

A Process Oriented Approach for Identifying and Remediating Specific Reading Disabilities

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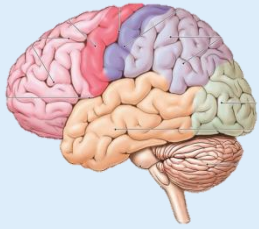
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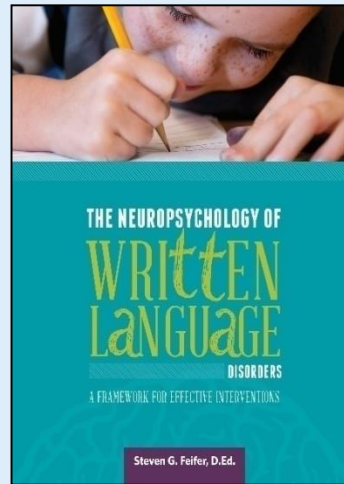
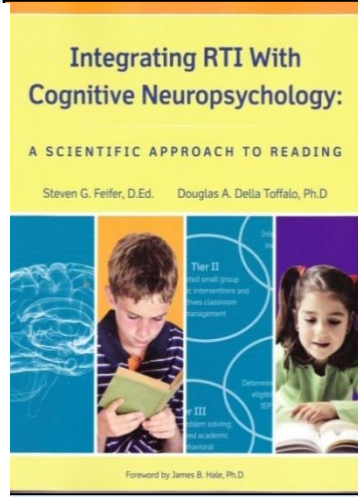
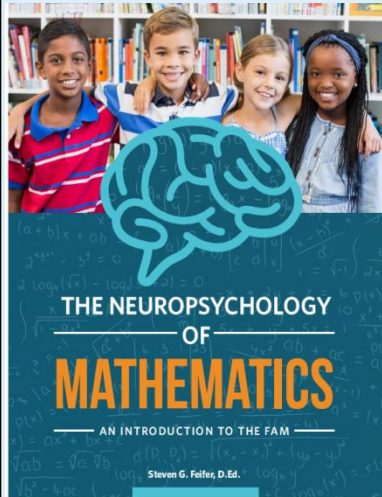


Why this Session...

- The diagnosis of LD has become too complicated
- There needs to be a more direct line drawn between specific test results and meaningful interventions.
- Most educators know exactly WHERE a student is achieving - What they crave for is WHY the student struggles !!!
- Traditional measures struggle to answer the WHY question
- We CAN answer the WHY question with a different approach to measuring ability – as ‘basic psychological processes’



For Future Reference



far *with assessment/reading*
Steven G. Feifer, D.Ed.

Examiner Record Form

Year: _____ Month: _____ Day: _____
 Size used: _____
 Date of test: _____
 Age: _____

Examiner's name: _____ Grade: _____ Gender: _____
 Examiner's name: _____

Instructions for Examiners

This booklet contains administration and scoring instructions for the subtests of the FAM. You will be recording responses and subscale scores in this booklet. Follow the instructions for each subtest carefully. Before you begin testing, ensure that the demographic information requested above has been filled in and that you are sitting comfortably at a table with the examinee sitting across from you. Responses can be recorded using either a pencil or a pen. Please do not include an address for you to use to rate the examinee's behavioral patterns. For more information, see Chapter 3 of the FAM Professional Manual.

1 2 3

- This subject is timed.
- This subject requires use of Stimulus Book 1, 2, or 3.
- This subject requires use of the Examinee Response Form.
- This subject requires use of the storybook *Beats Are Beary Fun*.
- This subject belongs to the Phonological Index, Fluency Index, or Comprehension Index.

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fam *with assessment/mathematics*
Steven G. Feifer, D.Ed.

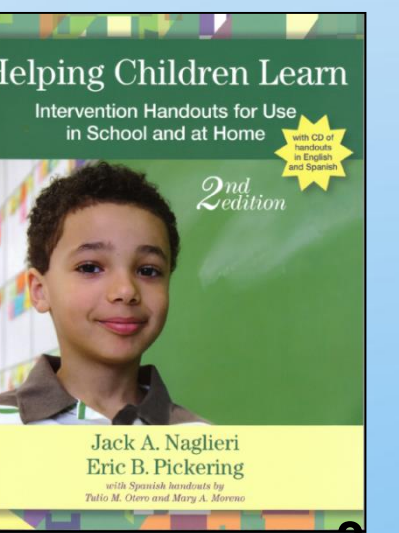
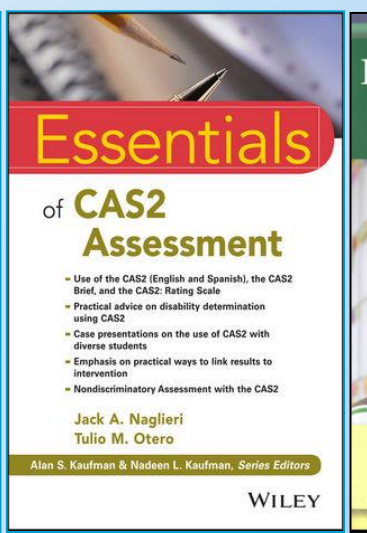
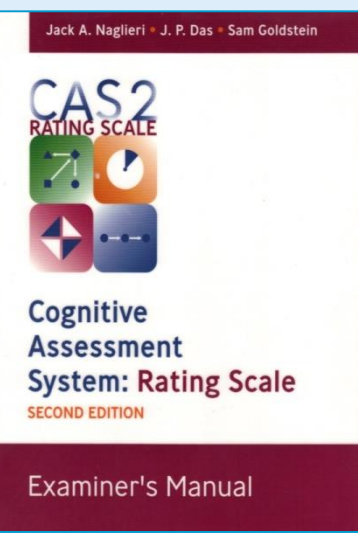
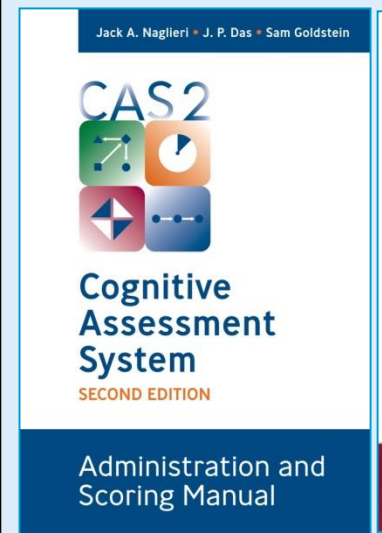
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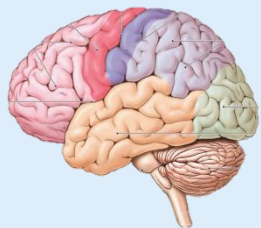
Examiner's name: _____ Grade: _____ Appendix D
 Age: _____ Gender: _____ Examiner's name: _____ Date: _____

Score Summary

Page #	Subtest	Raw score	Standard score	Index standard score	Composite standard score	Percentile
5-8	Revised Number Count (RNC)					
7-8	Revised Number Count (RNC) - Rv					
9	Number Capacity (NCA)					
27-28	Sequences (SEQ)					
31-32	Object Counting (OC)					
Phonological Index (PI)						
10	Revised Number Naming (RNN)					
13-13	Address Fluency (AF)					
14-15	Substitution Fluency (SF)					
16-17	Multiplication Fluency (MF)					
18-19	Division Fluency (DF)					
22-26	Composite Math Concepts (CMC)					
Fluency Index (FI)						
13	Spatial Memory (SM)					
20-22	Digit Span Working (DS)					
20-20	Phonological Fluency (PF)					
23	Number Comparison (NCOS)					
24	Address Knowledge (AK)					
25	Substitution Knowledge (SK)					
26	Multiplication Knowledge (MK)					
27	Division Knowledge (DK)					
Comprehension Index (CI)						
PI + FI + SF + CMC Total Index (TI)						

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Topical Outline



Introduction

- NASP SLD Position Paper
- Defining “basic psychological process” (IDEA)
 - Discrepancy/consistency Model for SLD
 - Which ability test to use?
 - Which achievement test to use?
 - Measure PASS and specific academic skills (FAR)
- Case study of SLD (Successive processing disorder and poor academics on Far)



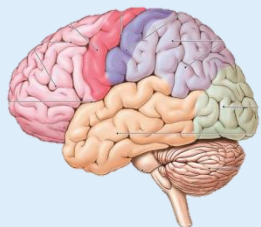
Jacob 6th grade

Presenting Concerns: Reading, Math Word Problems, Text Anxiety

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

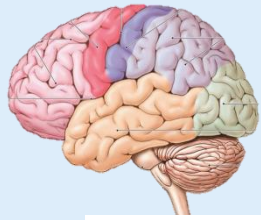
Questions: #1 Does Jacob qualify for SPED?

#2 Can you write an IEP based upon this data? 5



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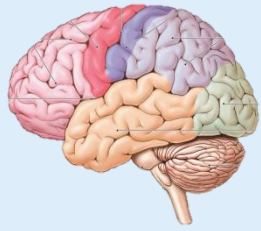
NATIONAL
ASSOCIATION OF
SCHOOL
PSYCHOLOGISTS

2011

Position Statement

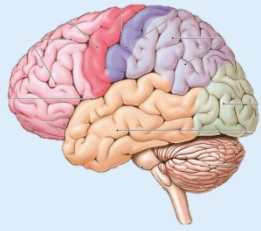
IDENTIFICATION OF STUDENTS WITH SPECIFIC LEARNING DISABILITIES

NASP endorses the provision of “effective services to help children and youth succeed academically, socially, behaviorally, and emotionally” (Standards for Graduate Preparation of School Psychologists, 2010b, p. 1). NASP’s position is that identification of and service delivery to children identified as having a specific learning disability (SLD) should be based on the outcomes of multitiered, high quality, research-based instruction. Such instruction best occurs in the least restrictive environment and is accompanied by regular data collection. School psychologists have long had a prominent role as members of school teams that identify students exhibiting SLD. Accordingly, NASP is dedicated to promoting policies and practices that are consistent with scientific research and that yield optimal student outcomes. School psychologists are scientist-practitioners, and, as consumers of and contributors to research, they generally agree on the following statements (LD Roundtable, 2002; National Joint Committee on Learning Disabilities, 2010; Shinn, 2007; Swanson, Harris, & Graham, 2003).



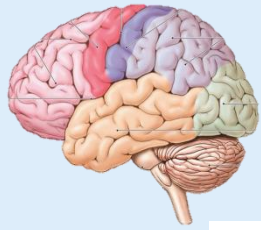
NASP 2011 LD POSITION STATEMENT

- Specific learning disabilities ...
 - are characterized by **neurologically** based deficits in cognitive processes.
 - impact a specific cognitive process and
 - result in a specific academic skill weakness
 - Are best identified using *multiple sources of data*
- The great majority (**over 80%**) of children with SLD have a disability in reading.



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Hale, Naglieri, Kaufman, & Kavale (2004)

THE SCHOOL PSYCHOLOGIST

Policy Forum

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

James B. Hale

Children's Evaluation and Rehabilitation Center, Albert Einstein College of Medicine

Jack A. Naglieri

Center for Cognitive Development, George Mason University

Alan S. Kaufman

Yale Child Study Center, Yale University School of Medicine

Kenneth A. Kavale

College of Education, University of Iowa



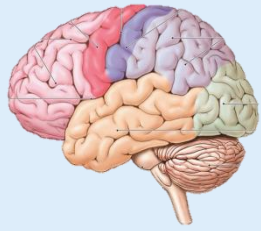
Abstract

The recently revised IDEA guidelines indicate that a Specific Learning Disability (SLD) can be identified if a child has a disorder in the basic psychological processes. The criteria in the new guidelines for identifying SLD state that: a) a severe discrepancy between achievement and intellectual ability *shall not be required*; and b) a response to intervention (RTI) *may be considered*. These criteria are ambiguous regarding how the traditional ability-achievement discrepancy approach should be applied, and they are equally ambiguous about the recently adopted failure to RTI model. Absent from these criteria is any mention

of individual differences in cognitive strengths and needs, one of the prerequisites for intervention efficacy. Identifying a child's unique pattern of performance on standardized measures not only assures compliance with the new IDEA guidelines, but also allows for recognition of individual cognitive strengths and needs, one of the prerequisites for intervention efficacy.

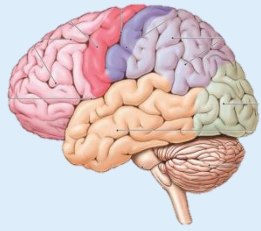
Specific Learning Disability Classification in the New Individuals With Disabilities Education Act: The Danger of Good Ideas

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



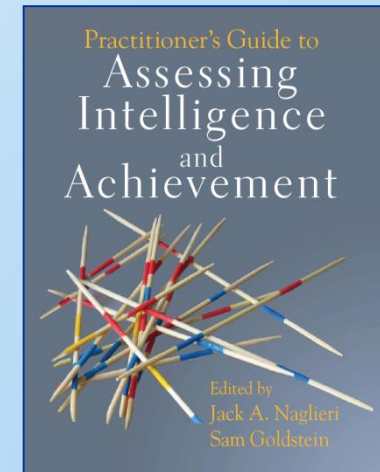
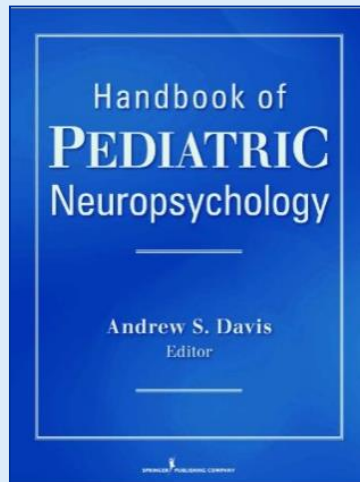
Hale, Naglieri, Kaufman, & Kavale (2004)

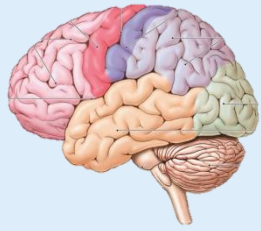
- The IDEA definition of SLD is
 - “... a disorder in 1 or more of the basic psychological processes ... [that results] in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations.”
- Neither the IQ/achievement discrepancy model nor RTI evaluates basic psychology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



What is a 'Basic Psychological Process'?

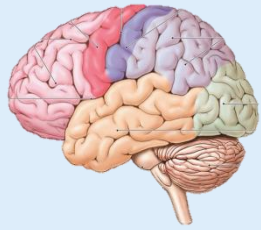
- How are the processes identified?
 - Use factor analysis to discover ability?
 - Assign new labels to traditional IQ test subtests
 - Use the experimental literature to define the constructs of interest?
 - Rely on neuropsychological constructs!





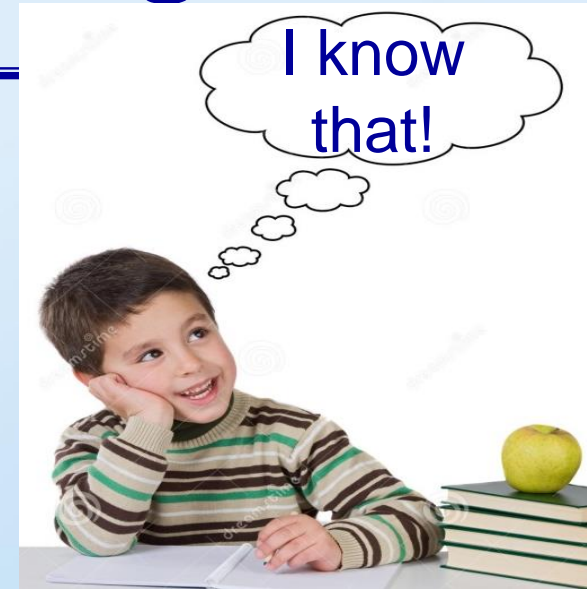
What is a Cognitive Process?

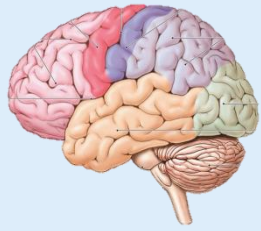
- The term cognitive process is a modern term for concepts like ability or intelligence
- Cognitive processes lead to the acquisition of knowledge and skills
- Skills, like reading decoding or math calculation, are *not* examples of cognitive process
 - these are sets of specific knowledge and skills acquired and/or performed by the application of cognitive processes



Cognition or Knowledge?

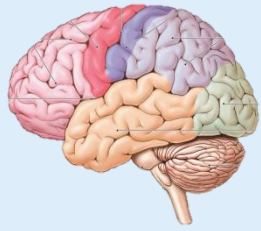
- What does the student have to **know** to complete a task?
 - This is dependent on *instruction*
- How does the student have to **think** to complete a task?
 - This is dependent on the *brain – PASS*
- We must assess ability and achievement separately





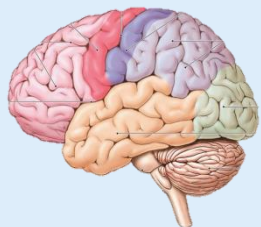
What is a Cognitive Process?

- We must assess ability and achievement separately
- Assess achievement with tests that adequately evaluate the domain of interest (e.g., reading, math, etc.)
- Assess cognitive abilities using questions that are as free of academic content as possible



Topical Outline

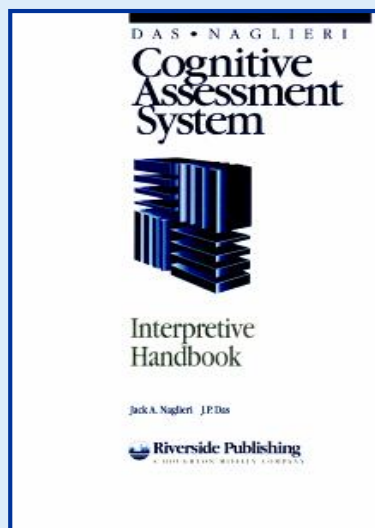
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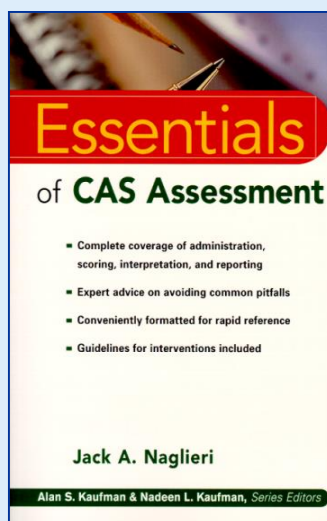
Discrepancy Consistency Method

2017

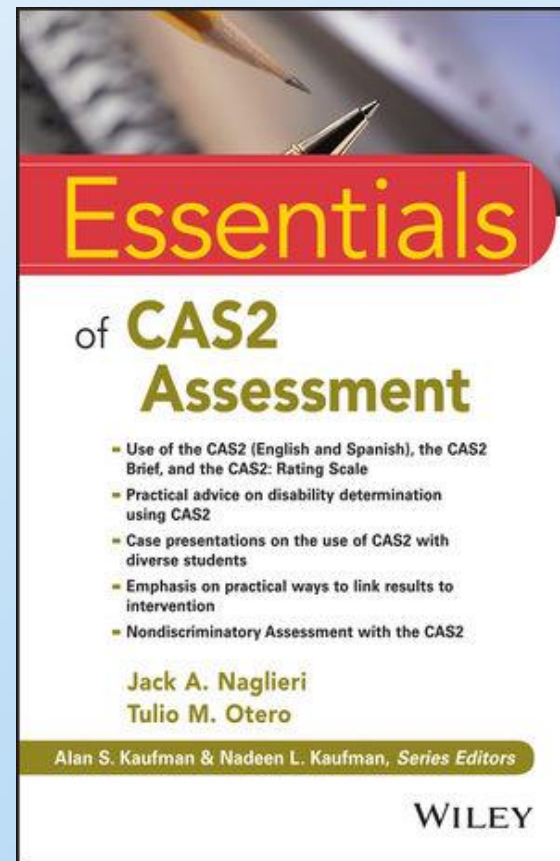
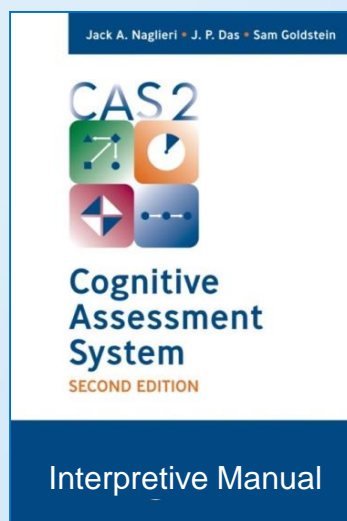
1997



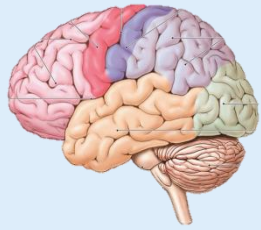
1999



2014

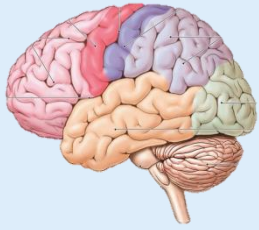


Naglieri, J. A. & Otero, T. M.
(2017). Essentials of CAS2 Assessment.
New York: Wiley



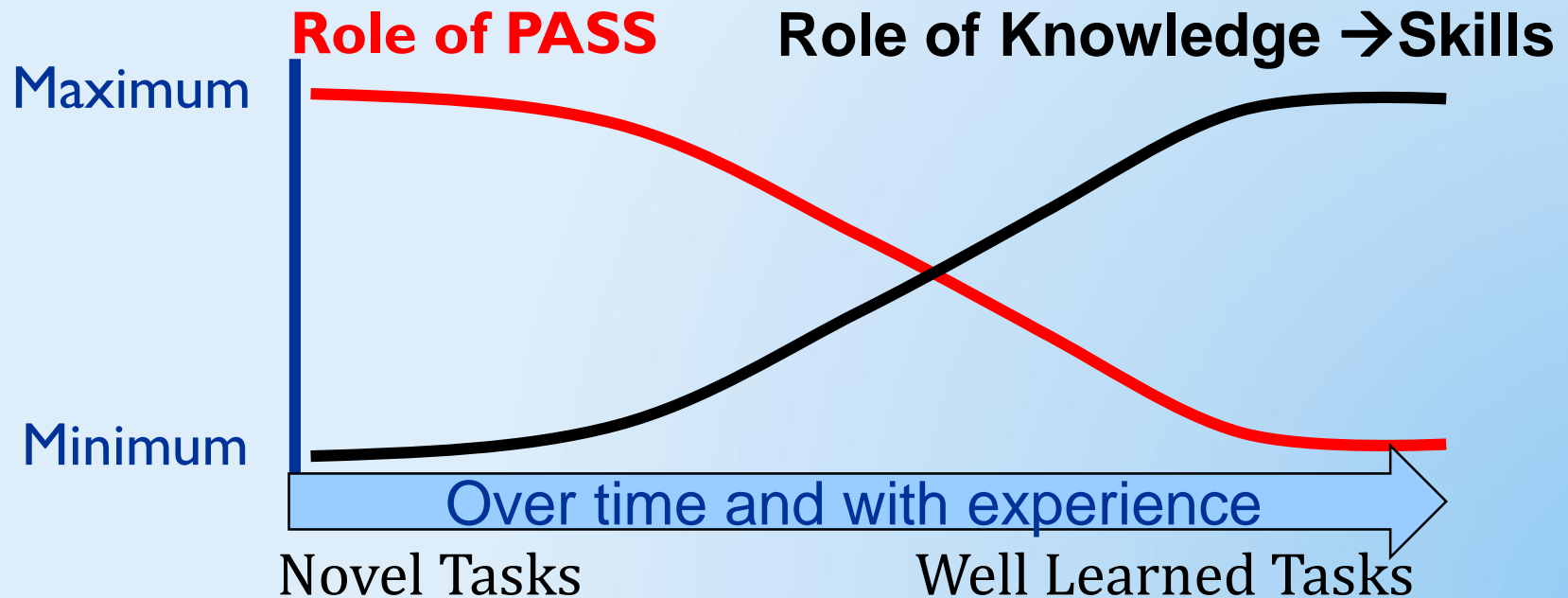
PASS Neurocognitive Theory

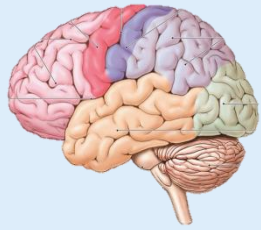
- **PASS** theory is a modern way to define 'ability' based on measuring neurocognitive abilities
- **P**lanning = THINKING ABOUT HOW YOU DO WHAT YOU DECIDE TO DO
- **A**ttention = BEING ALERT AND RESIST DISTRACTIONS
- **S**imultaneous = GETTING THE BIG PICTURE
- **S**uccessive = FOLLOWING A SEQUENCE



EF's Learning Curves

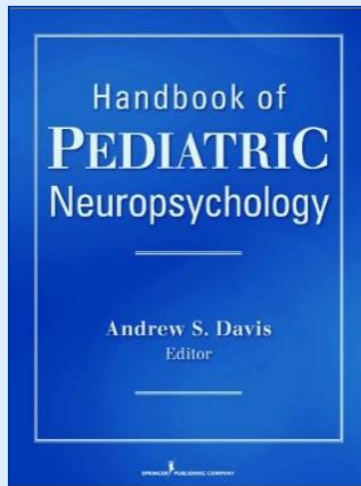
- Learning depends on instruction & cognition (PASS)
- At first, PASS plays a major role in learning
- When a new task is learned and practiced it becomes a skill and execution requires less PASS



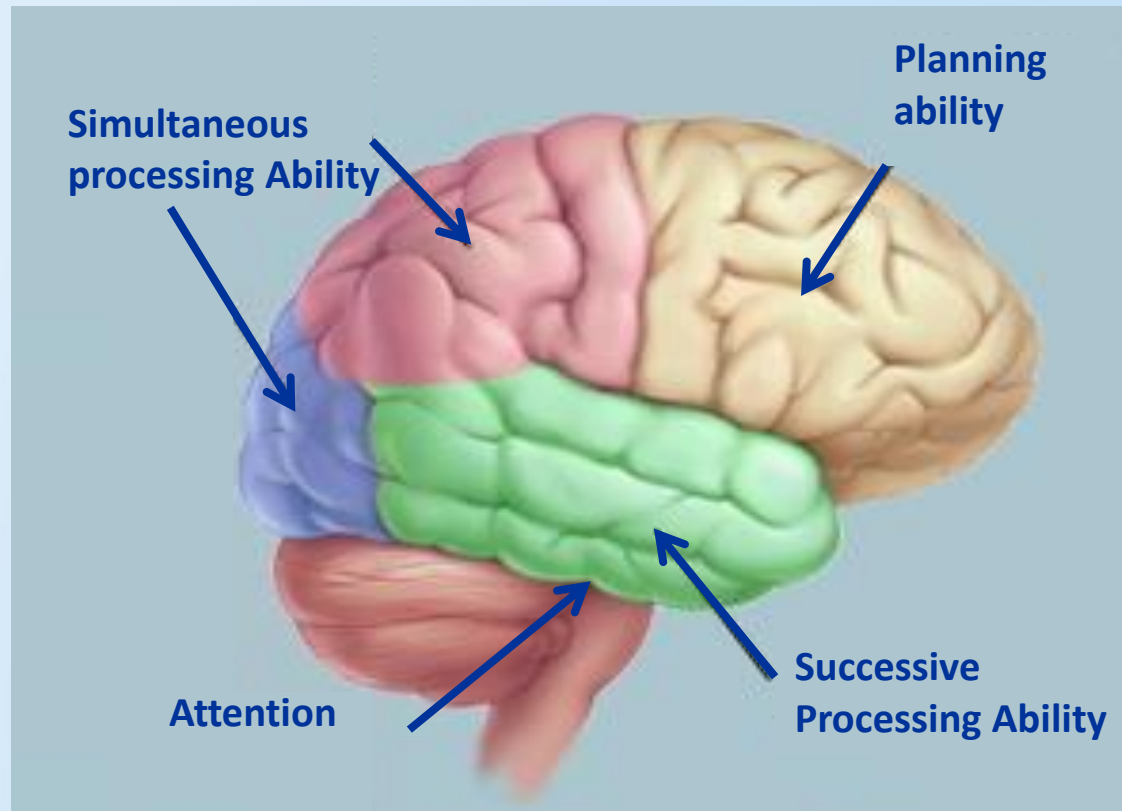


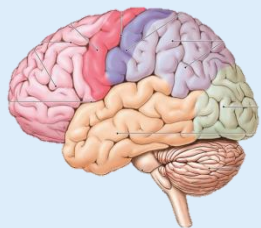
Brain, Cognition, & Intelligence

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



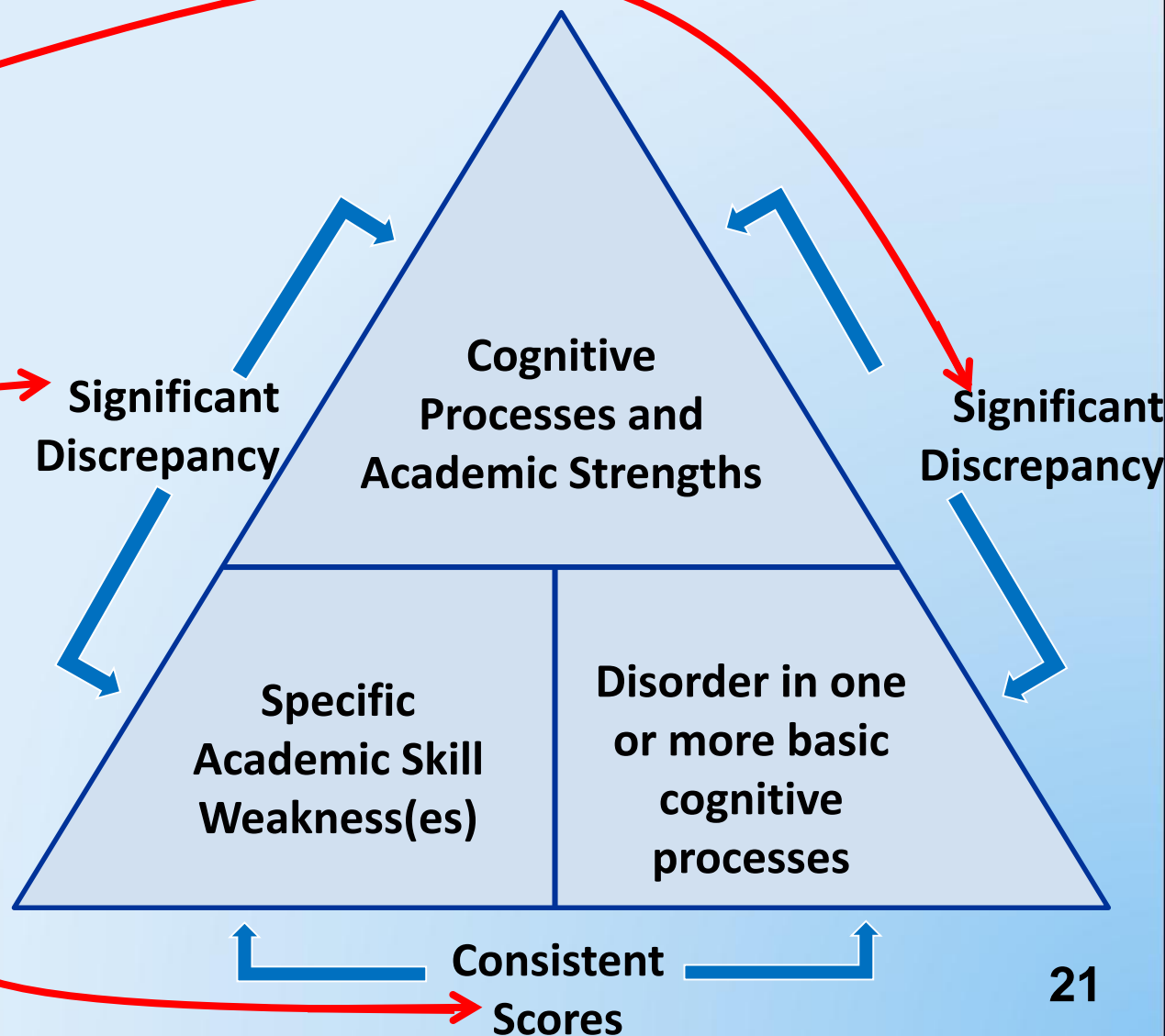
Naglieri, J. A. & Otero, T. (2011). Cognitive Assessment System: Redefining Intelligence from A Neuropsychological Perspective. In A. Davis (Ed.). *Handbook of Pediatric Neuropsychology* (320-333). New York: Springer Publishing.

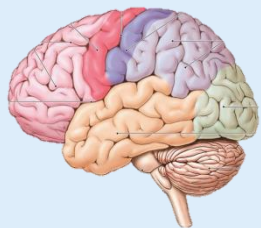




Discrepancy Consistency Model for SLD

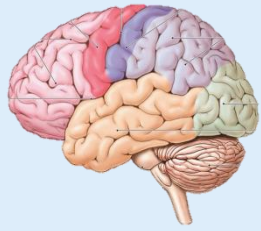
- **Discrepancy** between high and low processing scores
- **Discrepancy** between high processing and low achievement
- **Consistency** between low processing and low achievement





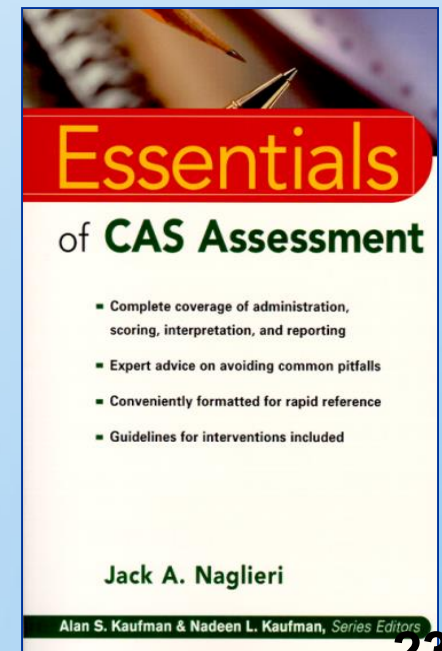
Topical Outline

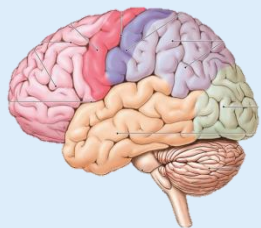
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Which test correlate highest with Achievement?

- IQ scores correlate about **.5 to .55** with achievement Intelligence (Brody, 1992)
- But traditional tests have achievement in them
- Naglieri (1999) summarized the correlations between several tests and achievement
 - The median correlation between each test's overall score and all achievement variables was obtained



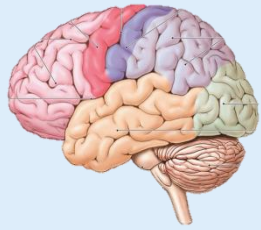


Ability & Achievement (Naglieri, 1999)

Tests require much knowledge Little knowledge needed

	WISC-III FSIQ	DAS GCA	WJ-R Cog	K-ABC MPC	CAS FS
Median r	.590	.600	.625	.630	.700
% of Var	35%	36%	39%	40%	49%
Increase over WISC-III	-	3%	12%	14%	41%
N	1,284	2,400	888	2,636	1,600

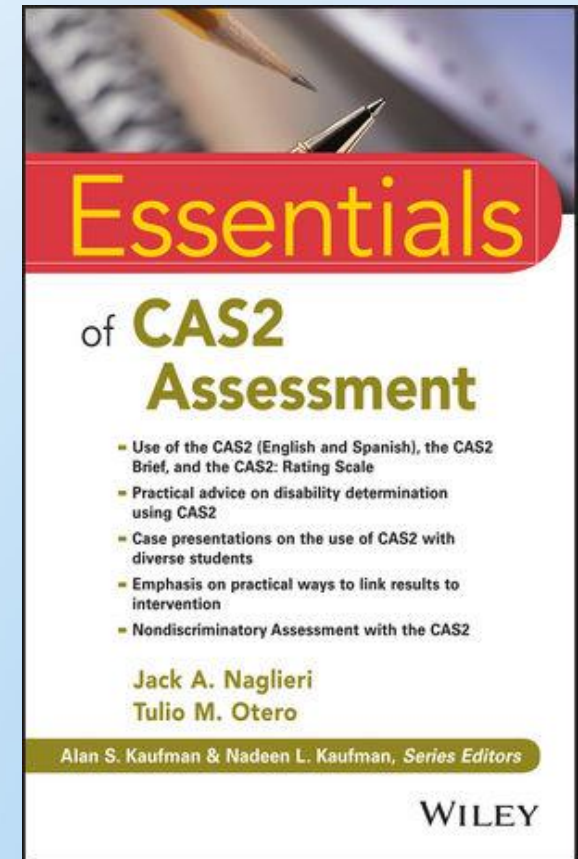
WISC-3: WIAT Manual Table C.1 ages 6-16; WJ-R Technical Manual; CAS Interpretive Handbook; K-ABC Interpretive Manual; DAS Handbook. Increase = $(r^2_1 - r^2_2) / r^2_1$ where r^2_1 = WISC-3 WIAT correlation



Correlations with Achievement

- Next, a summary of ability test correlations with achievement EXCLUDING the scales that clearly require knowledge
- The average correlations of the SCALES with achievement and those without achievement were obtained to avoid ***critierion contamination...***

Naglieri, J. A. & Otero, T. M. (2017). *Essentials of CAS2 Assessment*. New York: Wiley





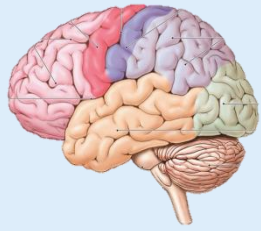
Correlations with Achievement

➤ Correlations between ability & achievement tests show the strength of measuring basic psychological processes

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

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

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



Which Ability Tests have Useful Profiles ?

CHAPTER 1

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

Jack A. Naglieri

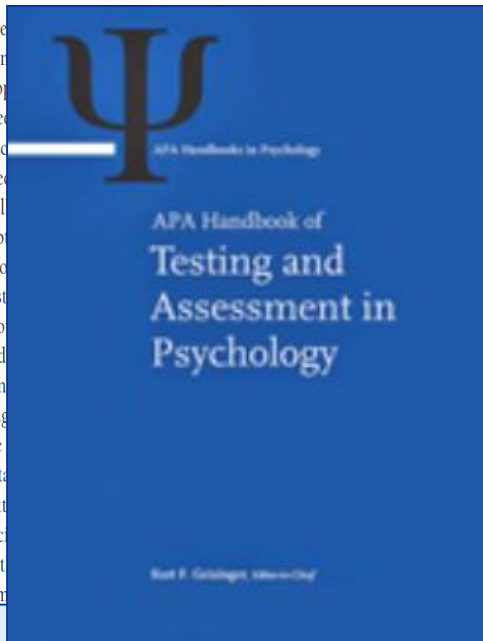
CHAPTER

6

Assessment of Cognitive and Neuropsychological Processes

JACK A. NAGLIERI
SAM GOLDSTEIN

The
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ological practice, as described by the
ation of School Psychologists
al of this chapter is not to summarize
that have recently occurred or to pre-
disc of these changes but rather to
w important issues related to the cur-
field and the apparent strengths and
the various options.

CE AND SPECIFIC DISABILITIES

not new to the construct of intelli-
measurement (see Jensen, 1998). Argu-
ed about the nature of intelligence—is
multiple factors, are intelligence tests
that are the best ways to interpret test
ren with specific disabilities have
y profiles, and do intelligence test
vance beyond diagnostic classifica-

SECOND EDITION

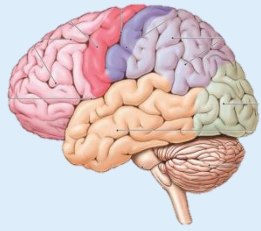
Learning and Attention Disorders in Adolescence and Adulthood

Assessment and Treatment

EDITED BY
SAM GOLDSTEIN · JACK A. NAGLIERI · MELISSA DeVRIES

ant role in the process of determining if an
se suspected of having a Specific Learning
ides an important reference point to com-
may have Attention-Deficit/Hyperactivity
nce is used to rule out other disabilities that
intelligence tests have and will continue to
rehensive assessment needed to determine
and ADHD. Their importance, however,
strengths and limitations of these tests of
their effectiveness, and an examination
. The goal of this chapter is to address

measured by traditional IQ tests with spe-
for diagnosis. In order to achieve this goal,
the history and definitions of intelligence
intelligence more closely. Emphasis will be
g how intelligence is conceptualized and
tions this has for assessment. The chapter
ment of basic psychological processes and
ostic process and treatment of adolescents



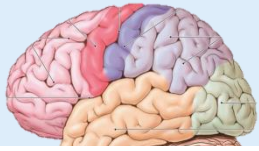
Naglieri & Goldstein (2011)

GROUP PROFILES BY ABILITY TEST

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

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

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



Profiles for SLD (reading decoding)

SLD

105
100
95
90
85
80

Verbal Comp
Visual Spatial
Fluid Reasn
Working Mem
Processing Spd

WISC-V

Verbal Comprehension
Perceptual Reasoning
Working Memory
Processing Speed

WISC-IV

Comprehension-Knowledge
Long-Term Retrieval
Visual-Spatial Thinking
Auditory Processing
Fluid Reasoning
Processing Speed
Short-Term Memory

WJ-III

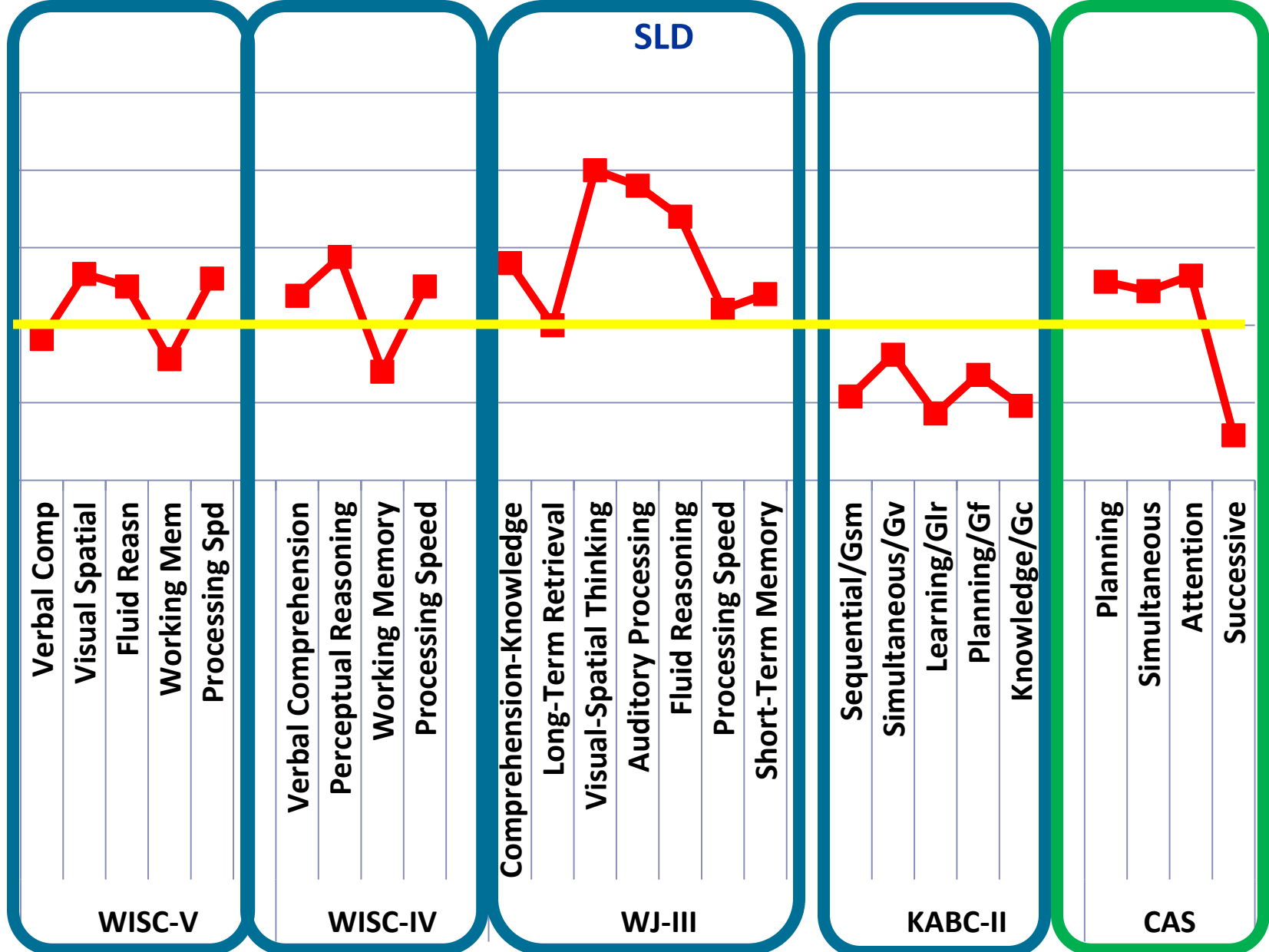
Sequential/Gsm
Simultaneous/Gv
Learning/Glr
Planning/Gf
Knowledge/Gc

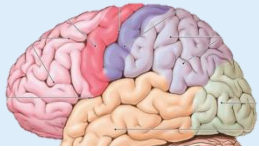
KABC-II

Planning
Simultaneous
Attention
Successive

CAS

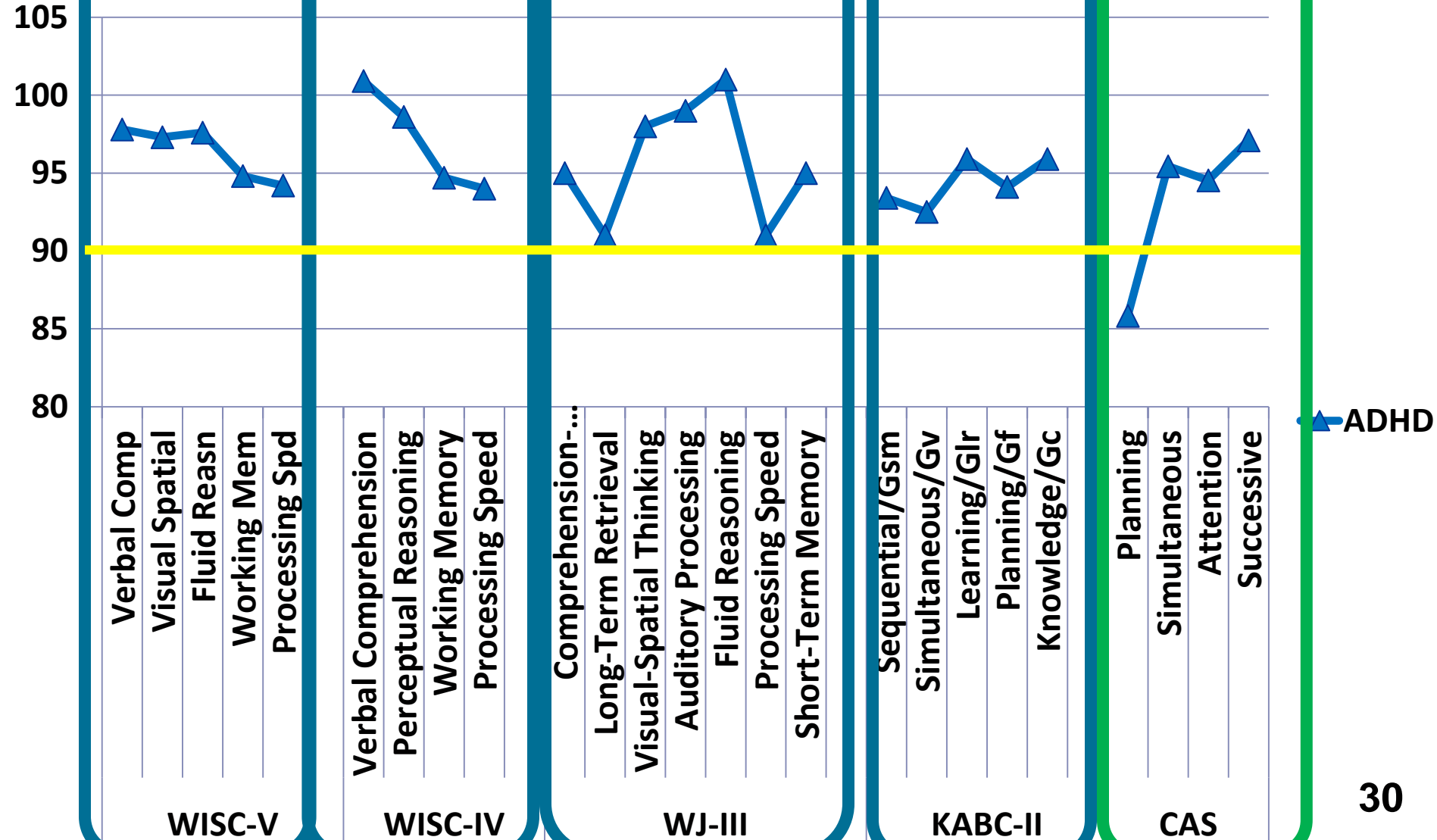
SLD

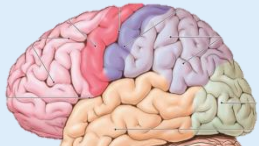




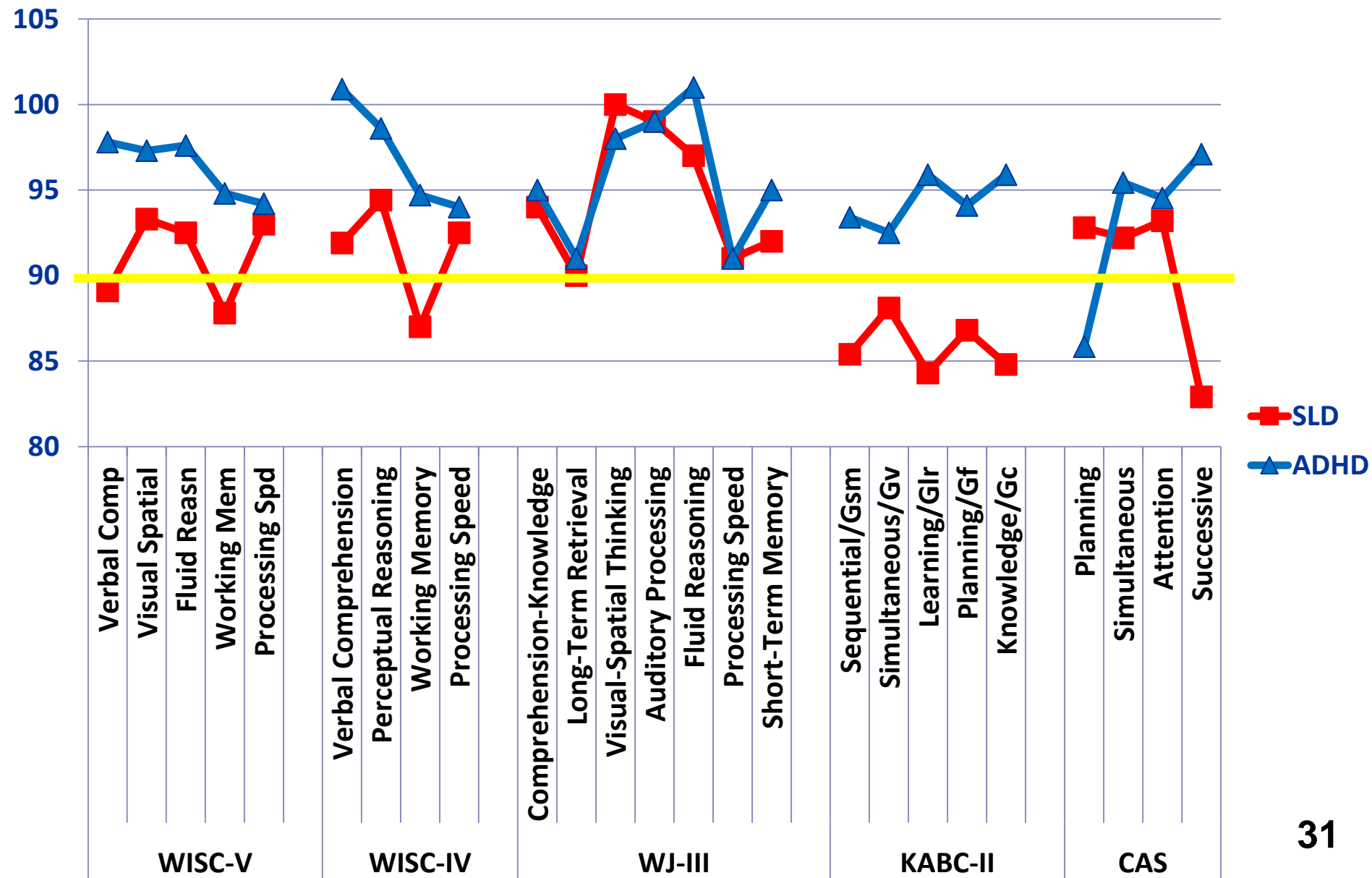
Profiles for students with ADHD

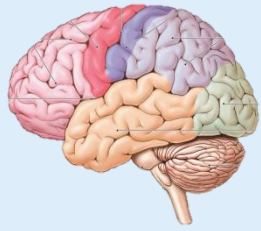
ADHD





Profiles for SLD (reading decoding) & ADHD





Which Ability tests are Non-Discriminatory?

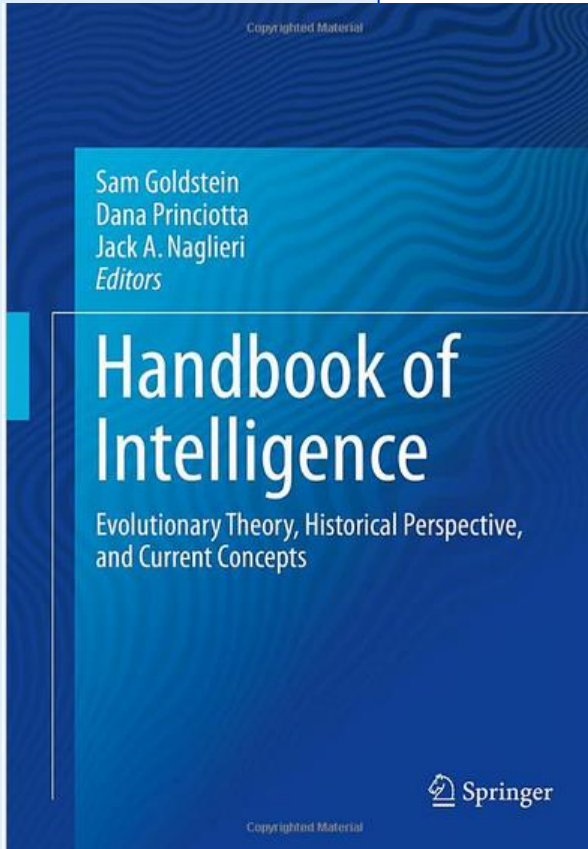
20

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

Jack A. Naglieri

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

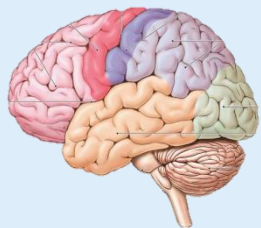
–Ralph Waldo Emerson



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 the American Psychological Association's Emerson Hall to discuss the types of tests they could play with the war effort. The group agreed that psychological knowledge and methods could be of great 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

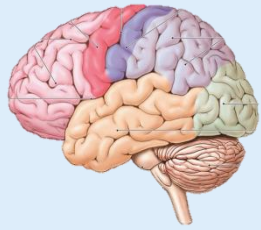
Training School in Vineland, New Jersey, on May 28. The committee considered many types of group tests and several that Arthur S. Otis developed when working on his doctorate under Lewis Terman at Stanford University. The goal was to find tests that could efficiently evaluate a wide variety of men, be 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



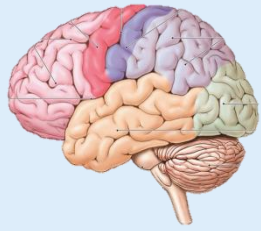
Topical Outline

- Introduction
- NASP SLD Position Paper
- Defining “basic psychological process” (IDEA)
 - Discrepancy/consistency Model for SLD
 - Which ability test to use?
 - ➔ Which achievement test to use?
 - Measure PASS and specific academic skills (Far)
- Case study of SLD (Successive processing disorder and poor academics on Far)



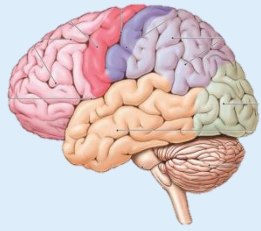
Why Pair CAS2 with Far?

- **WIAT III Reading Comprehension:** Each passage read silently; story stays in front of student while answering free recall questions. *Examiner assumes an EF deficit.*
- **GORT V:** Each passage is read out loud, and then the story is taken away. Questions are multiple choice. *Examiner assumes a Working Memory deficit.*



Why Pair CAS2 with Far?

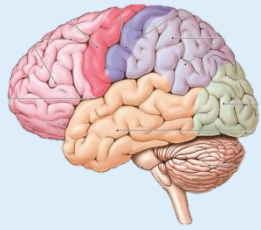
- **WJ IV Passage Comprehension:** A closed procedure where the student reads a short passage and identifies a missing key word that makes sense in the context of the passage. *More a measure of semantic and syntactic knowledge than true comprehension.*
- **KTEA III:** Can read silently or out loud. Student reads each question and story remains in view when answering. *Examiner is unsure of what strategy is implemented to derive a response.*



Feifer Assessment of Reading

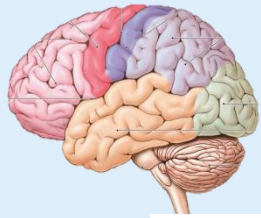
- A neurodevelopmental assessment of reading
- Pre-K to College (Ages 4-21)
- Normative sample included 1,074 students
- 15 subtests in complete battery
- Diagnoses 4 subtypes of reading disorders
- Includes the FAR-S dyslexia screening battery
- Total Far index score and 4 Reading index scores



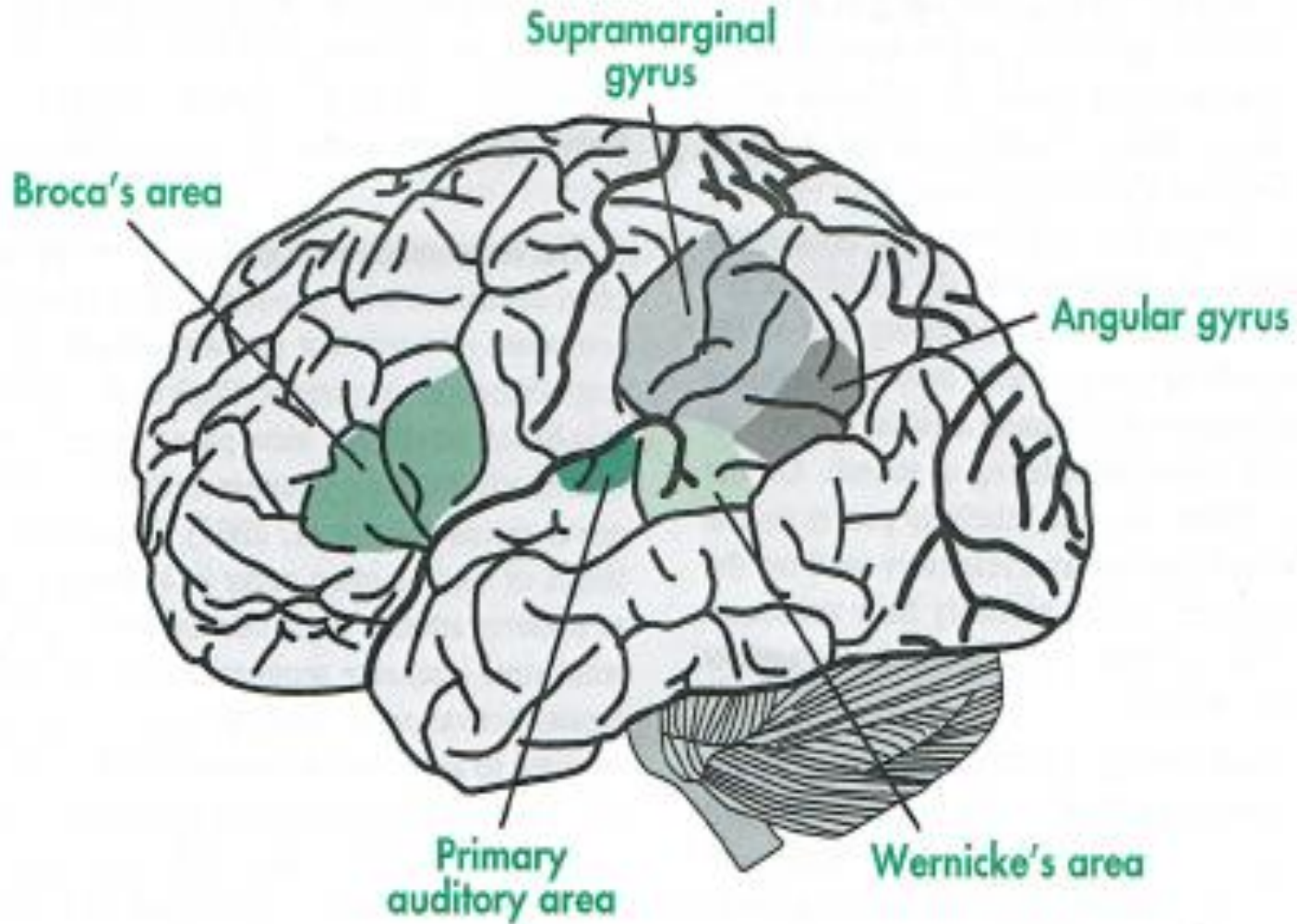


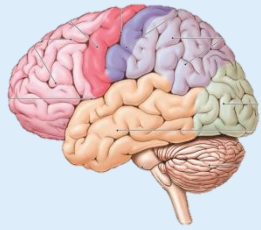
Four Subtypes of Reading Disorders

1. **Dysphonetic Dyslexia** – difficulty sounding out words in a phonological manner.
2. **Surface Dyslexia** – difficulty with the rapid and automatic recognition of words in print.
3. **Mixed Dyslexia** – multiple reading deficits characterized by impaired phonological and orthographic processing skills. Most severe form of dyslexia.
4. **Comprehension Deficits** – mechanical side of reading is fine but difficulty persists deriving meaning from print

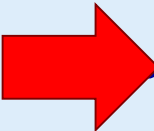


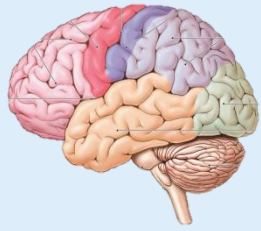
Four Subtypes of Reading Disorders





Topical Outline

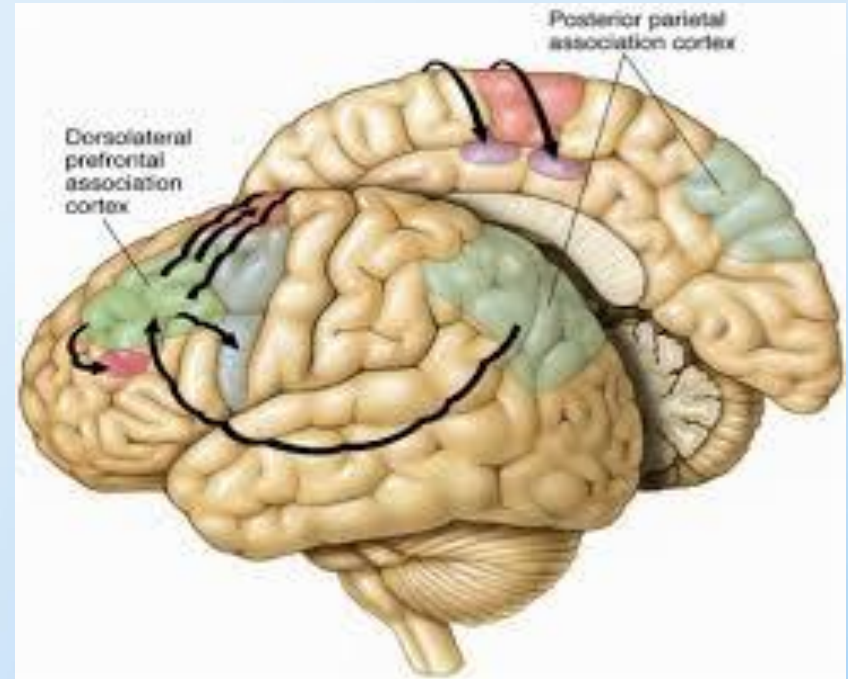
- Introduction
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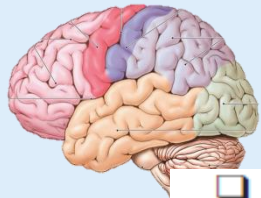


CAS-2 Planning & Reading Comprehension

➤ **Planning** - provides the ability to apply knowledge, use a strategy, and self-monitor performance while working toward a solution.

➤ **Planning & Reading** - read with a specific question or purpose in mind when seeking specific information. In other words, plan a strategy!!





Far Word Recall: Word Planning

PK-Grade 2

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

Trial 2: Bicycle words			
chain	<input type="checkbox"/>	R	Intrusions
wheel	<input type="checkbox"/>	R	
brake	<input type="checkbox"/>	R	
3 rd +			
handlebars	<input type="checkbox"/>	R	

Trial 2: Musical instruments			
drum	<input type="checkbox"/>	R	Intrusions
guitar	<input type="checkbox"/>	R	
trumpet	<input type="checkbox"/>	R	
3 rd +			
piano	<input type="checkbox"/>	R	

Grades 3+

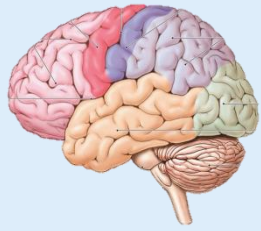
Item	
1.	chain
2.	drum
3.	pepper
4.	wheel
5.	guitar
6.	celery
7.	brake
8.	trumpet
9.	tomato
10.	handlebars
11.	piano
12.	carrot

Trial 2: Fruits and vegetables			
pepper	<input type="checkbox"/>	R	Intrusions
celery	<input type="checkbox"/>	R	
tomato	<input type="checkbox"/>	R	
3 rd +			
carrot	<input type="checkbox"/>	R	

Trial 2 subtotals			
	Number correct	Repetitions	Intrusions

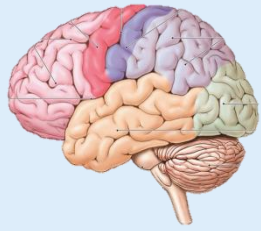
To calculate the Word Recall total, transfer the Trial 1 and Trial 2 subtotals to the appropriate spaces below. Sum the number correct subtotals and record this value in the space provided.

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



Silent Reading Fluency: Text **Planning**

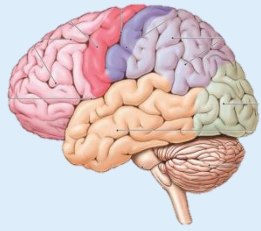
- 2 passages and sets of comprehension questions based on grade level; 60 seconds to read each passage
 - Story is removed before asking questions.
 - 4 questions are literal from story (**Text Attention**)
 - 4 questions are inferential from story (**Text Planning**)



How to Pair Far & CAS2

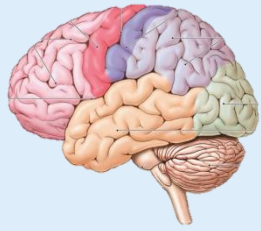
- **CAS2** - determine if there is a cognitive processing weakness (i.e. **Planning**) and whether that particular weakness directly impacts the academic skill in question (Reading Comprehension) on the FAR.
- **Far:** The **Silent Reading Fluency** has individual stories followed by sets of questions. The story is removed, and followed by 4 literal and 4 inferential questions. Pair with **Word Recall** to determine the extent of poor planning at both the word and text level.

**Poor Planning (CAS-2) + Poor Comprehension Index (FAR) =
SLD in Reading Comprehension**



Planning Interventions

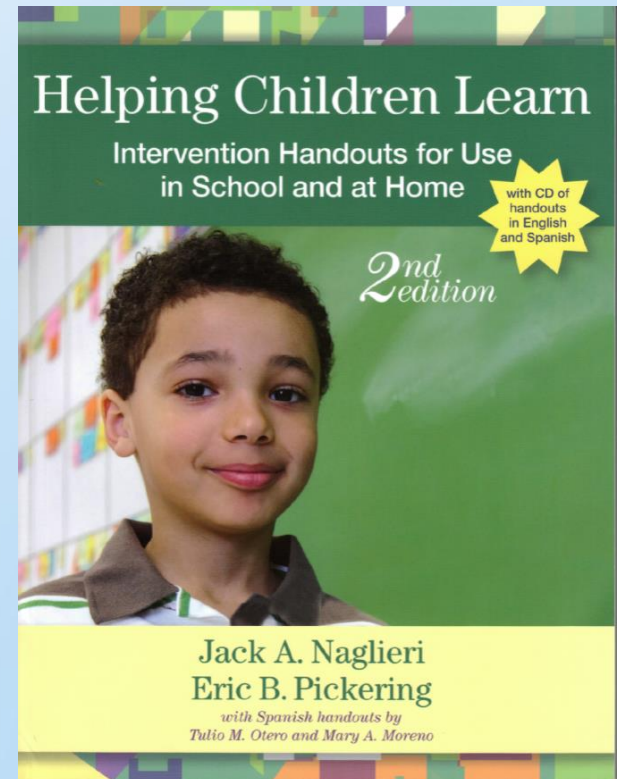
- 1. Directional Questions** – ask questions at the beginning of the text instead of the end.
- 2. Multiple Exposures**– encourage students to skim the material prior to reading, with emphasis on chapter and text headings.
- 3. SOAR to SUCCESS** - A comprehension program for grades 3-6 to help students develop a reading plan.
 - 30-35 minute lessons...18 weeks.
 - 4 Key Strategies: Summarize, Clarify, Question, Predict

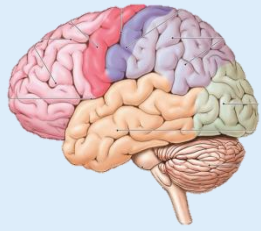


Planning Interventions

4. **Story Maps** – pre-reading activity where graphic organizers are used to outline and organize the information.
5. **Planning Facilitation** – encourages students to use strategies in reading (and math)

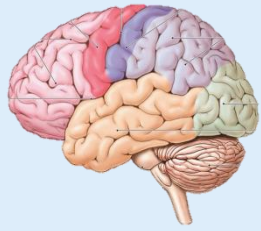
These interventions along with reproducible teacher, parent and student *handouts* are included in **Helping Children Learn-Second Edition**





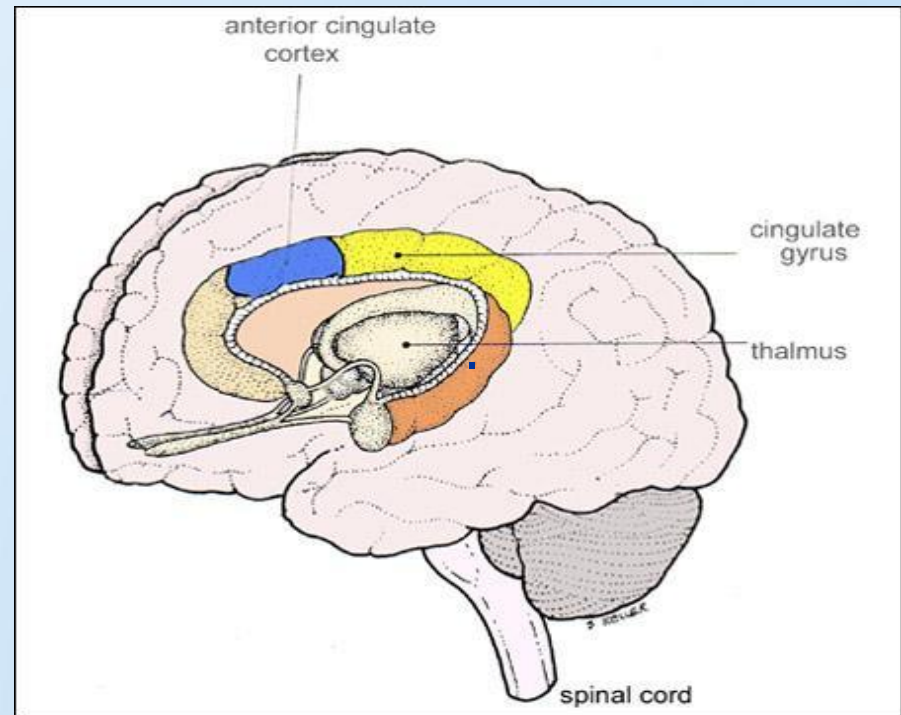
CAS-2 Attention & Reading Accuracy

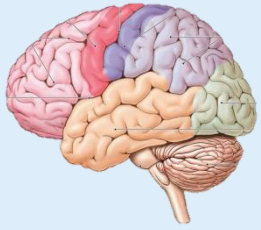
- **Attention** – the ability to selectively focus on a stimulus while inhibiting responses from competing stimuli.
- **Attention & Reading** -the ability to stay focused on the text for prolonged periods of time and resist distractions. Allows the reader to become better engaged with the text, and not just skim the surface.
- **Attentive Reading** - text perception and accurate word identification skills.



Attention and the Brain: Anterior Cingulate Cortex (Goldberg, 2013)

- **Anterior Cingulate Cortex** – allows us to shift our focus from the outside world of objects and events toward the inside world of thoughts and ideas (*self awareness*).
- Linked to effortful control, task motivation, top-down attention, and cognitive flexibility





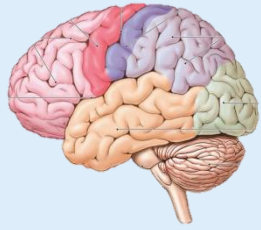
Far Visual Perception: Text Attention

**One 30-second Trial; Letters (PK-2nd) or Words (3rd +)
Letters**

b i y w a v o q
t q t e x n i o

Words

shady tired telephone assist calendar



Silent Reading Fluency: Text Attention

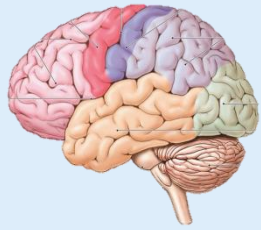
- 2 passages and sets of comprehension questions based on grade level; 60 seconds to read each passage
 - Story is removed before asking questions.
 - 4 questions are literal from story (**Text Attention**)
 - 4 questions are inferential (**Text Abstraction**)



How to Pair Far & CAS2

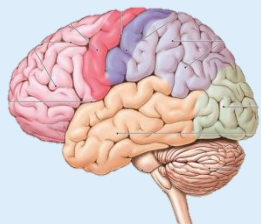
- **CAS-2:** Determine if there is a cognitive processing weakness in **Attention** *and* weakness in **Word Accuracy** or **Text Comprehension** on the Far.
- **Far:** The **Visual Perception** and subtests measure letter/word attention.
The **Silent Reading Fluency** subtest measures text attention.

Poor Attention (CAS-2) + Poor word and/or text attention in reading(FAR) = SLD in Basic Reading Skill.



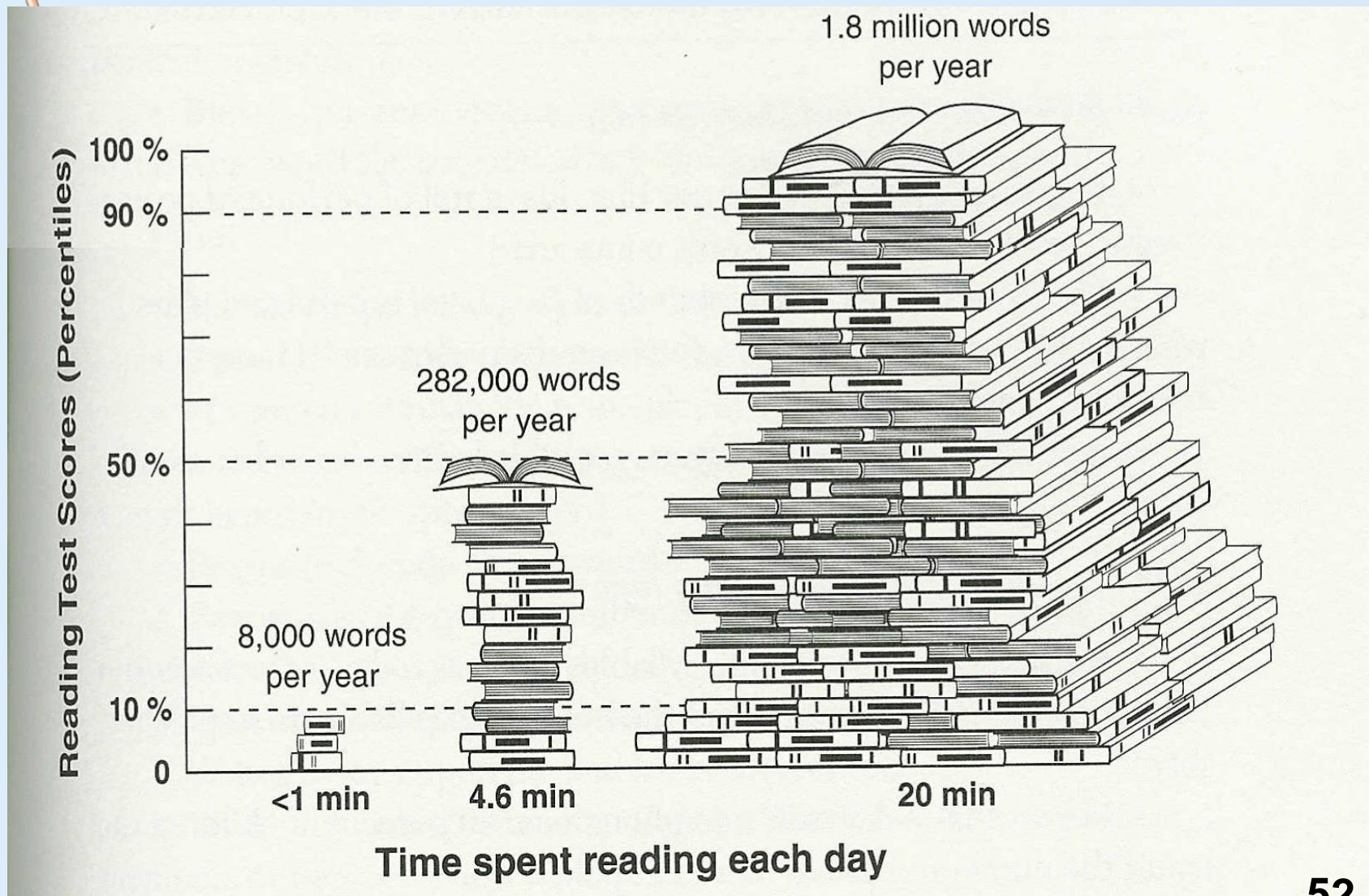
Text Attention Interventions

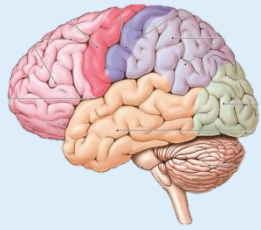
- 1. Active Participation** – encourage active, not passive reading, by having children take notes or putting an asterisk next to important information. Also, multiple colors for highlighting.
- 2. Medication Management** – ADHD students in particular can better focus and sustain their attention if appropriately medicated.
- 3. Classroom Discussions** – introduce new topic areas with a discussion aimed at capturing a student's interest, providing them with background knowledge, and engaging an emotional connection with the text.
- 4. Read, Read, Read!!**



Developing Text Attention

(Shaywitz, 2003)



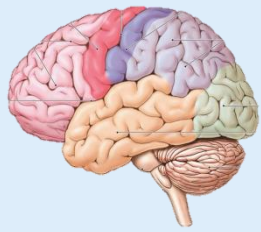


CAS-2 Simultaneous Processing & Reading Fluency

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

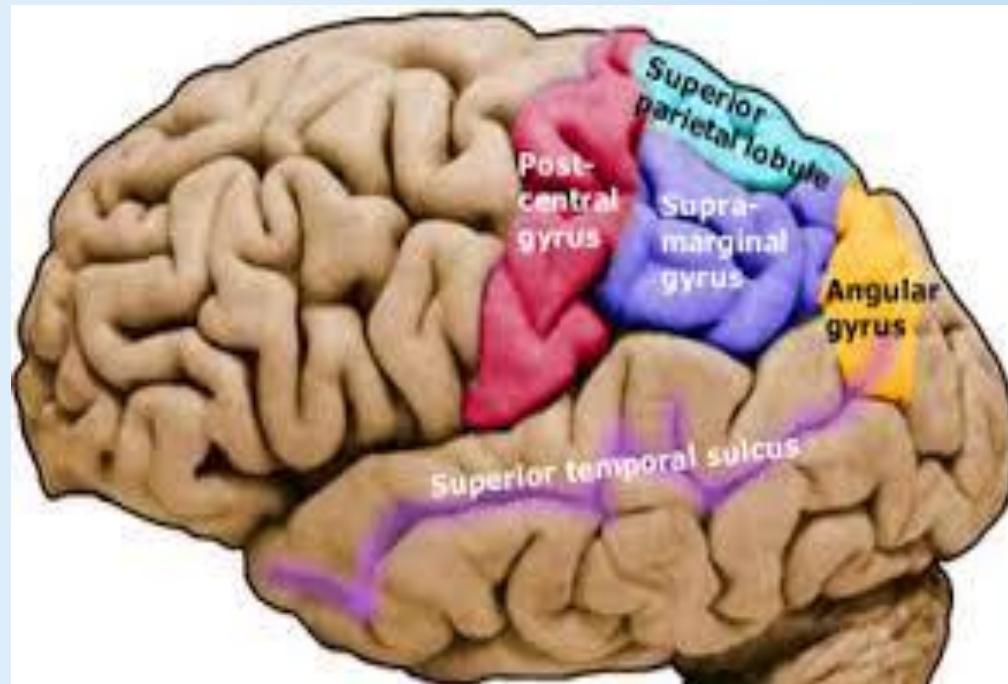
Simultaneous & Reading -the ability to automatically and instantaneously recognize words in print without sounding out each individual phoneme. An extremely important skill in developing reading fluency.

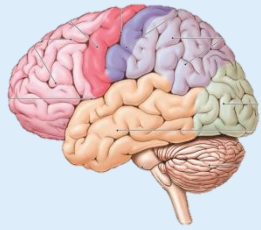




Simultaneous Processing and Reading Fluency

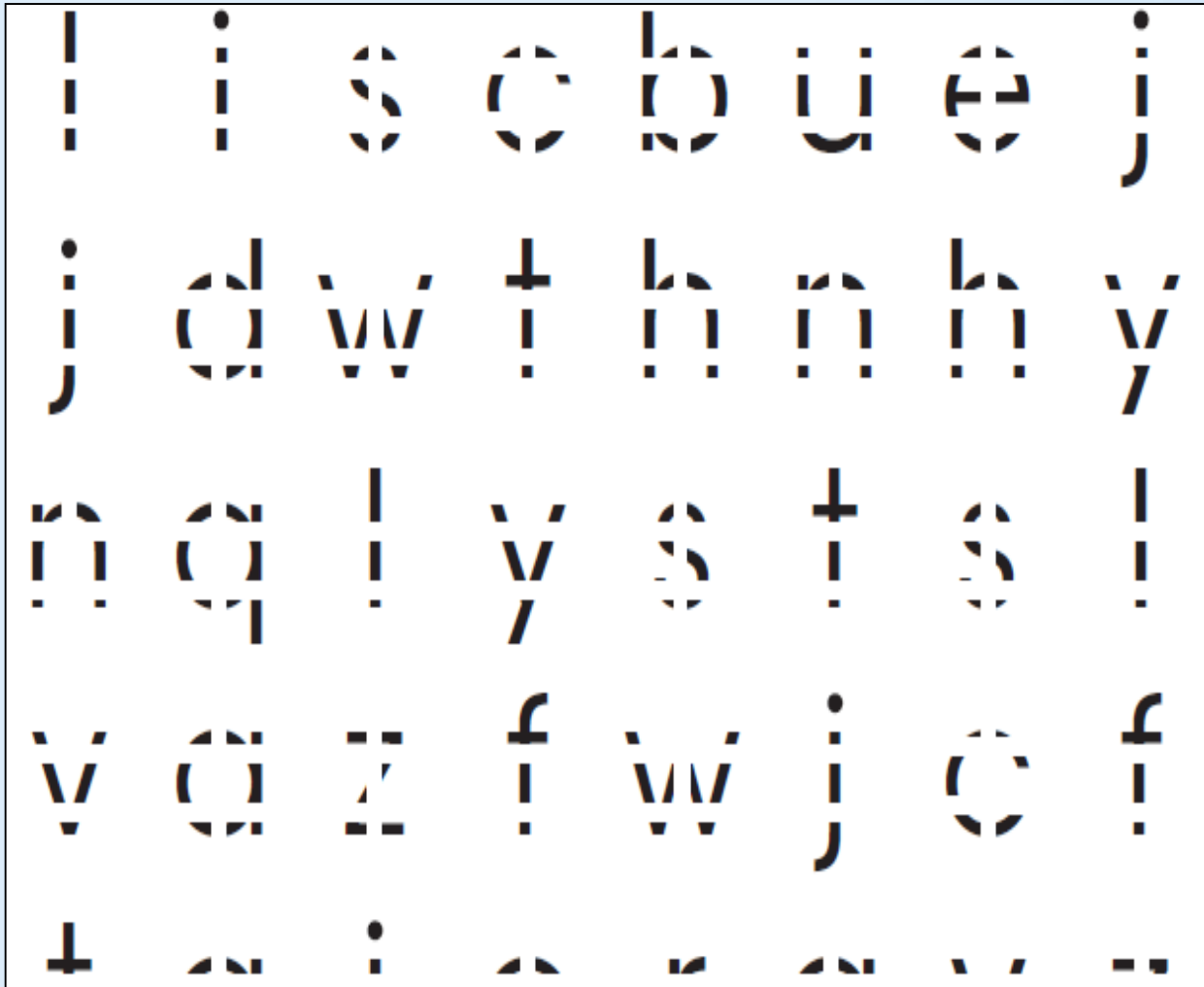
Angular Gyrus– the ability to ascribe meaning to spatial arrays and symbols. Educators often refer to this as **orthographic processing**.

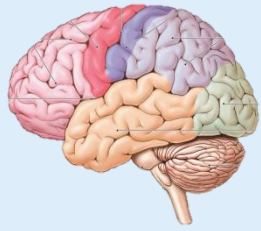




Rapid Automatic Naming: Simultaneous Perception

Far Rapid Naming of Stencils





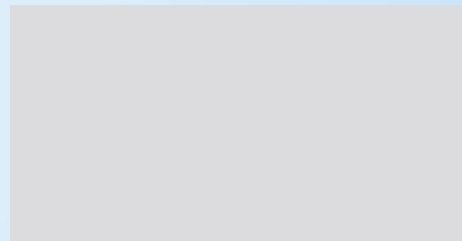
Text Orthography: Simultaneous Processing

Orthographical Processing

The student chooses which letters
appeared in presented word

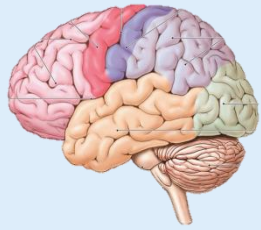
Initial Presentation for 1 sec

epiphany



Response Options

eph phi pip iny



Irregular Word Fluency: Simultaneous Processing

Far Irregular Word Reading Fluency:

(60 seconds)

yacht

debt

answer

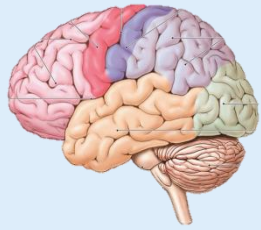
seizure

gnome

malign

conscience

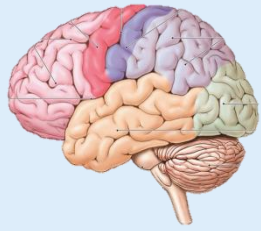
plaque



How to Pair the Far with CAS2

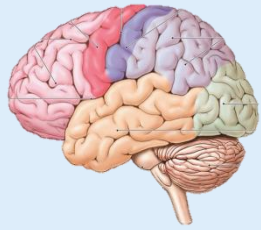
- **CAS-2**: Determine if there is a cognitive processing weakness in **Simultaneous** and a weakness in reading speed and accuracy on the Far.
- **Far**: The **Fluency Index** is a measure of reading efficiency based upon both orthographical processing tests, rapid automatic naming tasks, and reading irregular words.

**Poor Simultaneous (CAS-2) + Poor Fluency Index(FAR) =
SLD in Reading Fluency**



Fluency Intervention: Read Naturally

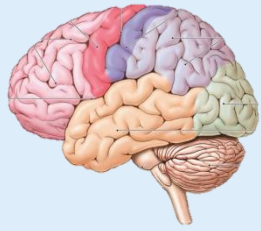
- A fluency based program designed to develop speed, accuracy, and proper expression.
- Designed to be used 3 times per week...30 minutes, mainly for students between 2nd (51wpm) though 8th (133 wpm) grades.
- Each level of the program has 24 non-fiction stories.
 - a) Student placed in level and goal is set.
 - b) Cold read for one minute graphing wpm and identifying difficult words.
 - c) Read with tape three times consecutively.
 - d) Hot read is attempted.
 - e) Comprehension questions involve main idea, details, vocabulary, inferences, & short answers.



CAS-2 Successive Processing & Reading Decoding

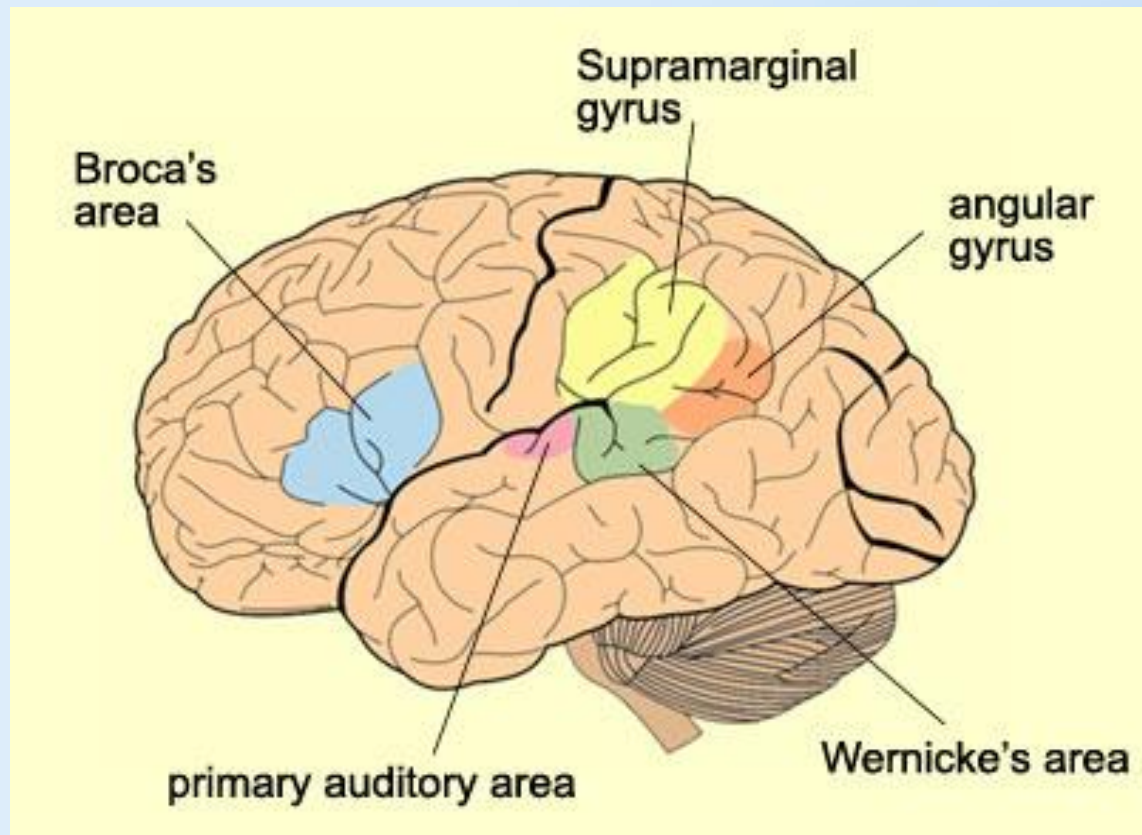
- **Successive** – the ability to put information into a serial order or particular sequence.
- **Successive Processing & Reading** -the ability to sequence and stitch multiple sounds together to identify a word in print.

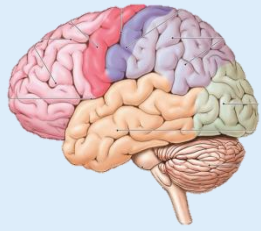




Successive Processing & Reading Decoding

Supramarginal Gyrus – the ability to stitch together sounds in a sequential manner.





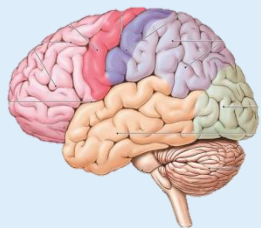
Far Phonemic Awareness: Successive

All grades

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

Blending (9th+) : Advantage

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



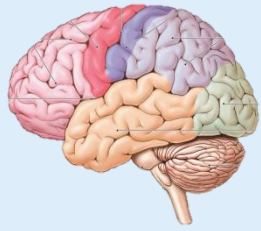
Far Positioning Sounds: Successive

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

Pre-K to 1st: doll



d		ll
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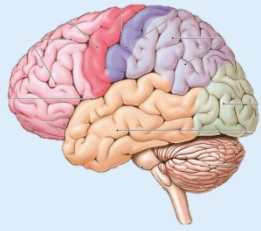


How to Pair the Far with CAS2

➤ **CAS-2**: Determine if there is a cognitive processing weakness in **Successive** and weakness in reading decoding by utilizing the FAR.

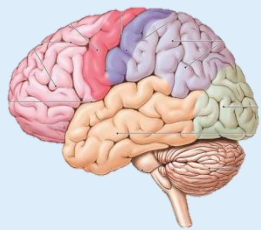
➤ **FAR**: The **Phonological Index** is a measure of decoding skills and accurate word reading based upon phonological processing tests (*i.e. Phonemic Awareness or Positioning Sounds*).

Poor Successive (CAS-2) + Poor Phonological Index (FAR) = SLD in Reading Decoding



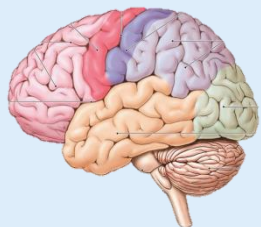
Successive Processing Interventions

- **Alphabetic Phonics (Orton-Gillingham)**
- **Recipe for Reading**
- **SRA Corrective Reading**
- **Earobics II**
- **SIPPS**
- **Lindamood Seeing Stars Program**
- **LEXIA**
- **Horizons**
- **Read Well**
- **DISTAR (*Reading Mastery*)**
- **Fast Forward II (Tallal)**
- **Earobics I**
- **Phono-Graphix**
- **Saxon Phonics Program**
- **Success for All**
- **Ladders to Literacy**
- **Fundations**
- **Road to the Code**
- **Scott Foresman Early Intervention Reading**



Topical Outline

- Introduction
- NASP SLD Position Paper
- Defining “basic psychological process” (IDEA)
 - Discrepancy/consistency Model for SLD
 - Which ability test to use?
 - Which achievement test to use?
 - Measure PASS and specific academic skills (FAR)
- ➔ Case study of SLD (Successive processing disorder and poor academics on Far)



Jacob 6th grade

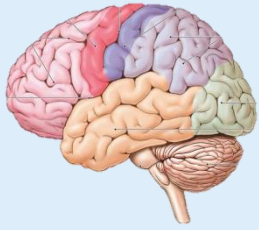
Presenting Concerns: Reading, Math Word Problems, Text Anxiety

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



Jacob 6th grade

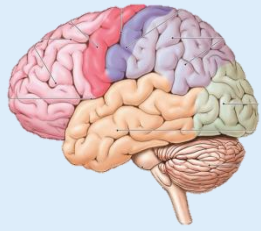
CAS-2	COMPOSITE SCORE	RANGE	PERCENTILE RANK
Planning: the ability to apply a strategy, and self-monitor and self- correct performance while working toward a solution.	92	Average	30%
Attention: the ability to selectively focus on a stimulus while inhibiting responses from competing stimuli.	98	Average	45%
Simultaneous Processing- is the ability to reason and problem solve by integrating separate elements into a conceptual whole, and often requires strong visual-spatial problem solving skills.	90	Average	25%
Successive Processing- is the ability to put information into a serial order or particular sequence.	72	Very Low	3%
CAS-2 COMPOSITE SCORE	86	Below Average	18%



Jacob 6th grade

FAR index	Standard score (95% CI)	Percentile	Qualitative descriptor
Phonological Index	75(+/-5)	5%	Moderately Below Average
Fluency Index	92 (+/-7)	30%	Average
Mixed Index	81 (+/-5)	10%	Below Average
Comprehension Index	97 (±8)	42%	Average
FAR Total Index	84 (±5)	14%	Below Average

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



CAS-2/ Far Advantage

- **PASS** theory is a modern way to define ‘ability’ based on measuring **neurocognitive** processes.
- Demonstrates how a psychological process in question directly impacts the reading process.
- Explains **WHY** a student is having reading difficulty, not just **WHERE** the student is reading.
- More readily able to diagnose SLD using the discrepancy-consistency paradigm.
- Directly informs intervention decision making.