New Developments in CHC Theory, Cross-Battery Assessment for Intervention, and Identification of SLD

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Traditional Cognitive Assessment



1930s to the late 1990s

Today's Agenda



- Overview of the Field of Ability Assessment - Progress in Theories of Intelligence

 - Progress in Test Development
 - Progress in Test Interpretation
- What's New to Cross-Battery Assessment
- Relations between CHC Abilities and Academic Skills
- Brief Overview of Cross-Battery Assessment (XBA)
 - Data Management and Interpretive Assistant v2.0
- Application of CHC in the Schools
 - When evidenced-based interventions don't work
 - Assessment for intervention

Cattell-Horn Gf-Gc Theory







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· Importance of Individual Differences and Differential Diagnosis

Agenda Continued

- Third Method Approaches to SLD Identification
 - Dual Discrepancy/Consistency Operational Definition of SLD (third method, pattern of strengths and weaknesses)
 - XBA PSW-A v1.0 software
- · Linking Assessment Results to Intervention

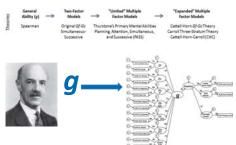
A Landmark Event in Understanding the Structure of Intelligence

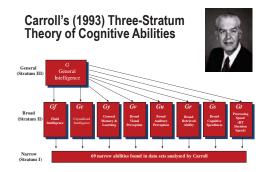
Carroll, J. B. (1993). *Human cognitive* abilities: A survey of factor-analytic studies





Continuum of Progress in Psychometric Theories of Intelligence





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An Integration of the *Gf-Gc* and Three-Stratum Theories of Cognitive Abilities



GC + 10 + 10 + 11 - 15 + 0M + MY - 07 - 11 - 12 + 15 - 11 - 14

The Cattell-Horn-Carroll (CHC) Model of Cognitive Abilities that Guided Intelligence Test Construction from 2000-2011

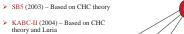
The WJ III



(Woodcock, McGrew, & Mather, 2001)

The first in a flurry of test revisions that represented advances unprecedented in assessment fields

Contemporary Cognitive Assessment













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We Have Knowledge of What Our Tests Measure According to CHC Theory

- Cross-Battery Assessment Approach
 - Classification system

6f - 1 - 10 - 10 - 10 - 10

Grw - 10 - 10 - 15 - 56 - 10 - WA - V - a

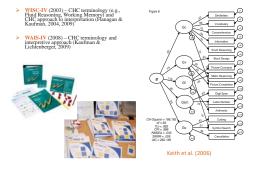
GQ + KM A

GSM - MS - MW - 11

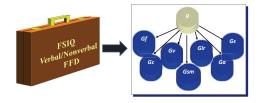
Gs → p → np → n → ns Gt → n1 → n2 → n2

- Joint or CB-CFA
- Expert Consensus
- Helped to establish a nomenclature for the field

Contemporary Cognitive Assessment



Cross-Battery Approach Assisted in Paving the Way for CHC-based Test Development and Interpretation



Continuum of Progress in Tests of Intelligence and Cognitive Abilities



Continuum of Progress in Methods of Interpretation



Table from Kamphaus et al. (2012). A History of Intelligence Test Interpretation. In D.P. Flanagan and P.L. Harrison (Eds.), Contemporary Intellectual Assessment: Theories, Tests and Issues, 3rd edition. New York: Guilford.

Continuum of Progress in Methods of Interpretation

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(Bassed Wave)

Psychometer Profile Analysis
(Bhold Waves)

Psychometer Profile Analysis
(Bhold Waves)

Application of Bassy and Chickward Bassesh hs Psychological Test Interpretation (Bhold Waves)

McGrew (2005) and Schneider and McGrew's (2012)

Refinements to CHC Theory

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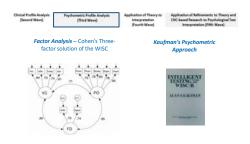
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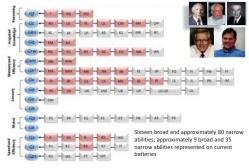
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Continuum of Progress in Methods of Interpretation



Current and Expanded Cattell-Horn-Carroll (CHC) Model of Cognitive Abilities (adapted from Schneider & McGrew, 2012)



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Continuum of Progress in Methods of Interpretation



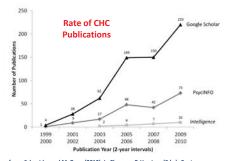


Figure from: Schneider and McGrew (2012). In Flanagan & Harrison (Eds.), Contemporary Intellectual Assessment: Theories, Tests and Issues (3rd edition). NY: Guilford.

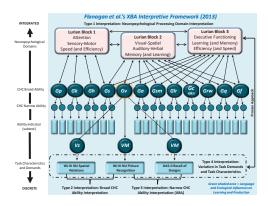
Continuum of Progress in Methods of Interpretation







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Continuum of Progress in Methods of Interpretation



Reading Disability Subtypes

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

Feifer, S. (2011). How SLD Manifests in Reading Achievement. In Flanagan & Alfonso (Eds), Essentials of Specific Learning Disability Identification. Hoboken, NJ: Wiley.

Correspondence Between Diagnosis and Treatment

as syndromes/disorders become more discretely defined, there may be a greater correspondence between diagnoses and treatment

Kratochwill and McGivern's (1996; p. 351)

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Summary of Relations between CHC Abilities and Specific Areas of Academic Achievement (Flanagan, Ortiz, Alfonso & Mascolo, 2006)

	Reading Achievement	Math Achievement	Writing Achievement
Gf	Inductive (I) and general sequential reasoning (RG) abilities play a moderate role in reading comprehension.	Inductive (I) and general sequential (RG) reasoning abilities are consistently very important for math problem solving at all ages.	Inductive (I) and general sequential reasoning abilities (RG) are consistently related to written expression at all ages.
Gc	Language development (LD), lexical knowledge (VL), and listering ability (LS) are important at all ages. These abilities become increasingly important with age.	Language development (LD), lexical knowledge (VL), and listening abilities (LS) are important at all ages. These abilities become increasingly important with age.	Language development (LD), lexical knowledge (VL), and general information (K0) are important primarily after about the 2 rd grade. These abilities become increasingly important with age.
Gsm	Memory span (MS) and working memory capacity.	Memory span (MS) and working memory capacity.	Memory span (MS) is important to writing, especially spelling skills whereas working memory has shown relations with advanced writing skills (e.g., written expression).
Gv	Orthographic Processing – reading fluency	Visualization is important primarily for higher level or advanced mathematics (e.g., geometry, calculus).	Orthographic Processing - spelling
Ga	Phonetic coding (PC) or "phonological awareness/processing" is very important during the elementary school years.		Phonetic coding (PC) or "phonological awareness/processing" is very important during the elementary school years for both hosic writing skills and writine expression (primarily before about grade 5).
Glr	Naming facility (NA) or "rapid automatic naming" is very important during the elementary school years. Associative memory (MA) is also important.	Naming Facility (NA); Associative Memory (MA)	Naming facility (NA) or "rapid automatic naming" has demonstrated relations with written expression, primarily writing fluency.
Gs	Perceptual speed (P) abilities are important during all school years, particularly the elementary school years.	Perceptual speed (P) abilities are important during all school years, particularly the elementary school years.	Perceptual speed (P) abilities are important during all school years for basic writing and related to all ages for written expression.

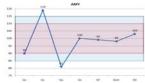
Selecting Interventions Based on Reading Disorder Subtype

Subtype	Brain relationship	Description of Disorder ²	Intervention
Dysphonetic Dyslexia	Supromorginolgyrus, located at the juncture of the temporal and parietal lobes ¹	Difficulty sounding out words in a phonological manner; inability to use phonological route to bridge letters and sounds; over-reliance on visual or orthographic cues; tend to guess on words based on initial letters observed; typically memorise whole words	Intervention should include an explicit phonological approach, especially with younger children (e.g., Wilson Reading System, Fundations; Fast Forword; Earobics I). Mod ality based: Horizons (visual phonics approach). Lindamood (tactile cues). Secondary Level (morphological cues emphasized: Read 180)
Surface Dyslexia	Left fusiform gyrus ^a	Difficulty with the rapid and automatic recognition of words in print; can sound out words, but cannot recognize words in print automatically and effortiestly; letter-by-letter and sound-by-sound readers; over- reliance on phonological properties and underappreciation of orthographic or spatial properties of the word; reading is slow and laborious.	Intervention should focus on automaticity and fluency goals (not necessarily an explicit phonological approach), build right words. Early ages: Beading Recovery, Ages 7- 12: Read Naturally; Over Age 12: Read 180; Wisson.
Mixed Dyslexia	Show weaker modulatory effects from the left justiform gyrus to the left inferior pariental lobes, suggesting deficits integrating both the phonological representation and orthographical representation of words	Multiple vasting deflicts, characterized by impaired phonological and ordingraphic processing skills. Most likely the most severe form of plysiksic, characterized by a combination of poor phonological processing skills, slower rapid and automatic word recognition skills, slower rapid and automatic word recognition skills, inconsistent tragegos comprehension skills, basine enery patterns in reading, doubte-deficit.	Intervention should incorporate a Belonced fibrary approach
Comprehension Deficits	The brain's executive ottention network – modulated primarily by the onterior cingulate gyrus in the frontal lobes ⁴	The mechanical side of reading is fine, but difficulty deriving meaning from print	Intervention should be at the language level, not the phonological level; externalize the reasoning process—Summarize, Clarify, Question and Predict

CHC Theory

- Guides Test Development and Interpretation
- Foundation of Cross-Battery Assessment
- Cognitive Ability and Processing-Achievement Link Facilitates Battery Organization and Interpretation
- CHC-based Cognitive Assessment Informs both Diagnosis and Intervention

Different Cognitive Profiles Suggest Different Diagnoses/Classifications and Thus, Different Interventions



- Amy's cognitive testing shows a significant deficit in phonetic coding she doesn't know how to translate symbols into sounds
- Ga deficit impacts her fluency labored reading
- Lack of decoding and fluency impacts comprehension
- Intervention should focus on Phonemic Awareness (phoneme-grapheme corresponence) – Remediate Ga

Mascolo and Flanagan (2011)

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Amy's Profile

· Dysphonetic Dyslexia

- Interventions selected should be based, in part, on the developmental level of the student
 - Intervention should include an explicit phonological approach, especially with younger children (e.g., Wilson Reading System; Fundations; Fast Forword; Earobics I; Alphabetic Phonics [Uhry & Clark, 2005]). Modality based: Horizons (visual phonics approach). Lindamood (tactile cues). Secondary Level (morphological cues emphasized - Read 180)

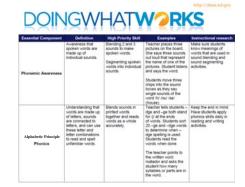
For more information see Steve Feifter (in press), Tailoring Interventions for Students with Reading Difficulties, in Mascolo, Flanagan, & Alfonso (Eds.) (in press). Essentials of Planning, Selecting, and Tailoring Interventions for the Unique Learner. Hoboken, NJ: Wiley.



Programs/Techniques for Ga-Phonetic Coding **Deficits**

- When selecting a program or a technique to intervene with a student with a Ga-Phonetic Coding deficit, consider one that
 - Teaches students to manipulate sounds by using letters (i.e., phoneme-grapheme correspondence)
 - Uses individual or small group format
 - Focuses on reading and spelling development (again, the phoneme-grapheme connection)
 - Explicitly teaches student how to blend sounds





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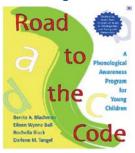
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Another Program for Ga-Phonetic Coding

Wilson Reading®



Another Program for Ga-Phonetic **Coding Deficit**



Recommendation for Parents of Young Children

- The Letter Factory by Leap Frog
- · Talking Word Factory by Leap Frog



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Better Understanding of the Problem Leads to Better Diagnosis and Intervention Planning

What Parents and Teachers Should Know About Cognitive Abilities and Their Impact on Academic Skills and **Academic Success**

Definitions of CHC Broad and Narrow Abilities

Broad Ability	Definition
	The deliberate but flexible control of attention to solve novel, "on-the-spot" problems that cannot be performed by relying exclusively on previously learned habits, schemas, and scripts.

Induction (I)	The ability to observe a phenomenon and discover the underlying principles or rules that determine its behavior.
General Sequential Reasoning (RG)	The ability to reason logically, using known premises and principles.
Quantitative Reasoning (RQ)	The ability to reason, either with induction or deduction, with numbers, mathematical relations, and operators.

Refinements: Piagetian Reasoning (RP) and Reasoning Speed (RE) were deemphasized, primarily because there is little evidence that they are distinct factors.

Under-represented; no RG or RQ No RG Under-represented; no RG or RQ Involves more Gc than other batteries; see KTEA-II for RQ See WJ III ACH for RQ Only cognitive test to assess all three Gf narrow abilities No direct measure of RG, although RG is involved on the Sequential and Quantitative Reasoning subtest; statistically linked to WIAT-III

What is Fluid Reasoning (Gf)?

Fluid Reasoning (*Gf*) refers to a type of thinking that an individual may use when faced with a relatively new task that cannot be performed automatically.

- forming and recognizing concepts (e.g., how are a dog, cat, and cow alike?)
- identifying and perceiving relationships (e.g., sun is to morning as moon is to *night*)
- as into in sto my and in a story, answering the question,
 "What will John do next?")

 reorganizing or transforming
 information (e.g., selecting one of
 several pictures to complete a puzzle).



Jobs/Careers involving High Gf

- Judges
- Surgeons
- Lawyers
- Chief Executives



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Relations between Gf and Reading Achievement

Gf - Induction (I) and general sequential reasoning (RG) play a moderate role in reading

comprehension



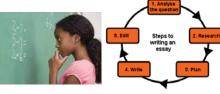
Definitions of CHC Broad and Narrow Abilities

Broad Ability	Definition
Crystallized Intelligence (Gc)	The depth and breadth and of knowledge and skills that are valued by one's culture.

General Verbal Information (K0)	The breadth and depth of knowledge that one's culture deems essential, practical, or otherwise worthwhile for everyone to know.
Language Development (LD)	General understanding of spoken language at the level of words, idioms, and sentences. $ \\$
Lexical Knowledge (VL)	Extent of vocabulary that can be understood in terms of correct word meanings.

Relations between Gf and Achievement





Quantitative Reasoning (RQ) consistently related to math achievement

Induction (I) and General Sequential Reasoning (RG; Deduction) consistently related to written expression

Additional Gc Narrow Abilities

Droad Ability	Deminion
Crystallized Intelligence (Gc)	The depth and breadth and of knowledge and skills that are valued by one's culture.
Listening Ability (LS)	The ability to understand speech.
Communication Ability (CM)	The ability to use speech to communicate one's thoughts clearly.
Grammatical Sensitivity (MY)	Awareness of the formal rules of grammar and morphology of words in speech

What is Crystallized Intelligence (Gc)?

- · a person's knowledge base (or general fund of information) that has built up over time, beginning in infancy.
- · your own personal library or everything you know.



What is Crystallized Intelligence (Gc)?

Having well developed or good Crystallized intelligence means that one understands and uses language well, has an average or better vocabulary, has good listening skills, and is able to use language well via verbal expression.



ood Gc representation; no LS, MY and CM (see WIAT-III) Good Gc representation; no LS, MY and CM (see WIAT-III) Over-representation of VL and KO; no LS, MY and CM (see WIAT-III) Mainly measures Lexical Knowledge; K0 not well represented; see co-normed KTEA-II for other Gc narrow abilities Adequate Gc representation; no LS, MY and CM (see WJ III ACH) Adequate Gc representation; no LS, MY and CM (statistically linked to WJ III ACH) Only cognitive battery with LS representation; no MY and CM (statistically linked to WIAT-III)

Jobs/Careers involving High Gc

· Teaching English, language arts, drama, and debate at k-12 or postsecondary institutions



creative writer

• News correspondent

Based on logical deductions given demands of the job; see also McGrew and Flanagan (1998) for research support

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Relations between Gc Abilities and Reading Achievement

• Gc – Language development (LD), lexical knowledge (VL), general information (KO) and listening ability (LS) are important at all ages. These abilities become increasingly important with age





Definitions of CHC Broad and Narrow Abilities

Broad Ability	Definition
	The ability to detect and process meaningful nonverbal information in sound.

Phonetic coding (PC)	The ability to hear phonemes distinctly.
Speech Sound Discrimination (US)	The ability to detect and discriminate differences in speech sounds (other than phonemes) under conditions of little distraction or distortion.
Resistance to Auditory Stimulus Distortion (UR)	The ability to hear words correctly even under conditions of distortion or loud background noise.

Relations between Gc Abilities and Achievement

• Gc – Language development (LD), lexical knowledge (VL), general information (K0) and listening ability (LS) are important for reading achievement at all ages. These abilities become increasingly important with age





What is Auditory Processing (Ga)?

- Auditory processing (Ga) refers to the ability to perceive, analyze, and synthesize a variety of auditory information (e.g., sounds).
 - auditory processing include listening to words with missing letters and saying the correct word (e.g., hearing "olipop" and saying "lollipop")
 - listening to piano music and identifying the key in which the piece is being played (e.g., C sharp)





What is Auditory Processing (Ga)?

 Children who have difficulty with processing auditory information may have problems with learning letter-to-sound correspondence (e.g., listening to the sound "bas" and identifying it as the letter "b" when given a list of letters to choose from), reading nonsense words (e.g., bab), and sounding out words because of difficulty segmenting, analyzing, and synthesizing speech sounds.





Relations between Ga and Reading Achievement

 Ga – Phonetic Coding (PC) or phonological awareness; phonological processing – very important during the elementary school years.



GO WISC-IV Not blummed WAIS-IV Not blummed WPPSI-III Not blummed WPPSI-III Not blummed WJ III NU Auditory Amend (NC) Lammy in Note (NC) Lammy in Note (NC) SB5 Not blummed DAS-II Autorizated Personing (NC)

Most Intelligence and Cognitive Batteries do not Measure Ga

Only cognitive battery with adequate Ga representation

Contains a measure of Ga-PC

Assessing Phonological Processing Related to Reading

- Examples of assessments of phonological processing directly related to reading:
 - PAL-II Rhyming, Syllables, Phonemes, Rimes



- KTEA-II Phonological Awareness Subtest
- NEPSY-II Phonological Processing Subtest
- WJ III Sound Awareness, Sound Blending, and Incomplete Words Subtests
- DAS-II Phonological Processing Subtest
- CTOPP Blending and Segmenting Subtests



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Relations between Ga and Achievement

Spelling

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Jobs/Careers involving High Ga

- Musician
- Conductor
- Music Teacher fundamentals of pitch and rhythm
- Taking oral dictation



Based on logical deductions given demands of the job; see also McGrew and Flanagan (1998) for research support

Definitions of CHC Broad and Narrow Abilities

Broad Ability	Definition
Short-Term Memory (Gsm)	The ability to encode, maintain and manipulate information in one's immediate awareness.

Memory Span (MS)	The ability to maintain information in primary memory and immediately reproduce the information in the same sequence in which it was represented.
Working Memory Capacity (MW)	The ability to direct the focus of attention to perform relatively simple manipulations, combinations, and transformations of information within primary memory, while avoiding distracting stimuli and engaging in strategic

What is Short-term Memory (Gsm)?

- Short-term memory (Gsm) is the ability to hold information in one's mind and then use it within a few seconds.

 holding a phone number in one's mind long enough to dial it.
 - ds. in one's mind long enough to dial it.



emory is also part of the short-term memory system and involves manipulating or ng information and using it in some way (e.g., saying the months of the year

	Bem	Correct response
LNS-Forward	9-A-6-J-3-P	9-A-6-J-3-P
LNS-Reordered	E-1-R-8-M-7	1-7-8-E-M-R

What is Short-term Memory (Gsm)?

- A child with short-term memory difficulties may have a hard time
 - Following directions
 - understanding long reading passages (e.g., a story read aloud by the teacher)

 - Spelling
 sounding out words
 - and doing math problems (e.g., remembering the steps required to solve long math problems
- Children who have difficulties with short-term memory do better when they are taught how to use strategies to help them remember things.

 Mnemonics



What is Long-term Storage and Retrieval (Glr)?

- This ability does not represent what is stored in long-term memory or what you know. Rather, it represents the process of storing and retrieving information.
- When someone says, "It's on the tip of my tongue," they are having a hard time retrieving something that they know.



Definitions of CHC Broad and Narrow Abilities

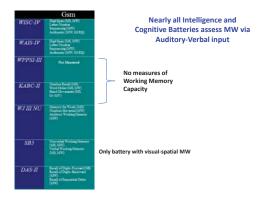
Broad Ability	Definition
Long-Term Storage and Retrieval (Glr)	The ability to store, consolidate, and retrieve
	information over periods of time measured in minutes,
	hours, days, and years.

Learning Efficiency

Associative Memory (MA)	The ability to remember previously unrelated information as having been paired.
Meaningful Memory (MM)	The ability to remember narratives and other forms of semantically related information.
Free Recall Memory (M6)	The ability to recall lists in any order.

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What is Long-term Storage and Retrieval (Glr)?

· Refers to an individual's ability to take in and store a variety of information (e.g., ideas, names, concepts) in one's mind and then retrieve it quickly and easily at a later time by using association.

Additional Glr Narrow Abilities

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Broad Ability	Definition
Long-Term Storage and Retrieval (Glr)	The ability to store, consolidate, and retrieve information over periods of time measured in minutes, hours, days, and years.
	Retrieval Fluency
Ideational Fluency (FI)	The ability to rapidly produce a series of ideas, words, or phrases related to a specific condition or object.
Word Fluency (FW)	The ability to rapidly produce words that share a non-semantic feature.
Figural Fluency (FF)	Ability to rapidly draw or sketch as many things (or elaborations) as possible when presented with a non- meaningful visual stimulus (e.g., a set of unique visual elements).
Naming Facility (NA)	The ability to rapidly name pictures, letters or objects that are known to the individual.

Schneider and McGrew's Conceptualization of Gsm and Glr in Contemporary CHC Theory



Figure 4.6. Conceptual map of memory-related abilities in CHC theory.

Relations between GIr and Reading Achievement

GIr – Naming facility (NA) or "rapid automatic naming" is very important during the elementary school years. Associative memory (MA) also appears to be important in the early elementary school years.



	Glr	
WISC-IV	Nor Manured	
WAIS-IV	Not Mounted	Most Intelligence and Cognitive
WPPSI-III	Not Measured	Batteries do not ivieasure Gir
KABC-II	Atlanto (MA) Rahos (MA) Atlanto Delayed (MA) Rahos Delayed (MA)	Measures Associative Memory only – Learning Efficiency
WJ III NU	Virual: Auditory Learning (MA) Enterviel Planning (FI) Virual: Auditory Learning Dilayed (MA) Eaged Pintura Naming (NA, Ge 50)	Measures Learning Efficiency (MA) and Retrieval Fluency (NA, FI)
SB5	Not Measured	
DAS-II	Equil Names (NA, Gr. ER)* Excell of Organic Suscession (188) Kanal of Organic Delayed (188)	Measures Learning Efficiency (M6) and Retrieval Fluency (NA)

Definitions of CHC Broad and Narrow Abilities

Visual Processing (Gv)	The ability to make use of simulated mental imagery
	(often in conjunction with currently perceived images)
	to solve problems.
Visualization (Vz)	The ability to perceive complex patterns and mentally simulate how they might look when transformed (e.g., rotated, changed in size, partially obscured).
Speeded Rotation (SR)	The ability to solve problems quickly by using mental rotation of simple images.
Closure Speed (CS)	The ability to quickly identify a familiar meaningful visual object from incomplete (e.g., vague, partially obscured, disconnected) visual stimuli, without knowing in advance what the object is.

Additional Gv Narrow Abilities

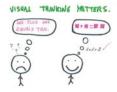
Broad Ability	Definition
Visual Processing (Gv)	The ability to make use of simulated mental imagery (often in conjunction with currently perceived images) to solve problems.
Visual Memory (MV)	The ability to remember complex visual images over
Tidul Helioty (H11)	short periods of time (less than 30 seconds).

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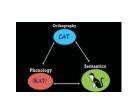
What is Visual Processing (Gv)?

 Visual processing (Gv) is an individual's ability to think about visual patterns (e.g., what is the shortest route from your house to school?) and visual images (e.g., what would this shape look like if I turned it upside down?).



Relations between Gv Abilities and Achievement

• Gv – Orthographic processing





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What is Visual Processing (Gv)?

- This type of ability also involves generating, perceiving, and analyzing visual patterns and visual information.
 - putting puzzles together
 - completing a maze (such as the ones often seen on children's menus in restaurants)
 - interpreting a graph or chart.
- Important when doing advanced math (e.g., geometry and calculus).





Orthography (Wagner & Barker, 1994)

 The system of marks that make up the English language, including upper and lower case letters, numbers, and punctuation marks



Assessing Visual Processing Related to Reading

 Visual processing must be assessed using orthography (letters, words and numbers) rather than abstract designs or familiar pictures

123 ABC

Relationship Between Gv and Achievement



What is Processing Speed (Gs)?

FAST THUNKING

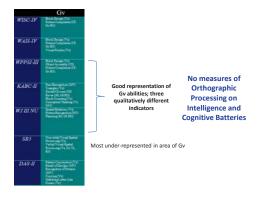
- Processing speed (Gs) refers to an individual's ability to perform simple clerical tasks quickly, especially when under pressure to maintain attention and concentration.
- It can also be thought of as how quickly one can think or how quickly one can take simple tests that require simple decisions.
- Involves sustained/focused and selective attention.

Definitions of CHC Broad and Narrow Abilities

Broad Ability	Definition
Processing Speed (Gs)	The speed at which visual stimuli can be compared for similarity or difference.
Perceptual Speed (P)	The ability at which visual stimuli can be compared for similarity or difference.
Rate-of-Test-Taking (R9)	The speed and fluency with which simple cognitive tests are completed.
Number Facility (N)	The speed at which basic arithmetic operations are performed accurately.
Reading Speed (RS)	The rate of reading text with full comprehension.
Writing Speed (WS)	The rate at which words or sentences can be generated or copied.

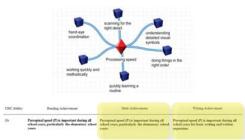
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Relations between Gs and Achievement

 Gs – Perceptual speed (P) abilities are important during all school years, particularly the elementary school years.



Assessing Orthographic Processing Related to Reading

- Examples of assessments of orthographic processing directly related to reading:
 - Test of Silent Word Reading Fluency (TOSWRF)
 - Test of Irregular Word Reading Efficiency (TIWRE)
 - Test of Orthographic Competence (TOC)
 - Process Assessment of the Learner (PAL-II)
 - Early Reading Assessment (ERA)













Most Intelligence and Cognitive Batteries Measure Perceptual Speed – Sustained Attention; Selective Attention

KABC-II and SB5 do not measure Gs test authors do not deny the importance of Gs in learning and achievement

> N, RS and WS are measured by Achievement Batteries

What Combinations of Abilities Are Important for Different Achievements

- Fluid Reasoning Gf
- Crystallized Knowledge Gc
- Short-term Memory *Gsm*
- Long-term Storage and Retrieval Glr
- Visual Processing Gv
- Auditory Processing Ga
- Processing Speed Gs

Top Four Most Important Abilities for Learning and

Academic Success

- Fluid Reasoning (Gf)
- Crystallized Knowledge (Gc)
 - Weaknesses in these abilities constrain learning and achievement
- Executive Functions lead to inconsistencies in Learning and Achievement
- Short-Term Memory (Gsm)
- Lona-Term Storage and Retrieval (GIr)
 - Memory, Retrieval Fluency, and Learning Efficiency
 - Weaknesses in these abilities can be improved upon, bypassed or compensated for at least to some degree
- Important Processes (related to reading)
 - Auditory Processing Phonetic Coding
 - Visual Processing Orthographic Processing
 - Processing Speed Reading Fluency/Automaticity
- Train processing deficits to point where they become skill

 See Flanagan, Ortiz, and Alfonso (2013). Essentials of Cross-Battery Assessment, 3e

The CHC Cross-Battery Assessment (XBA) Approach

- Guidelines for Test Selection and Organization
- Classification of Subtests According to CHC Cognitive and Academic Abilities and Neuropsychological Processes
- · Guidelines for Hypothesis Testing
- Guidelines for Test Interpretation
- Automated Program to Facilitate Data Management, Interpretation, and Reporting of Test Performance

What is Cross-Battery Assessment?

- An approach that neuropsychologists, and astute clinicians in other assessment-related fields, have always followed
- Flanagan and colleagues transformed the practice of crossing batteries into a method that is both psychometrically and theoretically defensible
 - A systematic method of ensuring adequate construct representation across a wide range of cognitive and academic abilities and neuropsychological processes
 - A systematic method of interpreting test data from more than one battery

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CHC Diagnostic Reading XBA Assessment

Broad CHC Markers	Narrow CHC Markers	Relevant WISC-IV tests	XBA with Selected Tests from WJ III and ERA
Gsm Short-Term Memory	Working Memory (MW)	*Digit Span (MS/MW) * Letter-Number Seq. (MW)	* 14 Subtests – More Areas
Gs Processing Speed	Perceptual Speed (P)	* Coding (P) * Symbol Search (P) Cancellation (P)	Assessed Than Any Stand
Gc Crystallized Intelligence	Language Dev. (LD) Listening Ability (LS) General Information (K0) Lexical Knowledge (VL)	* Vocabulary (VL) * Similarities (VL) * Comprehension (LD) Information (KO)	Alone Battery
Glr Long-Term Retrieval	Associative Mem. (MA) Naming Facility (NA)	Word Reasoning (VL)	* Visual-Auditory Learning (MA) * Rapid Pic. Nam. (NA) * Retrieval Fluency (FI)
Ga Auditory Processing	Phonetic Coding (PC)		* Sound Aware (PC/MW) * Sound Blending (PC)
Gv Visual Processing	Orthographic Processing		* Rapid Orthographic Naming * Silent Orthographic Efficiency

Basic Reading Skills Referral for ages 6 to 8 – WISC-IV Selected as Core Battery

iee Essentials of Cross-Battery Assessment, 3rd edition (Flanagan, Ortiz, & Alfonso, 2013) for more example

The Need for Cross-Battery Assessment

A WISC-III detective strives to use ingenuity, clinical sense, a thorough grounding in psychological theory and research, and a willingness to administer supplementary cognitive tests to reveal the dynamics of a child's scaled-score profile



(Kaufman, 1994)

The Cross-Battery Assessment Approach



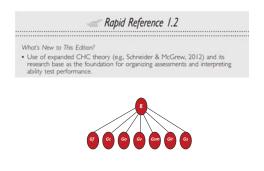
 ${\it Flanagan, Ortiz, and Alfonso, (2013)}. \ {\it Essentials of Cross-Battery Assessment, 3} {\it rd edition.} \ {\it Wiley}$

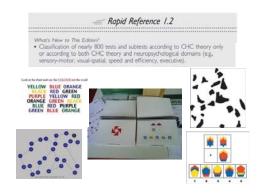
Cross-Battery Assessment

- Based on CHC theory
- Classification System Common nomenclature for test development and interpretation
- Allows for greater breadth and depth of measurement of cognitive abilities in assessment
- First systematic theoretically and psychometrically defensible means of "crossing" batteries

Brief Overview of What's New to the Cross-Battery Assessment Approach







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**Rapid Reference 1.2

What's New to This Edition?

**Inclusion of all current intelligence batteries (i.e., W) III NU, WPPSI-III, WPPSI-IV, WISC-IV, SBS, KABC-II, DAS-II, and WAIS-IV), major tests of academic achievement (e.g., W) III NU ACH, KTEA-II, WIAT-III, KEPSY-III), and numerous special-purpose tests (e.g., DeKEFS, NEPSY-III), and numerous special-purpose tests (e.g., DeKEFS, NEPSY-III), and promerous special-purpose tests, genopolanguage tests, memory tests, phonological processing tests, orthographic processing, and fine motor tests).

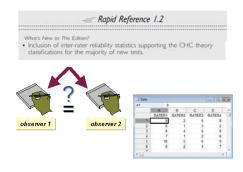


New Features in XBA3 CLASSIFIES ALL TESTS ACCORDING TO NEUROPSYCHOLOGICAL DOMAIN: A KABC-II example

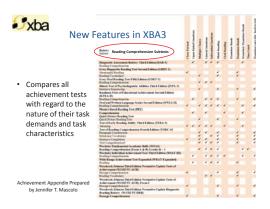


Appendix B in Book or on CD or on DMIA









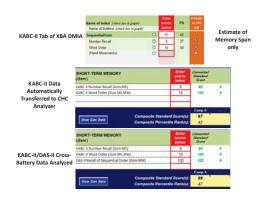
Ropid Reference 1.2

Whor's New to This Edison?

Calculation of all cross-battery clusters in a psychometrically defensible way using median estimates of subtest reliabilities and intercorrelations.

Median Reliability Coefficients Used in Formulae to Calculate XBA Composites

TOTAL 221 40
Note: The median values in this table were used in formulae to calculate CHC broad and narrow ability composites on the CHC Analyzer tab of the DMIA v2.0.



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What's New to The Edison?

Individual of variation in task task demands and characteristics of cognitive, achievement, and neuropsychological batteries—information important for conducting a demand analysis of test performance







Rapid Reference 1.2

Whor's New to This Edison?

• Update and summary of current research on the relations among cognitive abilities, neuropsychological processes, and academic skills with greater emphasis on forming narrow OHC ability composites, given their importance in predicting academic performance.



Compares all cognitive and neuropsychological tests with regard to the nature of their tas demands and task characteristics: A KABC-II example



The feebback wise beaused

Appendix propered by Marlene Sociolo-Dynega and Tara Culcisy and Included in Flanagan, D. P., Ortiz, S. O. and Alfonso, V. C. (2013).
Essentials of Cross Bettery Assessment, 3° edition. Nebaless, NJ: Wiley

Diagnostic Reading Cross-Battery

Misses the last Code Calling and Service Memory Code Indiana Memory Memory Memory Code Indiana Memory Memory Code Indiana

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Report Reference 2.6, WSC-V/WIAT-III- based Diagnosts: Resulting Cross-Settlery Settlement Services (Cross-Settlery Settlement Services) (Cross-Settlement Settlement Settle

Flanagan et al. (2013) Essentials of Cross-Battery Assessment, 3rd Ed. Hoboken, NJ: Wiley

rievant Broad CHC Ability and Navragophological Domain			Supplemental buliness for Demoraling Flamma Ability and Proceeping Community and Tanting Hypotheses
Gs - Processing Speed	RS - Reading Speed (with full comprehension)	WIAT-III Oral Reading Fluency	Oseck manifestation of Gs weakness with WIAT-III Reading Fluency, Accuracy and Nate; WI III/WU ACH Reading Fluency
	P - Perceptual Speed	Symbol Search	Cancellation
Attention			WI II NU COS Attention Clinical Clintor; Other Examples; NEPSY-II Auditory Attention and Response Set; Conners-3;
Executive function			WI II NU COG Executive Processing Clinics Charter, Other Examples: D-REFS Inhibition/winching, NEPS's & Animal Sorting, Inhibition; BRIEF (See EF doesain on CHE Tab of CMIA)

Flanagan et al. (2013) Essentials of Cross-Battery Assessment, 3rd Ed. Hoboken, NJ: Wiley

Differential Diagnosis: Response to Instruction/Intervention and Programming

Intellectual Disability (ID)	General Learning Difficulty (Slow Learner)	Specific Learning Disability (SLD)
Progress Monitoring (or other performance indicates) demonstrates very slow rate of response learning, will not meet typical grade level benchmarks in any academic area	Progress Monitoring (or other performance indicators) demonstrates slow rate of response learning, may meet typical grade level benchmarks in some, but not all, academic areas	Following a comprehensive evaluation and penultural provisions of failured interventions, accordanceducions, comprensatory strategies, and/or modifications, Propress Montatoring (or other performance indicators) demonstrate arts of response-fearings initiate to same grade peers, may approximate or meet typical grade level benchmarks.
Special Education	Tier II and Tier III interventions in General Education, Remodial Programs, 504	Special Education; Remedial Programs; Inclusion (Tier II and Tier III interventions)
Princip Foct Self-Help Skills, Functional Academics, Social Skills	Primary Foci: Functional Academics, Vocational Training: Accommodations, Compensatory Strategies; Social Skills and Self-Eastern	Prissary Foe: Grade Level Performance, College Preparation; Accommodations; Compensatory Strategies; Self-Esteem, Self-Advocacy
Use data from strength-based assessment for intervention planning	Use data from strength-based assessment for intervention planning	Use data from strength-based assessment for intervention planning

Don't Forget

■ Differential Diagnosis is Important

A diagnosis identifies the nature of a specific learning disability and has implications for its probable etiology, instructional requirements, and prognosis. Ironically, in an era when educational practitioners are encouraged to use evidence-based instructional practices, they are not encouraged to use evidence-based differential diagnoses of specific learning disabilities.



Virginia Berninger (2011). Chapter in Flanagan & Alfonso (Eds.), Essentials of Specific Learning Disability Identification. Wiley.

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Individual Differences are Important

Differential Diagnosis

Intellectual Disability, General Learning Difficulty (Slow Learner), and Specific Learning Disability



Differential Diagnosis: Cognitive Ability and Adaptive Behavior



Rapid Reference 1.2

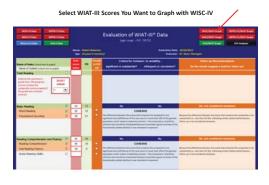
Whor's New to This Edition?

Extensive revision of the XBA DMIA with significantly increased functionality, easier navigation, interpretive statements, and enhanced graphing capabilities (see Rapid Reference 2.4 in Chapter 2 for details).

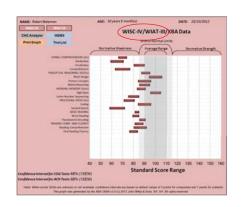
The New Data Management and Interpretive Assistant











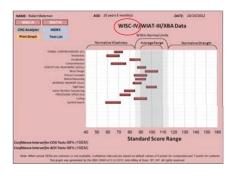
61 63 10/30/2013 10/30/2013

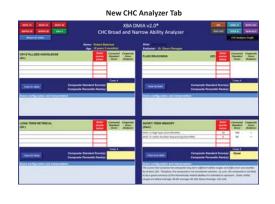
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CHC Analyzer Tab – Gsm Example

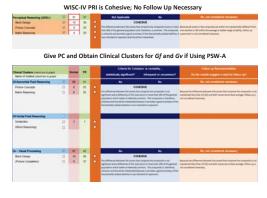


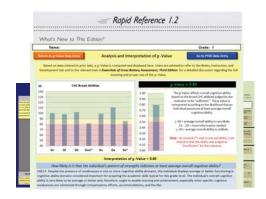
*Note: Eyou have subtests that are based on T-barres, you can asswer then to Boundard Borres (in the Destition II) methy using the some conventor have:	32	** C Some here is equal to Disorderd Some here—*	303	Distay/Use this more
*Base of you have subtests that are based on 7 library, you can convert them to thansland library (in the Javistian II) matrix/ unity the some converter have	31	*- 7-Some home is equal to Disordered Some Rene - 0	72	e- Enterfolie the

Analysis of Gs Subtests from WISC-IV









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Enter XBA Composites on Bottom of Test Tab – WISC-IV Tab Example

Enter Data From Supplemental Tests as Necessary



An Operational Definition of SLD Flanagan, Ortiz, Alfonso, and Mascolo

- Definition first presented in 2002
- Revised and updated in 2006
- Updated in 2007
- Revised and updated in 2011
- Updated and Renamed in 3e of Essentials of XBA3 in 2013 *Dual Discrepancy/Consistency Operational Definition*



Results of a Comprehensive Evaluation of Cognitive and Academic Abilities

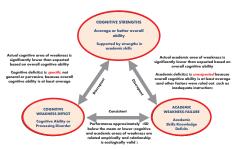


Is Robert's Pattern of Strengths and Weaknesses Consistent with SLD?

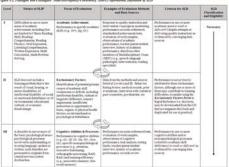
Third Method Approaches

Multiple Methods/Multiple Data Sources

Conceptual Similarities Among Alternative Research-based Approach to SLD



Flanagan, Alfonso, & Mascolo (2011); Flanagan, Fiorello, & Ortiz (2010); Hale, Flanagan, & Naglieri (2008)



Flangan Ority & Alfonso (2013) Essentials of Cross-Rattery Assessment 3rd Edition Hoboken NJ-Wiles





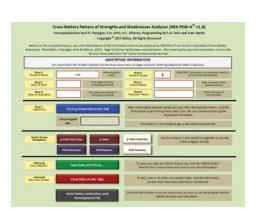
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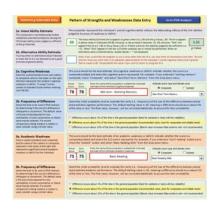
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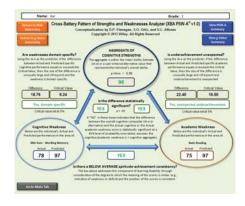
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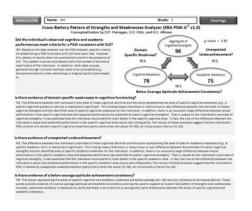


Flanagan, Oritz, & Alfonso (2013). Essentials of Cross-Battery Assessment, 3rd Edition. Hoboken, NJ: Wiley









PSW-A v1.0

Flanagan, Ortiz, and Alfonso (2013)

- Based on the most psychometrically defensible analyses of score differences
 - Reynolds, C. R. (1985). Critical measurement issues in learning disabilities. Journal of Special Education, 18, 451-476.
 - Evans, L. D. (1990). A conceptual overview of the regression discrepancy model for evaluating severe discrepancy between I Q and achievement scores. *Journal of Learning Disabilities*, 23, 406-412.
 - Wright, J. (2002). Best practices in calculating severed discrepancies between expected and actual academic achievement scores: A stepby-step tutorial. Retrieved June 1, 2010 from: http://www.kasp.org/Documents/discrepancies.pdf

Flanagan et al.'s Operational Definition: Level II – Review of Exclusionary Factors

Evaluation and Consideration of Exclusionary Factors for SLD Identification. An evaluation of specific learning disability (SLD) requires an evaluation and consideration of factors, other han a disorder in one or more basic psychological processes that may be the primary cause of a student's academic skill weaknesses and learning difficulties. These factors include (but are not limited to), visiced bentional or psychological fourthernor, environmental or economic disadvantage, cultural and linguistic factors (e.g., limited English proficeres), multificient instruction or opportunity to earn and physical-health factors. These factors may be evaluated via behavior rating scales, parent and technic interviews, classroom observations, attendance records, observational history, family history, visice hearing examé, medical records, piere evaluations, and excellent the contract of the co

Form published in Flanagan, Alfonso, Mascolo, & Sotelo-Dynega (2012). Use of Intelligence Tests in the Identification of Specific Learning Disabilities Within the Context of An Operational Definition. In Flanagan & Harrison (Eds.), Contemporary Intellectual Assessment: Theories, Tests, and Issues [3^{et]} edition). New York: Guilford.

Flanagan et al.'s DD/C Definition of SLD: Level II – Review of Exclusionary Factors

☐ Vision test recent (within 1 year)	☐ History of visual disorder/disturbance
☐ Vision test outdated (> 1 year)	☐ Diagnosed visual disorder/disturbance
□ Passed	Name of disorder:
□ Failed	☐ Vision difficulties suspected or observed
□ Wears Glasses	(e.g., difficulty with far or near point copying, misaligned numbers in written math work, squinting or rubbing eyes during visual tasks such as reading, computers)
NOTES:	

Form downloadable on CD that accompanies Essentials of Cross-Battery Assessment, 3e (Flanagan, Oritz, & Alfonso, 2013)

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McCloskey's Representation of a Cognitive Neuropsychological Discrepancy Model for SLD Identification

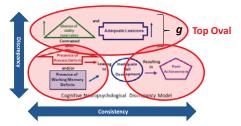


Figure from: McCloskey, Whitaker, Murphy, & Rogers (2012). Intellectual, Cognitive, and Neuropsychological Assessment in Three Tier Service Delivery Systems in Schools. In Flanagan & Harrison (Eds.), Contemporary Intellectual Assessment: Theories, Tests, and Issues (3^{ee} edition). New York: Guilford

Flanagan et al.'s DD/C Definition of SLD: Level II – Review of Exclusionary Factors

☐ Hearing test recent (within I year)	☐ History of auditory disorder/disturbance
☐ Hearing test outdated (> 1 year)	☐ Diagnosed auditory disorder/disturbance
□ Passed	□ Name of disorder:
□ Failed	☐ Hearing difficulties suggested in the referral
☐ Uses Hearing Aids	(e.g., frequent requests for repetition of auditory information, misarticulated words, attempts to self- accommodate by moving closer to sound source, obvious attempts to speech read)
NOTES:	

Form downloadable on CD that accompanies Essentials of Cross-Battery Assessment, 3e (Flanagan, Oritz, & Alfonso, 2013)

Identification of SLD

- Involves more than just examining scores from standardized tests
 - A convergence of data sources is necessary
 - Data should be gathered via different methods
 - Exclusionary factors must be considered and examined systematically

Flanagan et al.'s DD/C Definition of SLD: Level II – Review of Exclusionary Factors

☐ Fine Motor Delay/Difficulty	☐ History of motor disorder
☐ Gross Motor Delay/Difficulty	☐ Diagnosed motor disorder
☐ Improper pencil grip (Specify type:	Name of disorder:
☐ Assistive devices/aids used (e.g., weighted pens, pencil grip, slant board)	☐ Motor difficulties suggested in the referral (e.g., illegible writing; issues with letter or number formation, size, spacing; difficulty with fine motor tasks such as using scissors, folding paper)
NOTES:	

Form downloadable on CD that accompanies Essentials of Cross-Battery Assessment, 3e (Flanagan, Oritz, & Alfonso, 2013)

Flanagan et al.'s DD/C Definition of SLD: Level II – Review of Exclusionary Factors

Form downloadable on CD that accompanies Essentials of Cross-Battery Assessment, 3e (Flanagan, Oritz, & Alfonso, 2013)

Flanagan et al.'s DD/C Definition of SLD: Level II – Review of Exclusionary Factors

☐ Diagnosed psych	tological disorder (Specify:)
Date of Diagnos	da .
□ Family history s	ignificant for psychological difficulties
Disorder present	tly treated - specify treatment modality (e.g., counseling, medication):
Reported difficu	ilties with social emotional functioning (e.g., social phobia, anxiety, depression)
Social-Emotion	al/Psychological issues suspected or suggested by referral
☐ Home-School A	djustment Difficulties
☐ Lack of Motivat	ion
□ Emotional Stres	
□ Autims	
Present Medicat	ions (type, dosage, frequency, duration)
Prior Medication	n Use (type, donage, frequency, duration)
☐ Hospitalization	for psychological difficulties (date(s):)
Deficits in socia	d, emotional, or behavioral [SEB] functioning (e.g., as assessed by standardized rating scale
Significant score	es from SEB measures

Form downloadable on CD that accompanies Essentials of Cross-Battery Assessment, 3e (Flanagan, Oritz, & Alfonso, 2013)

Flanagan et al.'s DD/C Definition of SLD: Level II – Review of Exclusionary Factors

□Limited access to healthcare □Minimal documentati	ion of healt	h history/status
□Chronic health condition (Specify:)		□Migraines
□Temporary health condition (Date Duration:) □Hospitalization (Dates:
□History of Medical Condition (Date Diagnosed)	
☐Medical Treatments (Specify:)		
□Repeated visits to the school surse		□Repeated visits to doctor
☐Medication (type, dosage, frequency, duration:		
NOTES:		

Form downloadable on CD that accompanies Essentials of Cross-Battery Assessment, 3e (Flanagan, Oritz, & Alfonso, 2013

Flanagan et al.'s DD/C Definition of SLD: Level II – Review of Exclusionary Factors

Instructional Factors (Check All that Apply):	
☐ Interrupted schooling (e.g., mid-year school move)	Specify why:
☐ New teacher (past 6 months)	☐ Retained or advanced a grade(s)
□ Nontraditional curriculum (e.g., homeschooled)	☐ Accelerated curriculum (e.g., AP classes)
□ Days Absent	
NOTES:	
Determination of Primary and Contributory Causes	of Academic Weaknesses and Learning Difficulties
Determination of Primary and Contributory Causes (Check One): Based on the available data, it is reasonable to conclude	
(Check One):	
(Check One): Dased on the available data, it is reasonable to conclude	that one or more factors is primarily responsible for

Form downloadable on CD that accompanies Essentials of Cross-Battery Assessment, 3e (Flanagan, Oritz, & Alfonso, 2013

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Flanagan et al.'s DD/C Definition of SLD: Level II – Review of Exclusionary Factors

\square Limited access to educational materials in the home	☐ History of educational neglect
☐ Caregivers unable to provide instructional support	$\ \ \square \ \underline{Frequent} \ transitions \ (e.g., \ shared \ custody)$
☐ Economic considerations precluded treatment	☐ Environmental space issues (e.g., no space
of identified issues (e.g., filling a prescription, replacing broken glasses, tutoring)	for studying, sleep disruptions due to shared sleeping space)
☐ Temporary Crisis Situation	
NOTES:	

Form downloadable on CD that accompanies Essentials of Cross-Battery Assessment, 3e (Flanagan, Oritz, & Alfonso, 2013)

Is At Least Average Overall Ability Consistent with the SLD Construct?



Flanagan et al.'s DD/C Definition of SLD: Level II – Review of Exclusionary Factors

☐ Limited Number of Years in U.S. ()	\square Language(s) Other than English Spoken in Home
☐ No History of Early or Developmental Problems in Primary Language	☐ Lack of or Limited Instruction in Primary Language (# of years)
☐ Current Primary Language Proficiency: (Dates: Scores:	Current English Language Proficiency: (Date: Scores:)
Acculturative Knowledge Development (Circle one: High - Moderate - Low)	☐ Parental Educational and Socio-Economic Level (Circle one: High — Moderate — Low)
NOTES:	

Form downloadable on CD that accompanies Essentials of Cross-Battery Assessment, 3e (Flanagan, Oritz, & Alfonso, 2013)

Individuals with SLD have At Least Average Overall Ability

- The children often have average or above intelligence and good memory in other respects
- Hinshelwood, 1902



"Historical Perspective" Information from Nancy Mather, NYASP 2011

Individuals with SLD have At Least Average Overall Ability

Many of the children have a high degree of intelligence



Orton, 1937

"Historical Perspective" Information from Nancy Mather, NYASP 2011

XBA Guiding Principles

- III. Select tests classified through an acceptable method
 - Factor Analyses or Expert Consensus
 - Use relatively PURE CHC indicators See Appendix B
 - Use 2 or more qualitatively different narrow ability indicators to represent each broad ability domain

 Better representation with more diversity in narrow abilities

 - Use 2 or more qualitatively similar narrow ability indicators to represent each narrow ability domain



XBA Guiding Principles

- IV. When broad abilities are underrepresented, go out of battery
 - Two qualitatively different indicators from another battery
 - Or one qualitatively different indicator and use CHC Analyzer Tab to create a broad ability composite



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Individuals with SLD have At Least Average Overall Ability

"it seems probably that psychometric tests as ordinarily employed give an entirely erroneous and unfair estimate of the

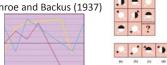


Orton, 1925

"Historical Perspective" Information from Nancy Mather, NYASP 2011

Individuals with SLD have At Least Average Overall Ability

- · "Sometimes children of good general intelligence show retardation in some of the specific skills which compose an intelligence test" (p. 22)
- Monroe and Backus (1937)



"Historical Perspective" Information from Nancy Mather, NYASP 2011

XBA Guiding Principles

- V. When crossing batteries use tests developed and normed within a few years of one another
 - Flynn effect
 - All tests in Cross-Battery book were normed within about 10 years of one another (2001 - 2012)
- VI. Select tests from the smallest number of batteries
 - to minimize error that may be the result of differences in norm sample characteristics
- VII. Establish ecological validity for test findings e.g., manifestation of weaknesses or deficits



XBA Guiding Principles

- I. Select a battery that best addresses the referral concerns
 - Consider co-normed tests first
- II. Use clusters based on *actual norms* when they are available
 - Clusters yielded from the actual test battery rather than formulae based on subtest reliabilities and intercorrelations (although differences between actual norm-based clusters and those generated via formulae are negligible)



Manifestations of Cognitive Weaknesses and Examples of Recomm (Flanagan, Alfonso, & Mascolo, 2011)

CBC Read Cognitive Abbition: Newspeychological Functions	Erio (Definition)	General Manifestations of Cognitive Newspeychological Weskpeyc	Specific Munifestations of the Cognitive Newspeychological Westlance	Recommendations Interventions
Fluid Ressuring (GE)	Over's removing and problem actions; ability to solve problems that are unfamiliar problems that are unfamiliar between the ministrally dependent on prior lessions; which manipular prior is related to infamiliar lessions; county from the prior is related to infamiliar retundi, control in the control of the control of the control of the control of the the control of the control of	Differ share-wite tilligher leved tilsning sand resensing i tilligher leved tilsning sand resensing i translating lesensing lesensing desensing shares av destroyen skulptures for served. Schredning knowledge through extracted tilsning knowledge through extracted tilsning and applying sanderlysagender arg processed only supplied and polyments of the state	Routing Diffusions: (Activing information to text *Admixing mini four it *Admixing mini four it *Admixing mini four it *Admixing with quantitative information (word profilems) *Accounting with quantitative information (word profilems) *Accounting minimum information *Accounting and information *Accounting and promising *Accounting and promising *Consequence of the accounting ideas *Comparing and communing ideas	Coving underly skills in enganisms of the intermediate of the inte

Flanagan, D. P., Alfonso, V. C., & Mascolo, J. T. (2011). A CHC-based Operational Definition of SLD: Integrating Multiple Data Sources and Multiple Data Gathering Methods. In Flanagan, D. P., & Alfonso, V. C. (Eds.), Essentials of Specific Learning Disability Identification. New York, NY: John Wiley &





Implementation of XBA: Step 2 (Continued)

❖If underrepresented or not measured: $\ \ \, \diamondsuit \ \$ Look out of battery to supplement



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Implementation of XBA: Step 1

- ❖ Selection of an Intelligence Battery
 - ❖Consider:
 - ❖Age and Developmental level ❖Floor and Ceiling
 - ❖ English language proficiency ❖Cultural Loading
 - ❖Linguistic Demand
 ❖Specific referral concerns

 - ❖MR (Intellectually Disabled)❖Gifted



Broad and Narrow CHC Ability Representation on Seven Current Intelligence Batteries

	- G	Gr	Ge	Gree	GF	Ga	Gir.
wisc-iv	Marin Reserving (I) Pictury Concepts (I)	Visabulary (VL) Information (X0) Similaritie (VL, GE) Comprehension (X0) Word Resembing (VL, GE)	Block Design (Vs) Ficture Completion (CF, Gr30)	Digir Span (MS, MW) Lerser Narolny Separating (MW) Arithmetic (MW; GE BL2)	Nut Measured	Nut Measured	Symbol Search (P) Coding (R9) Cancellation (P)
WAIS-IV	Mariu Reasoning (I) Figure Weights (RQ)	Viscaludary (VL) Information (K0) Stendarities (VL, GCI) Comprehension (K0)	Block Design (Vz) Pictore Completion (CF, Ge900 Visual Puzzles (Vz)	Digit Span (MS, MW) Letter Number Sequencing (MW) Archestic (MW) GF BQ)	Nut Measured	Not Measured	Symbol Search (P) Coding (R2) Cancellation (P)
EPPSI-IV	Marrin Reasoning (I)	Picture Concepts (Gr. K0, G/E) Viscalishary (VL) Information (K0) Similarities (VL, G/E) Compachemien (K0)	Black Design (Vs) Object Amendy (CS) Pictors Memory (MV)	Not Measured	Not Measured	Not Measured	Aniend Coding (R9) Bog Scoub (P) Catcellation (P) (continued)

Flanagan, Ortiz, and Alfonso (2013). Essentials of Cross-Battery Assessment, 3rd edition. Hoboken, NJ: Wiley

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Implementation of XBA: Step 2

- ❖Identify the CHC Broad Abilities that are measured by the selected intelligence battery
 - ❖Adequate = battery has at least 2 qualitatively different indicators of the broad ability.
 - **❖** *Underrepresented* = only one narrow aspect of the broad ability is included.
 - **❖**Not measured



Broad and Narrow CHC Ability Representation on Seven Current Intelligence Batteries

	G/	G	Gr	Grey	Gb	Cid	Gr
		Bacquire Vocabulary (VL) Picture Naming (VL)	Zoo Locations (MV)				
KABC-II	Parrors Reasoning (II GeV2) ¹ Seary Completion (RG, GeR0) ²	Expensive Vocabulary (VI.) Verbul Kaumledge (VI., Kil) Råddes (VI., GPRG)	Face Recognition (MV) Triangles (Vz) Gestalt Clonuce (CS) Rover (SS, Gf. RG) Mock Counting (Vz) Conciptual Thinking (Vz. GGS)	Number Recall (MS) Word Order (MS, MW) Hand Mesements (MS, Gor MV)	Adaretis (MA) Rebun (MA) Adaretis Delayed (MA) Rebus Delayed (MA)	Not Measured	Not Measured
wj iii Su	Concept Formation (I) Analysis- Symbosis (RCs)	Verhal Comprehension (VL GP1) General Information (800)	Spatial Relations (Vs) Picture Recognition (MV) Planning (SS, G/BG)	Memory for Words (MS) Numbers Reversed (MW) Auditory Working	Visual- Auditory Learning (MA) Retrieval Fluoricy (FI)	Sound Blending. (PC) Auditory Assertion (UR) Incomplete Winds (PC)	Visual Matching (P) Doctolow Speed (P) Pair Carcellatio (P)

Flanagan, Ortiz, and Alfonso (2013). Essentials of Cross-Battery Assessment, 3rd edition. Hoboken, NJ: Wiley

Battery												
WISC-IV	U	4	V	V	- 040	- 040	¥		- 14	-	-	4
WAISIV	1	1	1	1	**	***	4			-		-
WPPSHV	U	1	-	1	94		-					
WI III/NU COG	1	1	1	*	1	1	U					-
585	1	1	U	1	-	- 04	-	40.	0.0	100	00	-
DAS-III	4	1	*	4	1	U	U	**	-	-	**	-
KABCH	4	1	-	U	U	-	- 00	44		24	200	- 44
KTEA-II	**	1			1	U	U	1	U	+		
WIAT-III	U	1		24	U	U	U		U	- 100	100	144
WI III/NU ACH	U	1			U	U	U	1	1			-
NEPSY-II	U	1	V.	1	1	U	U		-	U	1	-
D-KEFS	V	U	U	U			-	44	0.0	0.0	U	-
DWWN	24	U	U	U	44.	200	200	44	-		1	

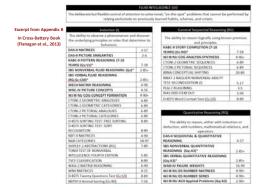
Note: "V" a dequate representation; "U" a underrepresented; "—" not measured. There are four broad CNC abilities not included in this rapid reference (i.e., Offactory Abilities [Go], Phychomotor Speed (Gg), If Rection and Decision Speed (Gl), and Kinestskick Abilities [Gi], If a Pliud Reasoning, GC = Comprehension-Knowledge; Gi v Visual Processing; Gur = Short-term Memory; Gir = Long-term Storage and Retrieval; Se – auditory Processing: Gur = Reading and Writing, GG = (Quantitative Knowledge; Gin = Domain-specific Knowledge; Gg = Psychomotor Abilities; Gh = Tactile Abilities; WAIS-IV = Wechsler

				Memory (MW)	Visual Analis Learning De (MA) Rapid Picture Naming (NA: Ge. R9)		
SBS	Nonverbal Fluid Resourcing (I) Ge) Verbal Fluid Resourcing (I), RCs, Ge-CMO Nonverbal Quantitative Resourcing (I/Q, Gg-A3) Verbal Quantitative Resourcing (I/Q, Gg-R)	Nomerhal Konschelge (KO, LN, GGRG) Verhal Knowledge (V1,K0)	Nemerbal Visual-Spatial Processing (Val- Varbal Visual- Spatial Processing (Va. GeVL, 309)	Nesseeflad Working Memory (MS, MW) Vorbal Working Memory (MS, MW)	Not Measured	Not Measured	Not Measured
DAS-II	Macrico (I) Picture Similarities (I) Sequential & Quantitative Economic (RQ)	Early Number Concepts (VL. Gg. A3) Naming Vocabulary (VL)	Pattern Constitution (Vs) Estall of Designs (MV)	Recall of Digita- Forward (MS) Recall of Digita-	Ripid Naning (NA: Go R9) ⁸ Ricall of Objects	Processing (PC)	Speed of Information Processing (P)
		Word Definitions (VL) Verbal Comprehension (LS) Verbal Similarities (VL, G(I))	Recognition of Pictures (MV) Copying (Vz) Marching Letter-Like Forms (Vz)	Buckward (MW) Recall of Sequential Order (MW)	Immedian (Mis) Recall of Objects- Delayd (Mis)		

Implementation of XBA: Step 3

Identify the CHC Narrow Abilities and Processes that are measured by the selected intelligence battery





XBA is Commonplace – Acknowledge the Procedure in Your Report

• The results presented in this report were compiled from tests that do not share a common norm group; however, test results have been interpreted following the cross-battery approach and integrated with data from other sources including educational records, parent/teacher interviews, behavioral observations, work samples, and other test findings to ensure ecological validity. Standardization was followed for all test administrations. No single test or procedure was used as the sole criterion for classification, eligibility or educational planning. Unless otherwise noted, the results of this evaluation are considered a reliable and valid estimate of [Student's Name] demonstrated skills and abilities at this time.

Adapted from D. Miller (2010)

To Test or Not to Test: Issues Pertaining to Response to Intervention and Cognitive Testing

BY FRANK M. GRESHAM, ALBERTO F. RESTORI, & CLAYTON R. COOK

Why Is This The Question?

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Implementation of XBA: Step 4

- Administer and Score Selected Intelligence Battery and Supplemental tests
 - Follow directions specified by the test publisher's standardization procedures.



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Implementation of XBA: Step 5

Enter Scores into the XBA Data Management and Interpretive Assistant (XBA DMIA v2.0)



"If these tests will give us a basis from which we can start to understand a child's difficulties, they will have justified the time spent on them. Anything which helps educators or parents to *understand* any phase of development or lack of development is of immeasurable value" (p. 189).

Source

Stanger, M. A., & Donohue, E. K. (1937). Prediction and prevention of reading difficulties. New York: Oxford University Press.

Slide from Nancy Mather

RTI at Tiers I and II

•Students (Grade 1) Amy Belinda Carl



- Tier I Screening
- · At-risk in Reading
 - Decoding
 - Fluency
 - Comprehension

Tier II Treatment Protocol

Reading Recovery

Mascolo and Flanagan (201

What Works Clearinghouse

Results. 1 Interventions found using these filters:

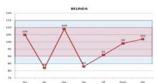
- Outcome Domains: Alphabetics, Early reading/writing, Reading fluency, Reading achievement
- Grade: 1
- Population: General Education Effectiveness: Positive Effects
- Extent of Evidence: Medium to Large
 Delivery Method: Small Group
- Program Type: Supplement

Different Cognitive Ability Profiles Suggest Different Interventions 120 115 110 95 85 80

What Works Clearinghouse



Different Cognitive Profiles Suggest Different Interventions



- · Gc deficit speech-language impairment?
- Comprehension is poor b/c of low Gc
- Poor vocabulary needs to re-read to gain meaning, which impacts fluency
- Intervention should focus on vocabulary development Build Gc-VL, KO and
- Accommodation of extended time may be warranted due to a Gs deficit

Mascolo and Flanagan (2011)

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Reading Recovery Results

- Amy, Belinda, and Carl are making some gains in Reading Recovery
- No appreciable change in reading performance
- · Tier II "nonresponders"



• WHAT DO SCHOOLS DO?

- move to Tier III?
- conduct a "diagnostic assessment"?

Florida Center for Reading Research

What is Text Talk?

Windt Is Text Talk is.

Text Talk is an oral language instruction program intended for all students in grades K3. It is designed to supplement a school's core reading program with 20 minutes of daily
whole or small group instruction delivered by the teacher. The goal of the program is to
develop the student's ability to construct meaning of sophisticated vocabulary words within
the context of read-alouds and explicit vocabulary instruction. These vocabulary words and
ideas are contextualized with explicit descriptions of how the words are used in the story and through interactive discussions.

through interactive discussions.

The Text Talk instructional approach was developed by Drs. Isabel L. Beck and Margaret G. McKeown based on findings from their many years of research. These findings are depicted in their book, <u>Bringing Words to Life</u> which describes the rationale and methods for teaching children rich, robust vocabulary words. These words are not ordinarily found in their speaking vocabulary but would most likely be in their conceptual lexicon and appear in a variety of texts. Described as Tier 2 words in their book, Beck and McKeown underscore the importance of providing students repeated opportunities to hear and use these new vocabulary words in different contexts. The instructional strategies discussed in <u>Bringing</u> <u>Words to Life</u> are applied in the <u>Text Talk</u> program.



Individual Differences Are Important

One Size Does Not Fit All

http://teacher.scholastic.com/products/texttalk/overview/readaloud.htm



Different Cognitive Profiles Suggest Different Interventions

BELLIDA BELLIDA BELLIDA BELLIDA BELLIDA BELLIDA

Other Interventions for Gc Deficit

Recommendations for Gc Deficit

- · Work on vocabulary building
- Teach morphology
- · Activities to build listening skills
- · Explicitly teach listening strategies



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Manifestations of Cognitive Ability Weaknesses and Empirically-based Recommendations and Interventions (Flanagan, Alfonso, & Mascolo, 2011, 2012)

CBC Broad Cognitive Ablities' Neuropsychological Functions	Brief Definition	General Manifestations of Cognitive Newspoyshological Weskness	Specific Musilentation of the Cognitive Newspeychological Westages	Erromandation: Intervention
Crystallized Intel Agency (St)	- Franchis and Englis of Euroschight and digith that are valued by sur's ordinar and digith that are valued by sur's ordinar and the control of the control	Agification water *Viceshalary acquaistion *Castrologie acquaistion *Castrologie acquaistion *Castrologie acquaistion *Castrologie acquaistion *Castrologie acquaistion *Garage the acquaisti	Enoting Egitomies: Oerondag (e.g., und student is attention to develop a not in the later activation) of the later activation	Privide neutrometrich in language and experience. Geographysalis with all exposure to devaluate proposure in the control of t

within the context of an Operational Delatition. In D.P. Flanagan & P.L. Harrison, Contemporary intellectual assessment: Theories, tests, and issues (3rd
addition), New York Citalificed.
Flanagan, D. P., addisson, V. C., & Mascolo, J. T. (2011). A C.P.C.-based Operational Definition of S1D: Integrating Multiple Data Sources and Multiple Data
Gathering Methods. So, Flanagan, D. P., & Allosson, V. C. (86.3). Executed of Specific Learning Building Heading Learning Enablish (196.4), NY, John Wiley, S.

Programs/Techniques for Gc Deficits

- When selecting a program or a technique to intervene with a student with a Gc deficit, it may be helpful to consider one that
 - includes some sort of vocabulary building
 - includes supportive modalities to increase understanding of language used (e.g., visuals, gestures)
 - embeds instruction within a meaningful context (e.g., relating words to learner experiences, communicating word meanings with visuals, increasing listening ability through game-like format)

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Gc Recommendations

- Provide an environment rich in language and experiences
- Frequent practice with and exposure to words
- Read aloud to children
- Vary reading purpose (leisure, information)

Using Instructional Materials (Gc)- helps with lexical knowledge deficit



http://www.harcourtschool.com/glossary/science/

What Do You Do?

- Enrich
- Relate
- Create
- Ratify
- Mnemonic devices
- Multidisciplinary curricula

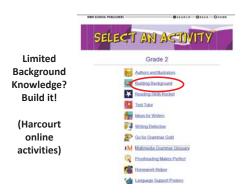


Information on this slide was presented by Elaine Fletcher-Janzen at the 3rd annual assessment conference, Fordham University. New York, NY (May, 2011).

Vocabulary with Sound http://www.harcourtschool.com/glossary/science/



Has the added audio if child needs it





WWC: Reading Fluency interventions

- Fluency Formula[™]
 - Grades 1-6
 - Emphasizes automatic recognition of words, decoding accuracy, and oral expression
 - 10-15 minutes daily; small groups
 - Uses workbooks, read-aloud anthologies, fluency activity cards and audio CDs



Accommodations for Gs Deficit

- Shortened in-class/home assignments Take exams orally
- Provide guided notes/class notes/topical outlines
- Books on tape
- Well established and understood daily routines and instructional routines
 - Because slow processing has a lesser effect when tasks are routine, instructional activities should become as routine or automatic as possible (e.g., important for students with TBI)
- Organizational supports Nonverbal supports

- Peer support

 Cooperative learning
 Use of technology

101 103

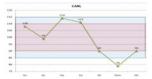
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Belinda also has a Gs Deficit – Suggest Need to Work on Building Fluency

· Choral Repeated Reading

- Students listen to the text being read and follow along by reading aloud and looking at the text (using their fingers to keep pace)
- 10 to 15 minutes
- Text can be higher than students' instructional level
- Comprehension activities can be added
- Feedback and assistance can be provided

Different Cognitive Profiles Suggest Different Interventions



- Gsm deficit memory span and working memory are deficient; visual memory of
- Decoding is poor he cannot hold the complete phonemic string in mind long enough to say the word
- Comprehension is poor because he needs to allocate all memory space decoding words and therefore cannot focus on meaning
- Fluency is impaired because he must re-read the text to gain meaning Intervention should focus on developing a sight word vocabulary
- Carl needs to be taught compensatory strategies to assist with poor Gsm (text previews; guided notes; one comprehension question at a time)

WWC: Reading Fluency interventions

- Peer-Assisted Learning Strategies (PALS)
 - Teachers train students
 - Students partner with peers, alternating the role of tutor while reading aloud, listening, and providing feedback in various structural activities



Build Sight Words

Primer	
al	
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are:	
et	
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be	
black	
brown	
but	
came	
dd	
40	
est.	
four	
get	
good	
have	
he	
into	
like	
new	
no.	
new	
on	
out	

after again any se sold by could be cou

Build Sight Words: Good Gv; Difficulty with Gsm





Carl needs strategies for Gsm deficits (memory span; working memory)

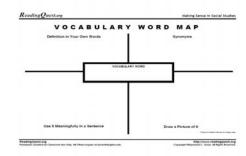
- Give Directions in Multiple Formats:
 - visual and verbal
 - encourage them to repeat directions and explain what they mean
 - give examples of what needs to be done



Glenda Thorne, Ph.D., "10 Strategies to Enhance Students' Memory"; CLD.org



Sight Word Development Aides by Visual Images and Multiple Associations



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Carl needs strategies for Gsm deficits (memory span; working memory)

- Teach Students to Over-learn Material
 - several error-free repetitions are needed to solidify the information
- Teach Students to Use Visual Images and Other Memory Strategies

Glenda Thorne, Ph.D., "10 Strategies to Enhance Students' Memory"; CLD.org

Visual Images Used to Aid Vocabulary Development

- Reading
 - Vocabulary Cartoons II (Burchers, 2000)
 - Target word and definition are included along with a cartoon that reinforces the words meaning in a visual format
 - Grades 3+

Strategies for Gsm deficits (memory span; working memory)

Give Teacher-Prepared Handouts Prior to Class Lectures:

- brief outline
- guided notes
- partially completed graphic organizer that the student would complete during the lecture



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Glenda Thorne, Ph.D., "10 Strategies to Enhance Students' Memory"; CLD.org

Strategies for Gsm deficits (memory span; working memory)

Teach Students to Be Active Readers:

- students should underline, highlight, or jot key words down in the margins
- To consolidate this information in long-term memory, they can make outlines or use graphic organizers



Glenda Thorne, Ph.D., "10 Strategies to Enhance Students' Memory"; CLD.org

Strategies for Gsm deficits (memory span; working memory)

- Help Students Develop Cues When Storing Information:
 - HOMES can be used to represent the names of the Great Lakes – Huron, Ontario, Michigan, Erie and Superior



- Prime the Memory Prior to Teaching/Learning:
 - discuss the vocabulary and the overall topic before a reading comprehension task is given. This will allow them to focus on the salient information and engage in more effective depth of processing.

Glenda Thorne, Ph.D., "10 Strategies to Enhance Students' Memory"; CLD.org

Strategies for Gsm deficits

- Review Material Before Going to Sleep:
 - information studied this way is better remembered
 - any other task that is performed after reviewing and prior to sleeping (such as getting a snack, brushing teeth, listening to music) interferes with consolidation of information in memory



Glenda Thorne, Ph.D., "10 Strategies to Enhance Students' Memory"; CLD.org

Individual Difference ARE Important

- "The danger with not paying attention to individual differences is that we will repeat the current practice of simple assessments in curricular materials to evaluate a complex learning process and to plan for interventions with children and adolescents with markedly different needs and learning profiles." (Semrud-Clikeman, 2005)
- "Nonresponders" provide sound evidence that one size DOES NOT fit all.

Overall Ability and RTI

Fuchs and Young (2006). On the irrelevance of intelligence in predicting responsiveness to reading instruction, 73(1), pp. 8-30.

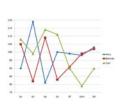
IMPLICATIONS FOR RESEARCH AND PRACTICE

So, findings from our review suggest that IQ frequently predicts responsiveness to reading instruction, and it can explain important variance in such responsiveness. Put differently, IQ often mediates or influences the effectiveness of reading instruction such that it is more or less effective for children with higher versus lower IQ scores. By

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Different Cognitive Ability Profiles Suggest Different Interventions



- All had same academic deficits (decoding, comprehension, fluency)
- All made slow gains with Reading
 Recovery
- All had different patterns of cognitive strengths and weaknesses
- Reading Recovery allocating time to areas that do not need to be trained
- Not enough explicit instruction in main problem area because the intervention was not tailored

Mascolo and Flanagan (2010)

Overall Ability and RTI

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The rate of progress under remedial instruction was found to be a function of:

the child's intelligence

- how early intervention is
- provided
 number of hours of training
- severity of the disability
- behavior and personality difficulties
- supervision of the remedial techniques (Source: Monroe, 1932, p. 157)

"Historical Perspective" Information from Nancy Mather, NYASP 2011

Individual Differences ARE Important

- "A neuropsychological process that is important to reading skills development is working memory – it is a crucial process for early reading recognition and later reading comprehension. One must assess it if one is to develop the most appropriate method of intervention (Teeter et al., 1997)."
- "Given the findings from the neuroimaging and neuropsychological fields of deficient performance on measures of working memory, processing speed, auditory processing ability, and executive functions, evaluation of these skills is necessary to determine the most appropriate program to fit the individual child's need."

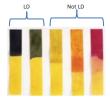
Semrud-Clikeman (2005)

On Third Method Approaches

- Della Tofallo (2010; pp. 180-181) RTRI or Response to the Right Intervention
- Make no mistake...integrated models (third method approaches) of identifying (and serving) students with LDs do not arrive prepackaged along with dozens of studies touting their "scientific validation." However, they are evidence-based because they emanate from the marriage of a collective body of knowledge that has been acquired through research in the fields of neuroscience, pedagogy, assessment, and intervention.

Don't Forget

 There is no LD litmus test; the more well-versed you are in different approaches and methods, the more information you will gain about the child (including how to best help him or her)



What is the Utility of Test Results for Teachers? Linking Assessment to Intervention

Intervention Types

- · Need to differentiate between
 - -Direct Interventions (remediation)
 - -Accommodations
 - -Compensation
 - -Instructional/Curricular Modifications

Mascolo and Flanagan (2011)

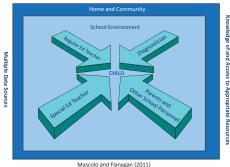
Mascolo, Flanagan, and Alfonso (in press). Essentials of Planning, Selecting, and Tailoring Interventions for the Unique Legraes. Hoboken, NI: Wiley

Tailoring Method	Brief Description	Examples
Modification	Changes content of material to be taught or measured; Typically involves changing or reducing learning or measurement expectations; May change the depth, breadth, and complexity of learning and measurement goals.	Reducing the amount of material that a student is required to learn Samplifying material to be learned Requiring only literal (as opposed to critical/inferential) questions from an end of chapter comprehension check Samplifying test instructions and content
	Changes conditions under which learning occurs or is measured, but does not change or reduce learning or assessment expectations. Accommodations may include timing, flexible scheduling, presentation, setting, and response accommodations.	Estending time on exams Assigning a project in advance or allowing more time to complete the a project Asigning math problems vertically, as opposed to horizontally, Providing a separate room to work Having a student dictate responses to a scribe
	Techniques or programs used to ameliorate cognitive and academic deficies. Academic interventions typically focus on developing a skill, increasing antomaciney of skills, or improving the application of skills. Cognitive interventions typically focus on memory capacity and photosolypical processing. There are many techniques, published programs, and software designed for the purpose of remediation.	Fividence-based programs listed at What Works Clearing House: https://doi.or/100/100/100/100/100/100/100/100/100/10
	Procedures, techniques, and strategies that are intended to bypass or minimize the impact of a cognitive or academic deficit.	Teaching the use of mnemonic devices Organizational aids or techniques Teaching a student to outline or use graphic organizers

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Instructional Planning is Complex and Requires a Team of Experts



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Manifestations of Cognitive Weaknesses and Examples of Recommendations and Interventions

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Definitions of CHC Cognitive Abilities and Neuropsychological Functions, Manifestations of Cognitive Weaknesses and Examples of

CHC Read Cognitive Ablitics: Newspeychological Punctions	Erio (Definition)	General Manifestations of Cognitive Newspeychological Weakpoor	Specific Munifrotations of the Cognitive Newspeechological Westance	Recommendations Interventions
Fluid Removing (GG)	Over's removing and problem charge allright to solver problems that are unfamiliar problems that are unfamiliar between the ministrally dependent on prior lessance which me manipular prior, and the prior of testimosing to prior of restimosing to prior of restimosing to refuse the prior of testimosing to refuse the prior of testimosing to a prior of the prior of the testimosis, them the state of testimosis of resumular restimosis of resumular restimosis of testimosis to a prior of the testimosis of testimosis to a prior of the testimosis of the state of the testimosis of the testimosis of the testimosis of testimosis of testimosis testimosis of testimosis of testimosis of testimosis of testi	Difficulties with I light level thinking and remaining I standaring on generalizing Jenning Jennin	Routing Diffusion: Activating influences from text *Advancing mink hole (s) *Advancing mink hole (s) *Advancing with purpose to the control of the contr	Overlag subsets' still in integrating of species and faving remaining. Vive demonstration to extended relative to the still produce of

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Linking Assessment to Intervention

- Requires good instruments
- Well trained clinicians
- Well trained teachers and special educators
- A mechanism in place for bringing data together to problem-solve in an attempt to offer the most effective instruction and interventions to children

Mascolo and Flanagan (2011)

General Manifestation of Deficit in ${\it Gf}$

- Higher level thinking and reasoning
 - Difficulties with deductive reasoning (general to specific)
 - Difficulties with inductive reasoning (specific to general)
- Transferring or generalizing learning
- Deriving solutions for novel problems
- Extending knowledge through critical thinking
- Perceiving and applying underlying rules or process(es) to solve problems

Academic Manifestations of Gf Deficit

- Reading
 - Difficulties with inferential reading comprehension
 Difficulty abstracting main idea
- Writing
 - Difficulty with essay writing and generalizing concepts
 - Difficulty developing a theme
 - Difficulty with comparing and contrasting ideas
- Difficulties with math reasoning (word problems)
- Difficulties with internalizing procedures and processes used to solve problems
- Difficulty apprehending relationships between numbers

Recommendations for Gf Deficit

- · Develop student's skill in categorizing objects and drawing conclusions
- · Use demonstrations to externalize the reasoning process
 - Gradually offer guided practice (e.g., guided questions list) to promote internalization of procedures or process(es)

Targeted Feedback Example

Ann baked 12 cookies for her school's bake fair. She had 3 customers in her line that each wanted a cookie. How many cookies did she have left after she served the customers?

Х3







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No Name = No Grade

Recommendations for Gf Deficit

- Targeted feedback
- · Cooperative learning
- Think Alouds
- · Reciprocal teaching
- Graphic organizers to arrange information in visual format

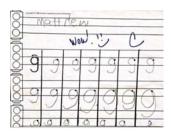
Sort by Color and Shape red red Mom: "Matt, do you know what this says?" Matt: "No, I can't read." Mom: "What do you think it says?" Matt: "I'm bad." Implications: Matt does not want to go to school. He asked to go back to his previous teacher and class. Said he "hates school".

Targeted Feedback

- Feedback to students is important and needs to be concrete and specific
 - Highlight parts of the task that they executed appropriately
 - Identify where things went "wrong" or off-course
 - Describe how to correct the mistakes
 - Provide opportunity for self-correction and/or practice

Unexpectedly, Matt got a **New Teacher**

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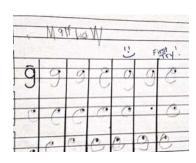




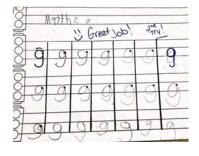


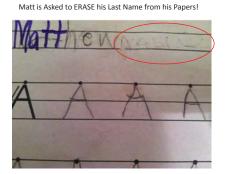
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MATT'S TEACHER RETURNS





•Dylan

*Age 10, Grade 5

•General Education with Supplemental Reading and Math

•Reads at end of 1st grade/early 2nd grade level

-Has been receiving "Wilson" for 3 years

•Math ability at early 2nd grade level

•Writing also significantly below grade level

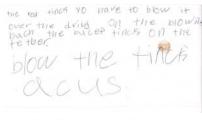
•Receives "speech" weekly, presumably for articulation difficulties

Targeted Feedback is Critical For Student Success

Cooperative Learning

- Can be in pairs or small group
- Students with Gf deficits can be matched with students who have good reasoning skills and who are comfortable with "thinking aloud" and contributing to the group
- Important to assign tasks that capitalize upon student's strengths and assist in accomplishing your goal (e.g., student who needs help with reasoning may read well)
- Feedback/Processing of experience is important

Task; Grade 5: Do something creative with random objects (e.g., balloon, DVD, whistle), such as tell a story or devise a game



The red thing you have to blow it over the DVD on the balloon. Push the purple thing off the table. Blow the thing across.

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•Assignment: Write a summary of the findings from our science experiment. Write in cursive and use proper grammar and punctuation.





Reciprocal Teaching Cards

www.adrianbruce.com/reading/room4/recip



A Weekly Report from Dylan's Teacher





Reciprocal Teaching Cards www.adrianbruce.com/reading/room4/recip



Reciprocal Teaching Cards www.adrianbruce.com/reading/room4/recip



Graphic Organizers

- Make use of graphic organizers (Venn diagrams, concept maps) to help the student
 - Understand the information conceptually through a visual modality
 - More readily link new information to known information
 - Make links from specific to general

Reading and Writing Examples (Gf)

- Inspiration/Kidspiration software (www.inspiration.com)
 - "Created for K-5 learners, Kidspiration" develops thinking, literacy and numeracy skills using proven visual learning principles. In reading and writing, Kidspiration strengthens word recognition, vocabulary, comprehension and written expression. With new visual math tools, students build reasoning and problem solving skills."

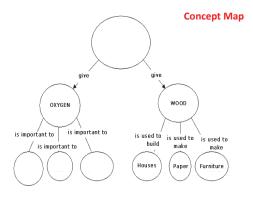
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Subspiration works the way students think and learn and the way teachers teach. As students make visual corrections,



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Programs/Techniques for ${\it Gf}$ Deficits

- When selecting a program or a technique to intervene with a student with a Gf deficit, it may be helpful to consider one that
 - includes explicit strategy instruction
 - focuses on the application of higher level thinking skills to the reading (e.g., making predictions, drawing inferences, abstracting, inferring character feelings) and writing process (e.g., persuasive writing, compare/contrast)
 - is multi-staged and includes modeling up through independent application of the strategy/technique

Manifestations of Cognitive Ability Weaknesses and Empirically-based Recommendations and Interventions (Flanagan, Alfonso, & Mascolo, 2011, 2012)

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CBC Bread Cognitive Ablitics: Nempeychological Functions	Priof Definition	General Manifestations of Cognitive Neuropsychological Wealgasse	Specific Manifestations of the Cognitive Neuropsychological Weakhorn	Excomendation: Interventions
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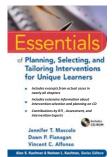
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For more information on making connections between cognitive strengths and weaknesses and instruction and intervention

Available February, 2014



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Manifestations of Cognitive Ability Weaknesses and Empirically-based Recommendations and Interventions (Flanagan, Alfonso, & Mascolo, 2011)

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Conclusions

Psychology in the Schools, Vol. 43(7), 2006 Published caline in Wiley InterScience (www.interscience.wiley.com). © 2006 Wiley Periodicals, Inc. DOI: 10.1002/pits.20187

AMERICAN ACADEMY OF SCHOOL PSYCHOLOGY SURVEY ON THE INDEPENDENT EDUCATIONAL EVALUATION FOR A SPECIFIC LEARNING DISABILITY:
RESULTS AND DISCUSSION

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LINDA C. CATERINO

Arizona State University JOHN DESROCHERS

New Canaam Public Schools, New Canaam, CT

This article reviews the results of a survey of the Fellows of the American Academy of School Psychology (Academy; AASP) regarding the independent educational evaluation (IEE) for a pecific learning disability (SLD). Academy Fellows were asked about important components of the IEE, desirable evaluator qualifications, and recommended criteria for a diagnosis of SLD in

Table 1 Endorsed and Most Important (in bold) Components of an IEE for SLD (N = 50)

	Endorsed			Importa	nce
Component	n	9-	n	%	Rank
Review of school-district records, including responsiveness to intervention	48	96	19	38	7
Consultation with parent(s)	48	96	28	56	3
Assessment of cognitive abilities/processes	48	96	40	80	1
Interview with student	47	94	29	58	2
Consultation with teachers	47	94	21	42	6
Assessment of academic achievement	47	94	27	54	4
Assessment and/or screening for associated problems, other etiologies,					
or co-occurring problems	44	88	15	30	11
Suggestions for meeting educational needs	42	84	22	44	5
Screening for neuropsychological problems (e.g., sensorimotor functions)	41	82	19	38	7
Observation of the student in the classroom	39	78	17	34	9
Report from teacher(s)	38	76	10	20	14
Educational diagnosis (IDEA)	37	74	11	22	13
Psychological diagnosis (e.g., DSM-IV-TR)	35	70	17	34	9
Attendance at school multidisciplinary committee meeting	34	68	14	28	12
Language use and exposure assessment	30	60	8	16	15

$Endorsed\ and\ Most\ Important\ (in\ bold)\ Evaluator\ Qualifications\ to\ Conduct\ an\ IEE\ for\ SLD\ (N=50)$

Evaluator qualification	Endorsed		Importance		
	п	%	п	%	Rank
Assessment experience with children with specific learning disabilities	50	100	25	50	3
Current knowledge of the nature of SLD	49	98	30	60	1
Training with a broad variety of cognitive assessment instruments	49	98	27	54	2
Professional-level ability to communicate assessment results in written form	48	96	19	38	4
Understanding of special education law	43	86	8	16	9
Availability to attend due process hearings or otherwise defend their assessment report	42	84	8	16	9
Training with a broad variety of academic achievement assessment instruments	41	82	14	28	6
Understanding of APA and/or NASP ethics codes	40	80	12	24	8
Experience in direct school psychological services	38	76	14	28	6
Understanding of local education agency special education policies	36	72	4	8	16
Classroom observation skills	34	68	5	10	15
State department of education certification as a school psychologist	34	68	7	14	13
Licensure for independent practice by state department of health or board of					
psychologist examiners	33	66	16	32	5

 Endorsed and Most Important (in bold) Criteria for Diagnosis of SLD in an IEE (N = 47)

 Criteria
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 Abhlity/achievement consistency model
 22
 47
 4
 09
 6

 Number of years behind grade level
 12
 26
 5
 11
 5

 Under achievement cutoff model (achievement level cutoff sorses)
 8
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 02
 7

Three Important Tasks for All School Personnel

- Work to ensure that RTI is up and running well, most especially in the early grades
- Work closely with teachers to create a supportive environment for students where they can access the curriculum at their instructional level

Three Important Tasks for All School Personnel

- Conduct comprehensive assessments of students who do not respond as expected to quality instruction and intervention
 - Include cognitive/neuropsychological tests
 - Connect assessment findings to instructional strategies and interventions

The Pendulum Problem in School Psychology

Before we protest too much that we are not testers and that we decline such restrictive roles, let us remember our heritage, and our roots in the schools, and let us remember also that the well trained school psychologist should be the most skilled of anyone on a school staff in conducting thorough psychological and psychoeducational assessments. Rather than abandoning the testing role to others who will gladly assume the burden and perform the role, less thoroughly, less competently, and less expensively, we need to demonstrate to educators and parents the importance and value of thorough assessment conducted by competent school psychologists (Trachtman, 1979; p.386).

When we can demonstrate consistently that our comprehensive evaluations in the schools lead to positive outcomes for children, the debate will cease

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