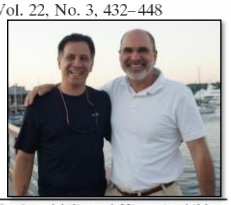
As English skills go down so does the GAI

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 [illegible] ences were noted between the [illegible] Simultaneous and Successive [illegible] were similar. Specific subtests [illegible] were found to contribute to [illegible] versions of the CAS. Compar[illegible] ness on both versions of the [illegible] sistently despite the language

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

APPLIED NEUROPSYCHOLOGY: CHILD, 0: 1–9, 2012
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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

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Lauren Gonzales
George Mason University, Fairfax, Virginia

Jack A. Naglieri
University of Virginia, Fairfax, Virginia

This study examined the performance of referred Hispanic English-language learners (N = 40) on the English and Spanish versions of the *Cognitive Assessment System* (CAS; Naglieri & Das, 1997). The CAS measures basic neuropsychological processes based on the Planning, Attention, Simultaneous, and Successive (PASS) theory (Naglieri & Das, [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

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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*.

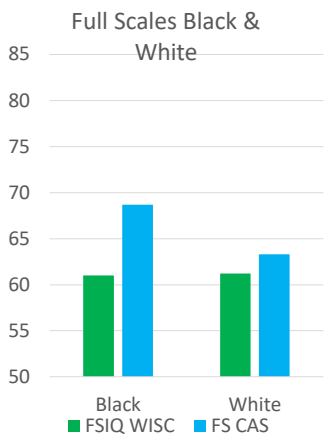
American Journal on Mental Retardation, 2001, Vol. 106, No. 4, 359–367

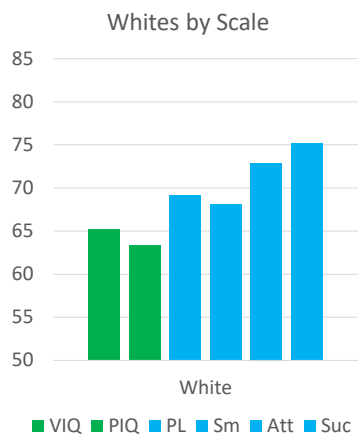
Intellectual Classification of Black and White Children in Special Education Programs Using the WISC-III and the Cognitive Assessment System

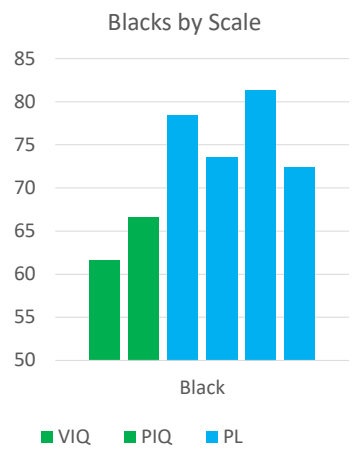
Jack A. Naglieri
George Mason University

Johannes Rojahn
The Ohio State University

Measuring Thinking using CAS







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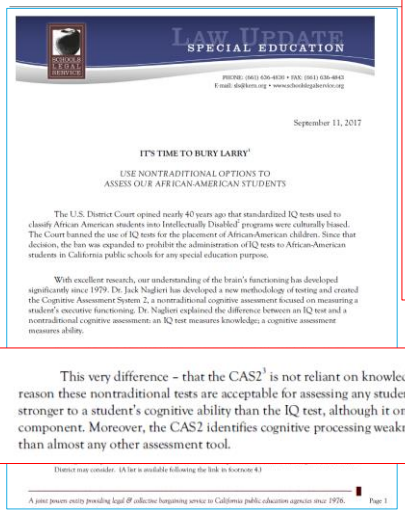
California



LAW UPDATE
SPECIAL EDUCATION

SCHOOL LEGAL SERVICE

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

September 11, 2017

IT'S TIME TO BURY LARRY[1]

USE NONTRADITIONAL OPTIONS TO ASSESS OUR AFRICAN-AMERICAN STUDENTS

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

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

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

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.

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 Yoklin of the California Department of Education, Revisiting Larry P. v. Riles—A CASP Convention 2006 Report.* (PDF; Outside Source), February 2006. http://www.caspurveys.org/ct/56_15.asp

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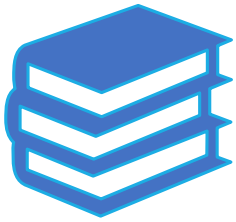


Research on Interpretation of Test Scores and PSW

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.

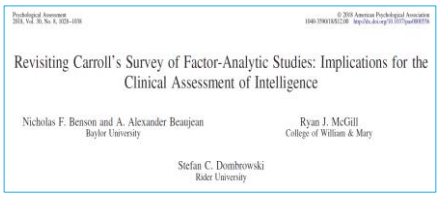
© Request Permissions

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.

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,* 458-472.

Canivez, G. L., & McGill, R. J. (2016). Factor structure of the **Differential Ability Scales–Second Edition**: Exploratory and hierarchical factor analyses with the core subtests. *Psychological Assessment, 28,* 1475-1488. http://dx.doi.org/10.1037/pas0000279

Canivez, G. L., & McGill, R. J. (2016). Factor structure of the **Differential Ability Scales-Second Edition**: Exploratory and hierarchical factor analyses with the core subtests. Psychological Assessment, 28, 1475–1488. https://doi.org/10.1037/pas0000279

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Dombrowski, S. C., McGill, R. J., & Canivez, G. L. (2017). Exploratory and hierarchical factor analysis of the **WJ IV Cognitive** at school age. *Psychological Assessment, 29,* 394-407.

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Watkins, M. W., Dombrowski, S. C., & **Canivez, G. L.** (2017, October). Reliability and factorial validity of the **Canadian Wechsler Intelligence Scale for Children–Fifth Edition**. *International Journal of School and Educational Psychology*.

School Psychology Quarterly
2011, Vol. 26, No. 4, 305–317

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)

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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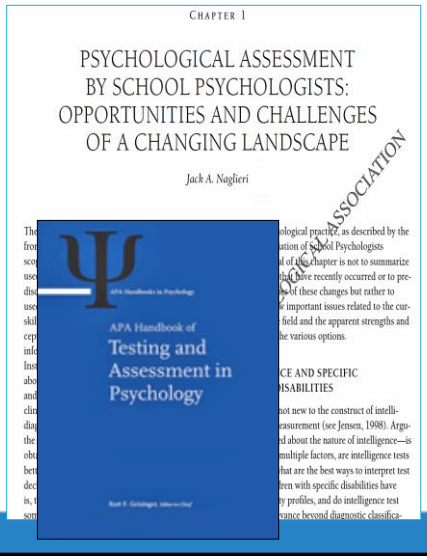
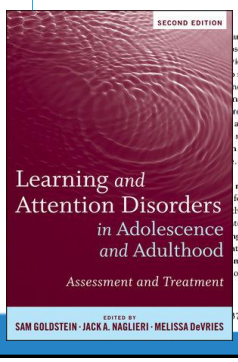
PASS Scales can be Interpreted and SHOULD be: Profiles


CHAPTER 1

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

Jack A. Naglieri



CHAPTER 6

Assessment of Cognitive and Neuropsychological Processes

JACK A. NAGLIERI
SAM GOLDSTEIN

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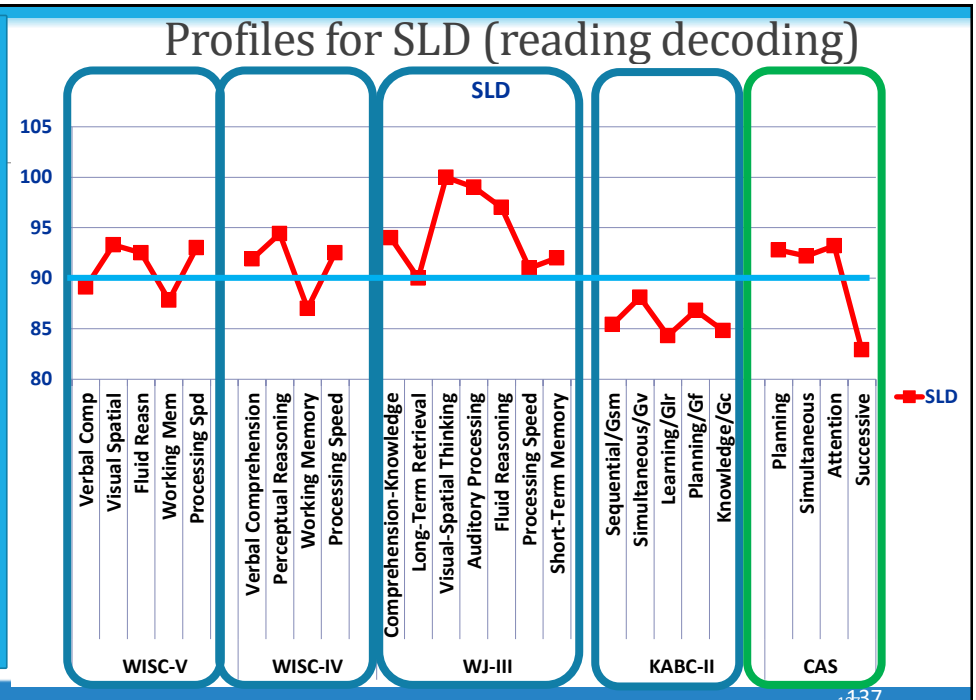
Profiles on all these widely used ability tests show that PASS scores from the CAS are sensitive to the cognitive component that underlies READING DECODING failure (Successive Processing)



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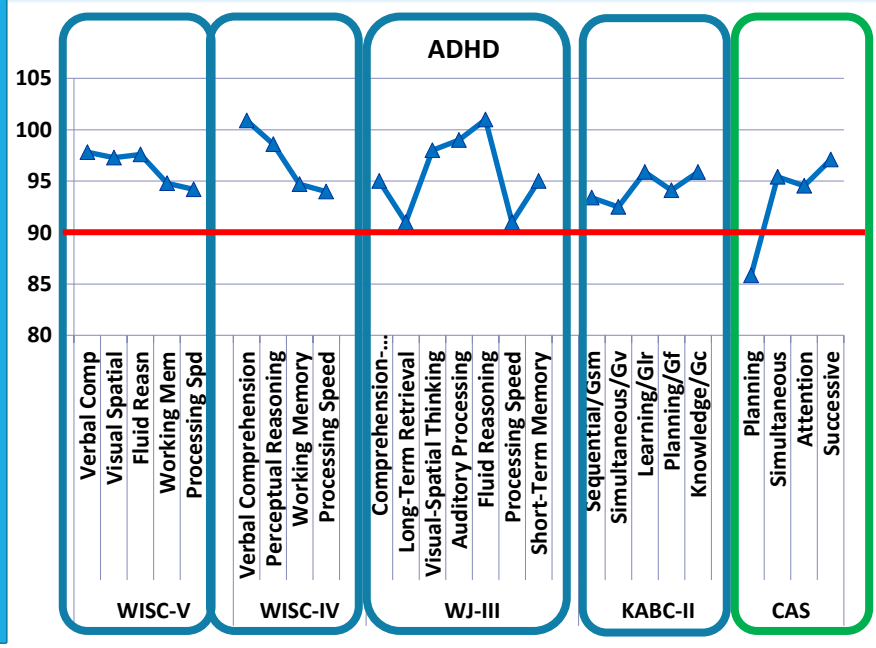
Profiles on all these widely used ability tests show that PASS scores from the CAS are sensitive to the cognitive component of ADHD Hyperactive / Combined Type (Planning)



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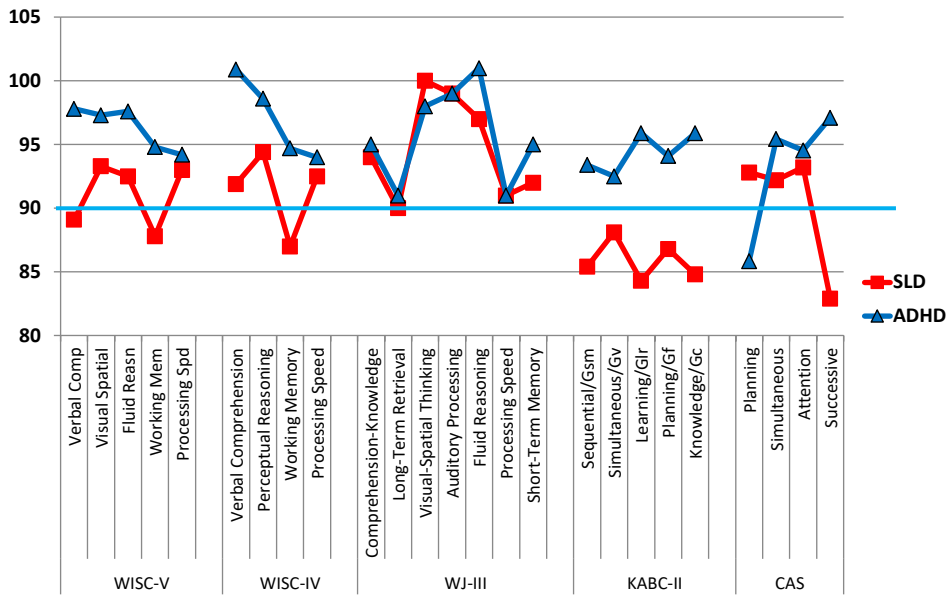
Looking at SLD and ADHD profiles on all these tests is very revealing…PASS works

Profiles for SLD (reading decoding) & ADHD



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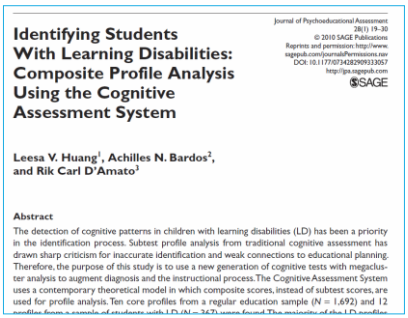
Research on PASS Profiles

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



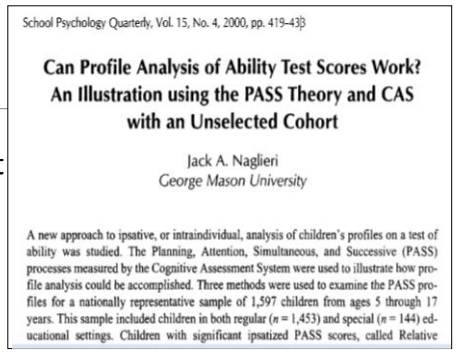
Identifying Students With Learning Disabilities: Composite Profile Analysis Using the Cognitive Assessment System

Journal of Psychoeducational Assessment 28(1) 19–30 © 2010 SAGE Publications

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 meaculster 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



School Psychology Quarterly, Vol. 15, No. 4, 2000, pp. 419–433

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

Jack A. Naglieri
George Mason University

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

"**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.

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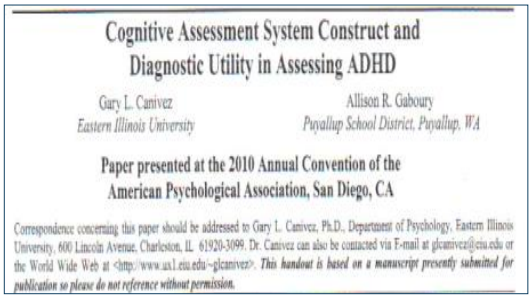
Research on PASS Profiles

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



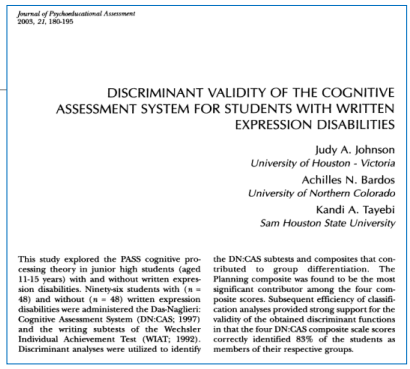
Cognitive Assessment System Construct and Diagnostic Utility in Assessing ADHD

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.*



Journal of Psychoeducational Assessment
2005, *23*, 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.

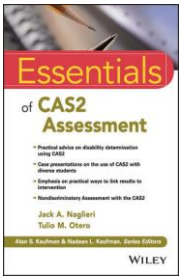
- "the present study demonstrated the potential of the CAS to correctly identify students who **demonstrated behaviors consistent with ADHD** diagnosis."

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

Correlations: We can do better!

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



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

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

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

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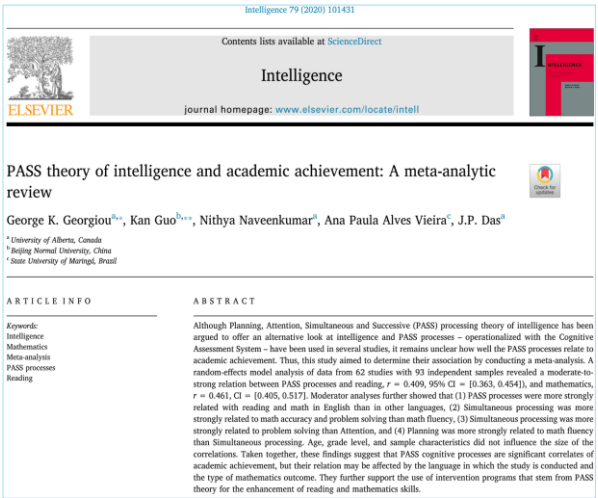
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PASS theory of intelligence and academic achievement: A meta-analytic review

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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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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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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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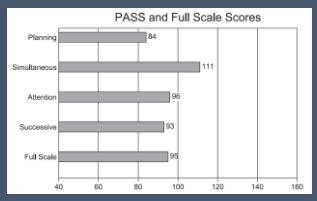
Interpretation Details

- 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

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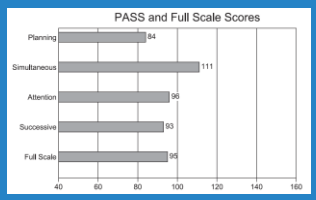

Interpretation Details

PASS SCALE – IPSATIVE AND NORMATIVE COMPARISONS

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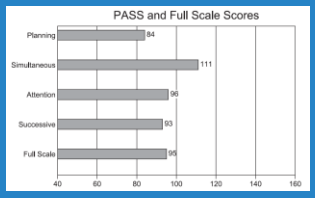
124 ESSENTIALS OF CAS2 ASSESSMENT

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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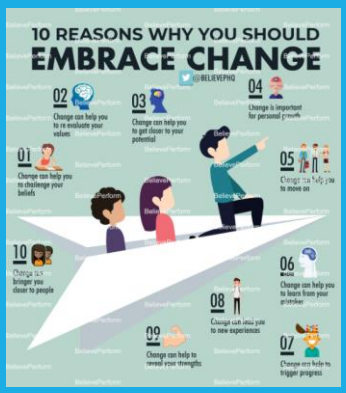

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Summary: PASS theory and CAS2 (see Naglieri & Otero, 2017)

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 in combination with achievement (especially the FAR, FAM and/or FAW) provides examiners with a reliable and defensible Discrepancy Consistency Method to identify students with SLD.
7. Research has shown that PASS scores have relevance to instruction and intervention.

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Questions and Thoughts Please

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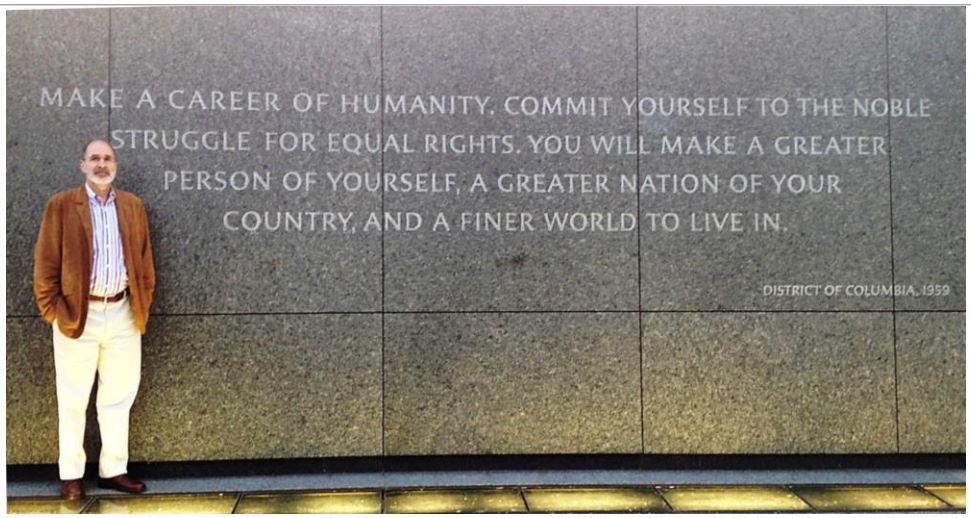
Equitable Assessment is Essential



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