Understanding the Dual Discrepancy/Consistency Method for SLD Identification via Excerpts from Case Studies

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Workshop: Part 1

• SLD Definition and Federal Regulations
• The pattern of strengths and weaknesses (PSW) method for SLD identification
• Five PSW methods – similarities and differences
• Cross-Battery Assessment Approach is not synonymous with PSW
• Focus is on the Dual Discrepancy Consistency (DD/C) method
• Origins of DD/C and current conceptualization
• DD/C requires the use of X-BASS
U.S. (IDEIA) – Federal Definition of SLD

“A disorder in one or more of the basic psychological processes involved in understanding or using language, spoken or written, which manifests itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. Such terms include such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia”

Federal Regulations (2006) States the Following

(a) General. A State must adopt, consistent with §300.309, criteria for determining whether a child has a specific learning disability as defined in §300.8(c)(10). In addition, the criteria adopted by the State—

(1) Must not require the use of a severe discrepancy between intellectual ability and achievement for determining whether a child has a specific learning disability, as defined in §300.8(c)(10);

(2) Must permit the use of a process based on the child’s response to scientific, research-based intervention; and

(3) May permit the use of other alternative research-based procedures for determining whether a child has a specific learning disability, as defined in §300.8(c)(10).

(b) Consistency with State criteria. A public agency must use the State criteria adopted pursuant to paragraph (a) of this section in determining whether a child has a specific learning disability.
In Other Words, There are Three Options for SLD Identification

(34 CFR 300.311(a)(5)), (34 CFR 300.309(a)(2)(i))

- Ability-Achievement Discrepancy (AAD)
  - May allow
  - Cannot mandate
- Response-to-Intervention (RTI)
  - Must allow
  - “as part of” a comprehensive evaluation
- Alternative Research-based Procedures (e.g., PSW)

Specific documentation for the eligibility determination

(34 CFR 300.311(a)(5)), (34 CFR 300.309(a)(2)(i))

- Evaluation documentation must consider whether the student exhibits a pattern of strengths and weaknesses
  - In performance, achievement or both
  - Relative to age, State approved grade levels standards, or intellectual development
  - That is determined by the group to be relevant to the identification of SLD using appropriate instruments
Alternative Research-Based Procedure for SLD Identification

**Five PSW Methods**
(listed in publication order)

  - Discrepancy/Consistency *(CAS2 D/C; used only with the CAS2: PASS score analyzers)*
  - *Orange = Name of Method*  
  - *Green = Automation Available*

- Flanagan, Ortiz, & Alfonso (2002-Present)
  - Dual-Discrepancy/Consistency *(DD/C; automated by the PSW component of the Cross-Battery Assessment Software System – X-BASS)*

  - Concordance-discordance model *(CDM; not automated)*

- Dehn & Szasz (2018)
  - Psychological Processing Analyzer *(PPA)*

- Schultz & Stephens (2018)
  - Core-Selective Evaluation Process *(C-SEP; not automated)*

Conceptual Understanding of the PSW Procedure

COGNITIVE STRENGTHS
May be supported by typically developing academic skills.

COGNITIVE WEAKNESS/DEFICIT
Cognitive Ability and/or Processing Weaknesses

ACADEMIC WEAKNESS/DEFICIT
Academic Skills Weaknesses

Consistent

Discrepancy

Discrepant

Develop
Using PSW in the Identification of Specific Learning Disabilities

Discrepancy/Consistency Method (DCM)

The Discrepancy/Consistency Method (DCM) is based on a systematic examination of cognitive and academic achievement test scores. Determining if there is variability in cognitive processing scores is based on two criteria: (a) significant variability in relation to the student’s average processing score (personal weakness) using the ipsative methodology, popularized by Kaufman (1979); DCM is the only PSW method that uses ipsative analysis) and (b) ensuring that the low cognitive processing score is a normative weakness in relation to the national average. The DCM is conceptual and could be used with any measure of psychological processes but has been associated with the PASS (Planning, Attention, Simultaneous, Successive) theory. In this method:

- Psychological processes are based on a test of PASS processes – The Cognitive Assessment System, Second Edition (Naglieri, Das, & Goldstein, 2012) and an evaluation of academic skills from any published test.
- In addition to the analysis of processing scores, a normative weakness in academic performance is required.
- SLD is supported when there is a significant discrepancy between high cognitive processing and low academic scores, a significant weakness in cognitive processing scores (and the weak is below the norm), and a consistency between low processing and low achievement scores.

Resources:

- https://jacknaglieri.com/


Using PSW in the Identification of Specific Learning Disabilities

The Dual Discrepancy/Consistency Method (DD/C)

The Dual Discrepancy/Consistency (DD/C) method is based on the most salient diagnostic markers of SLD that have been prevalent in the literature for decades. DD/C is grounded in the Cattell-Horn-Carroll (CHC) theory and important neuropsychological functions. X-BASS is needed to analyze data following DD/C criteria. In this method:

- An aggregate of cognitive processing and ability strengths is used to predict expected academic performance. In this analysis, base rates are used to determine if the difference between predicted and actual academic performance supports unexpected underachievement. This is the first Discrepancy analysis.
- An aggregate of cognitive processing and ability strengths is used to predict expected cognitive performance. In this analysis, base rates are used to determine if the difference between predicted and actual cognitive performance supports a domain-specific cognitive processing weakness, rather than more general or pervasive cognitive impairment. This is the second Discrepancy analysis.
- An evaluation of cognitive scores is conducted to determine whether the student demonstrates at least average ability to think and reason despite cognitive processing weaknesses.
- An analysis is conducted to determine whether there are below average cognitive and academic scores that are empirically related. This analysis determines Consistency between related cognitive processing and academic skill weaknesses.

Resources:


Using PSW in the Identification of Specific Learning Disabilities

Core Selective Evaluation Process (C-SEP)

The Core-Selective Evaluation Process (C-SEP) is a focused and data-driven assessment and analysis method informed by contemporary cognitive theory and driven by clinical judgment. Multiple sources of data and foundational tests of cognition, achievement, and oral language are integrated with special education policy, professional judgment, and publisher guidance to assess the most salient features of SLD and comprehensively describe an individual’s unique PSW. In this method:

- Consideration of multiple data sources enables the creation of targeted assessment to answer referral concerns.
- Norm-referenced test results are considered as one piece of the evaluation process.
- Integrated data analysis and pattern seeking techniques are utilized, along with task analysis, to establish if a PSW is evident and consistent with policy and to determine what facilitates and inhibits learning for the purpose of educational planning.

Resources:
- https://cssep.online/index.html
Practical Similarities Among PSW Methods

- All authors of these PSW methods follow a multi-source/multi-method approach to comprehensive evaluations for SLD determination.
- They also concur that having information about the cognitive processing weaknesses that are likely interfering with basic skill acquisition and development are critical for multi-disciplinary teams to determine appropriate and targeted interventions and supports for students.
- Other similarities include:
  - Guided by research on the relationships between cognitive/neuropsychological processes and academic skills.
  - Based on reliable and valid measurement and interpretation of cognitive and academic constructs.
  - Allow for differential diagnosis of SLD and other conditions or disorders that result in learning difficulties.
  - Paired with careful, systematic, and thorough examination of exclusionary factors.
  - Support the use of clinical judgment in the diagnostic decision-making process.


Differences Among PSW Methods

Using PSW in the Identification of Specific Learning Disabilities

**Advantages of Using PSW to Identify SLD**

- Helps teachers and parents understand why the student has academic learning difficulties.
- Is therapeutic for students who explore their feelings about their strengths and weaknesses, which is critical for their academic and psychosocial development.
- Allows earlier identification of students with SLD compared to other methods.
- Is based on theory and is used to inform intervention design and selection, as well as differentiated instruction.
- Placement decisions are based on reliable and valid measures of cognitive abilities and processes.
- Provides structure for analyzing test score data.
- Avoids the pitfalls of the intellectual ability-achievement discrepancy method.
- Clinical judgement is used to interpret PSW results within the context of the entire case.
- Is upheld in court and due process proceedings.


**DD/C and XBA are Used Interchangeably**

- They are not interchangeable methods
- They are complimentary methods
- What’s the difference?
Clarification of Concepts and Terms

• “Flexible battery assessment” is used in neuropsychology; “Cross-battery assessment” is used in school psychology and has a similar meaning (i.e., using more than one battery to address referral concerns). These are umbrella terms and, therefore, are not associated with any specific method per se.

• The “Cross-Battery Assessment Approach” or XBA is a method for combining tests from different batteries in a manner that is psychometrically and theoretically defensible. It has its own set of principles and procedures, which were published in the late 1990’s (Flanagan, 1997; McGrew & Flanagan, 1998).

Flexible Battery Assessment

Cross-Battery Assessment

Uses more than one battery in assessment

Flexible-Battery – selected subtests from multiple batteries (traditional neuropsych approach)

Cross-Battery – more than one battery in which all core subtests are administered from each (e.g., WISC-III, WJ-R ACH)

Neither was operationalized to derive psychometrically and theoretically defensible composites using test scores from more than one battery – McGrew & Flanagan (1998) developed principles and procedures for doing this and name their approach the Cross-Battery Assessment Approach.
Findings of Woodcock’s (1990) Joint Factor Analysis of Cognitive Batteries

- The WJ-R measured eight broad Gf-Gc cognitive abilities, while the other intelligence tests measured between three and five.
- When not using the WJ-R, it was suggested that clinicians “cross” batteries to obtain the information necessary for a particular evaluation.

Cross-Battery Assessment APPROACH (XBA) - 1997-2020

**Foundation**
- Gf-Gc Theory and Neuropsychological domains
- Test Classification
- Test Classifications
- Network of Validity Evidence for CHC

**Rationale**
- Practice
- Bridge the theory-practice gap
- Provide a standardized measure/level
- Facilitate integration of CHC/Neuropsychological domains
- Identification of Cognitive, neuropsychological, and academic strengths and weaknesses

**Method**
- Test Development
- Helpfully interpret the substantive and structural validity of tests
- Use composites
- Based on norms or generated by X-BASS v2.0
- Select battery that best addresses referral concerns
- Establish ecological validity for test findings
- Select battery that best addresses referral concerns
- Narrow the theory-practice gap
- Set diagnose subcategories and processes
- Use X-BASS to assist with interpretation
- Follow XBA interpretive guidelines

**Guiding Principles**
- Subcategories that best address referral concerns
- Adaptable, self-assessment, and psychoeducation
- Under-represented or not measured ability is obtained from another battery
- Adaptable, self-assessment, and psychoeducation
- Adequate evidence from the smallest number of batteries to minimize error
- Select battery that best addresses referral concerns
- Under-represented or not measured ability is obtained from another battery
- Narrow the theory-practice gap
- Set diagnose subcategories and processes
- Use X-BASS to assist with interpretation
- Follow XBA interpretive guidelines
Evolution of the Cross-Battery Assessment (XBA) approach 1997 – 2020

The Cross-Battery Approach

First introduced in 1997

CHAPTER 17
A Cross-Battery Approach to Assessing and Interpreting Cognitive Abilities: Narrowing the Gap Between Practice and Cognitive Science

DAWN P. FLANAGAN
KEVIN S. McGREW

A method designed, in part, to narrow the theory-practice gap
First book that fully operationalized XBA

THE THREE PILLARS OF THE CROSS-BATTERY APPROACH — Pillar #1

• The synthesized Horn-Cattell/Carroll Gf-Gc Model of human cognitive abilities (now known as CHC theory)

• Cross-battery assessments are designed around the Gf-Gc model because it has a more comprehensive network of validity evidence than other multidimensional conceptualizations of intelligence
THE THREE PILLARS OF THE CROSS-BATTERY APPROACH –

Pillar #2

- *Gf-Gc* broad (stratum II) classifications of cognitive abilities
- Necessary to ensure that the *Gf-Gc* constructs that underlie XBA assessments are minimally effected by *construct irrelevant variance*

THE THREE PILLARS OF THE CROSS-BATTERY APPROACH –

Pillar #3

- *Gf-Gc* narrow (Stratum 1) classifications of cognitive abilities
- Necessary to ensure that the *Gf-Gc* constructs that underlie cross-battery assessments are *well represented*
- 15+ experts in psychological and psychoeducational assessment
- Used narrow ability definitions extracted from Carroll (1993)
- When possible, used empirical classification information (e.g., results reported by Carroll, 1993) to aid in final classifications
The Three Pillars of the Cross-Battery Assessment Approach In Perspective

Horn-Cattell/Carroll Gf-Gc Framework

Broad (Stratum II) Gf-Gc Classifications

Narrow (Stratum I) Classifications

Guard against two ubiquitous sources of invalidity in assessment – construct irrelevant variance and construct underrepresentation

The three pillars provide the necessary foundation from which to build more theoretically-driven, comprehensive, and valid measures of cognitive abilities

Past and Present Contributions of the XBA Approach to Psychological Evaluation

<table>
<thead>
<tr>
<th>Source</th>
<th>Contribution</th>
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<tbody>
<tr>
<td>Flanagan, McGrew, and Ortiz (2000). The Wechsler Intelligence Scales and Gf-Gc Theory: A Contemporary Approach to Interpretation.</td>
<td>Introduced the &quot;Integrated Cattell-Horn and Carroll Gf-Gc Model&quot; as the foundation for cross-battery assessment based on analyses conducted by McGrew (e.g., McGrew, 1997). This integrated model was renamed &quot;Cattell-Horn-Carroll (CHC) Theory&quot; shortly thereafter (for details).</td>
</tr>
<tr>
<td>Flanagan and Ortiz (2001). Essentials of Cross-Battery Assessment.</td>
<td>Demonstrated that the Wechsler Scales included redundancy in the assessment of certain constructs (e.g., Gc and Gv) and omitted measurement of other important constructs (e.g., Gf, Ga, and Gh).</td>
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<td>Offered step-by-step XBA guidelines for augmenting a Wechsler scale so that a broader range of cognitive abilities could be measured as deemed relevant and necessary via a referral concern.</td>
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<td>Provided a set of worksheets for conducting XBA with the Wechsler scales.</td>
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<td>Used CHC theory as the foundation for XBA.</td>
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<td>Expanded test classifications to include a variety of special purpose tests in addition to the major intelligence tests.</td>
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<td>Included more comprehensive coverage of test interpretation.</td>
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<td>Provided updated and improved XBA worksheets.</td>
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<td>Expert consensus studies provided the basis for narrow ability classifications of cognitive tests.</td>
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<td>Provided the first set of systematic classifications of ability tests according to degree of cultural loading and degree of linguistic demand.</td>
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## Past and Present Contributions of the XBA Approach to Psychological Evaluation

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- Updated CHC-based classifications of achievement tests.  
- Provided a desk reference of achievement tests, which provided important information for each subtest (e.g., reliability, validity, standardization sample characteristics, test floors and ceilings, broad and narrow abilities measured by each subtest).  
- Revised and refined the operational definition of SLD and demonstrated how to use the XBA approach within the context of this definition.  
- Introduced Academic Clinical Clusters according to the eight areas of specific learning disability listed in IDEA 2004. |
- Included actual norms for seven CHC-based clinical clusters, including narrow ability clusters that were incorporated into the XBA approach.  
- Automated the CHC interpretation method for the WISC-IV (program included on CD that accompanies the book). |
- Detailed the manner in which CHC theory and the XBA approach influenced test development (Alfonso, Flanagan, & Radwan).  
- Highlighted the XBA approach as an example of the current “wave” of intelligence test interpretation—application of theory (Kamphuis, Winsor, Rowe, & Kim). |
Past and Present Contributions of the XBA Approach to Psychological Evaluation

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<tr>
<td>Flanagan, Ortiz, and Alfonso (2007)</td>
<td>Introduced automated XBA worksheets in a program called the XBA Data Management and Interpretive Assistant (DMIA).</td>
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<td>Introduced an automated Culture-Language interpretive Matrix (C-LIM) program to evaluate whether test performance systematically declines as a function of increased culture and language demands for English language learners.</td>
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<td>Introduced an automated program called the SLD Assistant. This program was intended to assist in determining whether an individual was of at least average overall intellectual ability despite cognitive deficits in one or more specific areas.</td>
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<td>Uses core tests (and supplemental tests as may be necessary) from a single battery, rather than selected components of a battery, as part of the assessment because (a) current intelligence tests have better representation of the broad CHC abilities and use only two to three subtests to represent them; and (b) the broad abilities measured by current intelligence batteries are typically represented by qualitatively different indicators that are relevant only to the broad ability intended to be measured.</td>
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<td>Greater emphasis placed on use of actual norms, rather than averages. Averages are obtained under a selected few circumstances (e.g., narrow ability level).</td>
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<td>Expanded coverage of CHC theory to include abilities typically measured on achievement tests (e.g., Gnu, Gp, Gx), providing additional information useful in the identification of specific learning disabilities.</td>
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<td>Addressed the federal IDEA standards, psychological assessment, and IDEA (2004).</td>
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<td>Demonstrated how the XBA approach might be used to operationalize the “patterns of strengths and weaknesses” language of the Federal Regulations (2006).</td>
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The Second Edition had Three Programs on a CD
Past and Present Contributions of the XBA Approach to Psychological Evaluation

<table>
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</table>
| Flanagan, Alfonso, Ortiz, and Dynda (2010). Integrating Cognitive Assessment in School Neuropsychological Evaluations. | • Expanded CHC theory to include 16 broad abilities and over 80 narrow abilities (Schneider & Mciwee, Chapter 4 in this volume)  
• Emphasized the relevance of the XBA approach for augmenting stand alone batteries (e.g., McCallum & Bracken, this volume) |
| Flanagan and Harrison (2012). Contemporary Intellectual Assessment: Theories, Tests and Issues (3rd edition). | • Extended CHC classifications to neuropsychological instruments thus expanding the range of instruments that might be used in the XBA approach.  
• Applied neuropsychological domain classifications to cognitive tests, which was intended to expand the interpretive options for XBA data.  
• Application of XBA principles to neuropsychological evaluation. |
What’s New to the Third Edition?

- Use of expanded CHC theory (e.g., Schneider & McGrew, 2012) and its research base as the foundation for organizing assessments and interpreting ability test performance.
- Inclusion of all current intelligence batteries (i.e., WJ III NU, WPPSI-III, WPPSI-IV, WISC-IV, SB5, KABC-II, DAS-II, and WAIS-IV), major tests of academic achievement (e.g., WJ III NU ACH, KTEA-II, WIAT-III, KeyMath3, WRMT-3), selected neuropsychological instruments (e.g., D-KEFS, NEPSY-II), and numerous special-purpose tests (e.g., speech-language tests, memory tests, phonological processing tests, orthographic processing, and fine motor tests).
- Classification of nearly 800 tests and subtests according to CHC theory only or according to both CHC theory and neuropsychological domains (e.g., sensory-motor, visual-spatial, speed and efficiency, executive).
- Inclusion of inter-rater reliability statistics supporting the CHC theory classifications for the majority of new tests.

What’s New to the Third Edition?

- Classification of all achievement, speech/language, phonological, and orthographic processing tests according to the Individuals with Disabilities Education Improvement Act (IDEA, 2004) area of specific learning disability (e.g., reading decoding tests were classified as tests of Basic Reading Skill; math reasoning tests were classified as tests of Math Problem Solving).
- Inclusion of variation in task task demands and characteristics of cognitive, achievement, and neuropsychological batteries—information important for conducting a demand analysis of test performance
- Calculation of all cross-battery clusters in a psychometrically defensible way using median estimates of subtest reliabilities and intercorrelations.
- Update and summary of current research on the relations among cognitive abilities, neuropsychological processes, and academic skills with greater emphasis on forming narrow CHC ability composites, given their importance in predicting academic performance.
- 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).
What’s New to the Third Edition?

- Replacement of the SLD Assistant v1.0 with the XBA Pattern of Strengths and Weaknesses Analyzer (XBA:PSW-A v1.0) that provides guidance in analysis and evaluation of cognitive and achievement data for individuals suspected of having an SLD (see Appendix H for details).

- Significant revision of the XBA Culture-Language and Interpretive Matrix (XBA C-LIM v2.0), which includes culture-language classifications for selected cognitive batteries, special-purpose tests, and neuropsychological instruments, has automated capability for evaluating individuals based on varying levels of language proficiency and acculturative knowledge, includes experimental, special purpose tabs for evaluating giftedness in English Learners as well as Spanish-language tests (i.e., WISC-IV Spanish; Battería III).


- Inclusion of examples of how the cross-battery approach is used within the context of various state and district criteria for SLD identification (see Appendix B).

- Inclusion of examples of linking findings of cognitive weaknesses or deficits to intervention (including educational strategies, accommodations, compensatory strategies, and curricular modifications).

Essentials of Cross-Battery Assessment
Third Edition

- Complete coverage of administration, scoring, interpretation, and reporting
- Expert advice on avoiding common pitfalls
- Conveniently formatted for rapid reference

Dawn P. Flanagan
Samuel O. Ortiz
Vincent C. Alfonso

Updated with 7 major new batteries, 80+ new subtests bringing X-BASS
New clinical clusters on the WISC-V tab and Interpretive Summary Report
Now runs in three modes providing different levels of help and guidance from “Beginner,” to “Intermediate,” to “Advanced.”
More help. Each tab includes buttons for “Tab Help” and “Next Step,” including step-by-step instruction on carrying out the activities to complete each tab.

Three separate programs: DMIA, SLD Assistant, and C-LIM
New clinical clusters on the WISC-V tab provide extended assessment capabilities so evaluators can examine a wider and more in-depth range of cognitive constructs than are measured by the core subtests on the WISC-V. These composites provide a broader coverage of CHC abilities within a single Wechsler battery.

**Interpretive Summary Report** for WISC-V performs an automatic analysis to determine the best global ability score along with interpretive statements, summary score tables and more.

**Three modes of operation:** Beginner, intermediate, advanced

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**Cross-Battery Assessment: Narrowing the Theory-Practice Gap**

**2017 – Present**

- **v2.1**
  - Glitches and bugs fixed, improved functionality, new tests, “data entry – other” tab added, “evaluate score configuration” button on XBA Analyzer tab, “PSW Quick Analysis” feature

- **v2.2**
  - the latest revisions of major batteries, including the new WISC-V, WJ-IV, KTEA-III, KABC-II, SB:IV, WJ-III, WIJ

- **v2.3**
  - V.2.3

- **v2.4**
  - V.2.4

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**General Ability (g)**

- Dichotomous Abilities
- Multiple Intelligences (Incomplete)
- Multiple Intelligences (“Complete”)

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**Sample Theories**

- Spearman
- Thurstone PMAs
- Cattell-Horn Gf-Gc
- Carroll Three-Stratum

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**Theory-Practice Gap**

- Stanford-Binet LM
- Wechsler (Re)
- K-ABC
- WAIS-IV
- KABC-II
- SB:IV
- SDM
- WJ-III
- WISC-III
- CAS
- DAS
- WJ-IV
- WISC-IV

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**Most intellectual assessment practice was here before CHC theory and XBA**

1970s - Late 1990s

2000 to Present

• Kavale and Forness’ operational definition of SLD (2000)
• Revised and extended in the ATDR (2002)
• IDEIA (2004)
• Federal Regs (2006)
• *RTI and SLD Identification: A Critique and Alternative Proposal* – Kavale et al. (2006)  
  • Use RTI and Flanagan and colleagues’ operational definition
• Hale, Kaufman, Naglieri, and Kavale (2006) – recommended a hybrid model (RTI and PSW)
• ATDR-2 (2006)
• PSW – Analyzer (2007)
• Revisions, refinements, and updates based on contemporary theory and research (2008-Present)

Kavale and Forness’ (2000) Operational Definition of SLD

Level

I

Underachievement  
Ability-Achievement Discrepancy

II

Language  
Reading  
Writing  
Math

III

Learning Efficiency  
Strategy  
Rate

IV

Attention  
Memory  
Linguistic Processing  
Social Cognition  
Perception  
Memory/Attention

V

Not Sensory Impairment  
Not MMR  
Not EBD  
Not Cultural Differences  
Not Insufficient Instruction

An Operational Definition of SLD – A Consensus Definition

Flanagan, Ortiz, Alfonso, and Mascolo

- Definition first presented in 2002
KABC-II and KTEA-II Data with WJ III as Supplement 2002-2006

Unexpected Underachievement

Historical Concept of Intra-Individual Discrepancies

Pattern of generally average cognitive abilities and processes establishes basis for satisfying criterion of "an otherwise normal ability profile"

GENERAL Learning Difficulty

DOMAIN-GENERAL

EXPECTED Underachievement

(aka “Slow Learner”)

Name:_____________________ Age: ____ Grade: ____
Examiner:____________________  Date: ___________

Ga: Broad/Narrow Cluster
Reading Composite ( )
Sound Symbol ( )
Reading Efficiency ( )

Ga Broad/Narrow Cluster
Phonological Awareness ( )
WJ III Auditory Attention ( )

Gb: Broad/Narrow Cluster
Naming Facility ( )
WJ III Forgetting ( )

Gb MA Broad/Narrow Cluster
Rebus ( )
Atlantis ( )

Gc: Broad/Narrow Cluster
Word Order ( )
Number Recall ( )
WJ III Working Memory ( )

Gd: Broad/Narrow Cluster
Story Comprehension ( )
Pattern Reasoning ( )

Gr: Broad/Narrow Cluster
Raven ( )
Triangles ( )

Gc Broad/Narrow Cluster
Expressive Vocabulary ( )
Verbal Knowledge ( )

Gsm: Broad/Narrow Cluster
Word Order ( )
Number Recall ( )
WJ III Working Memory ( )

Gf: Broad/Narrow Cluster
Story Comprehension ( )
Pattern Reasoning ( )

Gt: Broad/Narrow Cluster
Raven ( )
Triangles ( )
Gc Broad/Narrow Cluster
Expressive Vocabulary ( )
Verbal Knowledge ( )

Glr-MA: Broad/Narrow Cluster
Rebus ( )
Atlantis ( )

Glr/Gs: Broad/Narrow Cluster
Association Fluency ( )
Naming Facility ( )
WJ III General Ability ( )
RESPONSE-TO-INTERVENTION: SEPARATING THE RHETORIC OF SELF-CONGRATULATION FROM THE REALITY OF SPECIFIC LEARNING DISABILITY IDENTIFICATION

Kenneth A. Kavale, James M. Kauffman, Randy J. Bachmeyer, and Gretchen B. LeFever

When a student does not meet the discrepancy criterion and, therefore, cannot be deemed an underachiever, there is the strong possibility that the student is a "slow learner" (SL; i.e., a student with an IQ level between about 70 and 85). About 14% of the school population may be deemed SLs, but this group does not demonstrate unexpected learning failure, but rather an achievement level consonant with IQ level. Although NCLB makes such low achievement problematic, slow learner has never been a special education category, and "What should not happen is that a designation of SLD be given to a slow learner" (Kavale, 2005, p. 555).

Learning Disability Quarterly, Summer, 2008

IMPLEMENTATION OF IDEA: INTEGRATING RESPONSE TO INTERVENTION AND COGNITIVE ASSESSMENT METHODS

JAMES B. HALE
Philadelphia College of Osteopathic Medicine

ALAN KAUFMAN
Yale University School of Medicine

JACK A. NAGLIERI
George Mason University

KENNETH A. KAVALE
Regent University

The Individuals with Disabilities Education Improvement Act (IDEA) was reauthorized by the U.S. Congress in 2004, yet ongoing regulatory efforts are required to determine its operationalization and implementation. Of particular concern to school psychologists and others involved in the educational process are the guidelines for identification of children with specific learning disabilities (SLDs). Two seemingly opposite camps have been arguing for either a response-to-intervention (RTI) approach for SLD identification or a methodology that includes comprehensive evaluations for SLD identification and intervention purposes. In this article, the authors propose a resolution to these critical issues by emphasizing a multi-tiered approach to serving children with learning problems—one that begins with RTI, but then provides for comprehensive evaluation of cognitive processes if RTI methods are not successful in ameliorating the child’s learning difficulties. If a child fails to respond to intervention and demonstrates a deficit in the basic psychological processes following comprehensive evaluation, both the definitional criteria for SLD and the method for determining SLD eligibility will be addressed. This methodology incorporates the best aspects of both the RTI and comprehensive evaluation perspectives to forge a balanced practice model that ensures diagnostic accuracy and optimizes educational outcomes for children with SLD. © 2006 Wiley Periodicals, Inc.
RESPONSIVENESS TO INTERVENTION AND THE IDENTIFICATION OF SPECIFIC LEARNING DISABILITY: A CRITIQUE AND ALTERNATIVE PROPOSAL

Kenneth A. Kavale, James A. Holdnack, and Mark P. Mostert

Abstract. Responsiveness to intervention (RTI) is being proposed as an alternative model for making decisions about the presence or absence of specific learning disability. We argue that many questions about RTI remain unanswered, and that radical changes in the proposed regulations are not warranted at this time. Since many fundamental issues related to RTI have not been resolved, a better strategy may be to more rigorously implement existing identification criteria (e.g., discrepancy and psychological processing deficits) in a structured psychometric framework. Suggestions for how to modify present procedures are provided.

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MARK P. MOSTERT, PH.D., is professor, Regent University.

Learning Disability Quarterly (2006)

Table 1
Comprehensive Framework for LD Determination

<table>
<thead>
<tr>
<th>Level</th>
<th>Component</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-A</td>
<td>Inter-Individual Academic Ability Analysis</td>
<td>Document specific academic skill or knowledge deficits</td>
</tr>
<tr>
<td>I-B</td>
<td>Evaluation of Exclusionary Factors</td>
<td>Identify alternative explanation for learning difficulties</td>
</tr>
<tr>
<td>II-A</td>
<td>Inter-Individual Cognitive Ability Analysis</td>
<td>Document specific cognitive deficits</td>
</tr>
<tr>
<td>II-B</td>
<td>Reevaluation of Exclusionary Factors</td>
<td>Identify alternative explanation for cognitive difficulties</td>
</tr>
<tr>
<td>III</td>
<td>Integrated Ability Analysis - Evaluation of Underachievement</td>
<td>Document that identified academic deficits are empirically or logically related</td>
</tr>
<tr>
<td>IV</td>
<td>Evaluation of Interference with Functioning</td>
<td>Document the degree to which identified deficits interfere with functioning</td>
</tr>
<tr>
<td></td>
<td>Related Considerations</td>
<td>Identify other limitations in areas of social skills, motor abilities, vision and hearing abilities</td>
</tr>
<tr>
<td></td>
<td>Eligibility Recommendation</td>
<td>Determine eligibility for SLD classification</td>
</tr>
</tbody>
</table>

On the Kavale et al. and Flanagan et al. Operational Definition of SLD...

These operational definitions provide an inherently practical method for SLD identification that carries the potential for increased agreement about the validity of SLD classification

The Importance of Assessing Cognitive Abilities and Processes and Academic Skills...

By identifying specific targets for remediation, the possibilities for truly individualized intervention are increased significantly.


The Value of Assessing Cognitive Abilities and Processes...

Even if a student never enters the special education system, the general education teacher, the student’s parents, and the student him- or herself would receive valuable information regarding why there was such a struggle in acquiring academic content, to the point of possibly needing special education

IMPLEMENTATION OF IDEA: INTEGRATING RESPONSE TO INTERVENTION AND COGNITIVE ASSESSMENT METHODS

JAMES B. HALE
Philadelphia College of Osteopathic Medicine

ALAN KAUFMAN
Yale University School of Medicine

JACK A. NAGLERI
George Mason University

KENNETH A. KAVALE
Regent University

The Individuals with Disabilities Education Improvement Act (IDEA) was reauthorized by the U.S. Congress in 2004, yet ongoing regulatory efforts are required to determine its operationalization and implementation. Of particular concern to school psychologists and others involved in the educational process are the guidelines for identification of children with specific learning disabilities (SLD). Two seemingly opposite camps have been arguing for either a response-to-intervention (RTI) approach for SLD identification or a methodology that includes comprehensive evaluations for SLD identification and intervention purposes. In this article, the authors propose a resolution to these critical issues by emphasizing a multileveled approach to serving children with learning problems—one that begins with RTI but then provides for comprehensive evaluation of cognitive processes if RTI methods are not successful in ameliorating the child’s learning difficulties. If a child fails to respond to intervention and demonstrates a deficit in the basic psychological processes following comprehensive evaluation, both the definitional criteria for SLD and the method for determining SLD eligibility will be addressed. This methodology incorporates the best aspects of both the RTI and comprehensive evaluation perspectives to forge a balanced practice model that ensures diagnostic accuracy and optimizes educational outcomes for children with SLD. © 2006 Wiley Periodicals, Inc.

Ability–Achievement Discrepancy, Response to Intervention, and Assessment of Cognitive Abilities/Processes in Specific Learning Disability Identification: Toward a Contemporary Operational Definition

Kenneth A. Kavale and Dawn P. Flanagan

Kenneth A. Kavale is Distinguished Professor of Special Education at Regent University, Virginia Beach, VA. kavale@cox.net
Dawn P. Flanagan, PhD, is professor in the school psychology program at St. John’s University in New York. flanagan@stjohns.edu

The advantage of the Flanagan et al. (2006b) operational definition lies in its integration of established notions about the nature of SLD with theories about the structure of cognitive abilities into “an inherently practical method for LD assessment that clearly specifies relationships between and among both cognitive and academic abilities, definitions of aptitude and global ability scores, and a recursive process that accommodates essential elements necessary for high-quality evaluation of learning difficulties” (p. 360).

HANDBOOK OF RESPONSE TO INTERVENTION
The Science and Practice of Assessment and Intervention

Shane R. Jimerson • Matthew K. Burns
Amanda M. VanDerHeyden
Editors

2007
An Operational Definition of SLD
Flanagan, Ortiz, and Alfonso

Updated in 2007
Included the PSW-Analyzer

The “85 – 1” Mantra

SLD Cannot be Diagnosed with a Formula

- Diagnosis of SLD can be made based on a systematic, theory- and research-based approach to examining results of a comprehensive evaluation.
- A diagnosis of SLD is a clinical judgment that is made by a private independent psychologist or a multi-disciplinary team based on a convergence of data sources that appear to be consistent with the SLD construct.
- Due to federal statutory and regulatory requirements, a classification of SLD is made in the schools following one of three methods – methods that necessitate quantification for purposes of consistency in identification and accountability – The third option (i.e., PSW) is one such method.

Utility of KTEA-3 Error Analysis for the Diagnosis of Specific Learning Disabilities
Dawn P. Flanagan¹, Jennifer T. Mascolo¹, and Vincent C. Alfonso²
RESPONSIVENESS TO INTERVENTION AND THE IDENTIFICATION OF SPECIFIC LEARNING DISABILITY: A CRITIQUE AND ALTERNATIVE PROPOSAL

Kenneth A. Kavale, James A. Hohbuck, and Mark P. Montert

The value of discrepancy lies in its ability to document the unexpected nature of the learning problem. Everything else being equal, there was little reason to believe that the particular student would experience learning difficulties. The discrepancy criterion indicates the presence of underachievement but only the possibility of a disability. Discrepancy should thus represent the "first gate to learning disabilities identification" (Speece, Case, & Molloy, 2003, p. 147). Although the discrep-
An Operational Definition of SLD
Flanagan and Colleagues (2002 – Present)

Revised and updated in 2011
Updated in Essentials of Cross-Battery Assessment, 3e (2013) and renamed:
Dual Discrepancy/Consistency (DD/C) Method
Operationalized in X-BASS (2015 - 2017) – most sophisticated and psychometrically defensible PSW model to date (Miller et al., 2016)

Clarification of Concepts and Terms

- **Pattern of Strengths and Weaknesses** or **PSW** is the third option in the federal regulations
- One PSW method is **Dual Discrepancy/Consistency** or **DD/C**
- DD/C and XBA are *not synonymous*; they are not interchangeable. They are compatible.
COGNITIVE STRENGTHS
Aggregate of cognitive strengths suggest at least average general ability
May be supported by typically developing academic skills

COGNITIVE WEAKNESS/DEFICIT
Cognitive and academic weaknesses/deficits are approximately 1.5 SD below the mean or lower (cognitive and academic areas of weakness are related empirically, and relationship is ecologically valid)

ACADEMIC WEAKNESS/DEFICIT
Academic Skills Weaknesses

Actual cognitive area of weakness is significantly lower than expected based on estimated general cognitive ability
Cognitive deficit(s) is specific, not general or pervasive, because aggregate of cognitive strengths suggests at least average general ability (i.e., 85 or higher)

Consistent

Academic deficit(s) is unexpected because aggregate of cognitive strengths is at least average (i.e., 85 or higher) (and other factors were ruled out, such as inadequate instruction)

Actual academic area of weakness is significantly lower than expected based on estimated general cognitive ability

COGNITIVE WEAKNESS/DEFICIT
Cognitive Ability and/or Processing Weaknesses

Level | Nature of SLD | Forces of Evaluation | Examples of Evaluation Methods and Data Sources | Criteria for SLD | SLD Classification and Eligibility
--- | --- | --- | --- | --- | ---
I | Difficulties in one or more areas of academic achievement, including (but not limited to) Basic Reading Skill, Reading Comprehension, Reading Fluency, Oral Expression, Written Expression, Math Calculations, and Math Problem Solving. | Academic Achievement: Performance in specific academic skills (e.g., Grp. reading decoding, reading fluency, reading comprehension, spelling, written expression) and Qs (math calculation, math problem solving) and Qs (communication ability, listening ability). | Response to quality instruction and interventions via progress monitoring, performance on norm-referenced, standardized achievement tests, evaluation of work samples, observations of academic performance, teacher/parent student interviews, history of academic performance, and data from other members of the Multidisciplinary Team (MDT) (e.g., speech-language pathologist, interventionalist, reading specialist). | Performance in one or more academic areas is weak or significant (despite attempts at delivering quality instruction) as evidenced by converging data. Note that low scores are not sufficient to meet this condition. These scores must also represent unexpected underachievement (a condition determined by X-BASS based on an individual’s unique pattern of scores). | Necessary
II | SLD does not include a learning problem that is the result of visual, hearing, or motor disabilities; of intellectual disability; of social or emotional difficulty or disorder; or of environmental, educational, cultural, or economic disadvantage. | Extraneous Factors: Identification of potential primary causes of academic skill weaknesses or deficits, including intellectual disability, cultural or linguistic difference, sensory impairment, insufficient motivation or opportunities to learn, organic or physical health factors, social/withdrawal, or psychological difficulty or disorder. | Data from the methods and sources listed at Levels I and III: Behavior Rating Scales; medical records; prior evaluations; interviews with current or past professionals such as counselors, psychologists, etc. | Performance is not primarily attributed to these extraneous factors, although one or more of them may contribute to learning difficulties. [Consider using the Exclusionary Factors Form, which is included in X-BASS] | 
III | A disorder in one or more of the basic psychological test- psychological processes involved in understanding or in using language, system or system, such disorders are presumed to originate from central nervous system dysfunction. | Cognitive Abilities & Processes: Performance in cognitive abilities and processes (e.g., Qs, Qs, Qs, Qs, Qs, Qs, Qs, Qs) and processes (e.g., attention, executive functioning, orthographic processing, rapid automatic naming). | Performance on norm-referenced tests, evaluation of work samples, observations of cognitive performance, task analysis, testing, teacher/parent student interviews, history of academic performance, and records review. | Performance in one or more cognitive or neuropsychological processes (related to academic skill deficiencies) is weak or deficient as evidenced by converging data. Note that low scores are not sufficient to meet this condition. The cognitive process in question must also be deemed specific (a condition determined by X-BASS based on an individual’s unique pattern of scores). | 

Flanagan, Ortiz, and Alfonso (2002 - 2020)
The specific learning disability is a discrete condition differentiated from generalized learning disabilities by generally average or better ability to think and reason and a learning skill profile exhibiting significant variability, indicating a pattern of cognitive and academic strengths and weaknesses.

Pattern of Strengths and Weaknesses (PSW) Marked by

**Dual Discrepancy/Consistency (DD/C)**

Determination of whether academic skill weaknesses or deficits are unexpected and related to denote specific cognitive weaknesses or deficits; pattern of data reflects a below average aptitude-achievement consistency with at least average ability to think and reason.

Data gathered at all previous levels as well as any additional data following a review of initial evaluation results (e.g., data gathered for hypokinesia testing, data gathered via demand analysis and lesion setting).

Circumvented below average aptitude-achievement consistency; circumvented ability achievement and ability-cognitive aptitude discrepancies, with at least average ability to think and reason; clinical judgment supports the impression that the student’s overall ability to think and reason will enable him or her to benefit from tailored or specialized instruction, intervention, compensatory strategies, and accommodations, such that his or her performance rate and level will likely approximate more typically achieving, non-disabled peers.

The DD/C PSW analysis is conducted by X.RAISE based on an individual’s unique pattern of strengths and weaknesses.

**Sufficient For SLD Identification**

**Necessary for Special Education Eligibility**


1. This column includes concepts inherent in the federal definition (IDEA, 2004); Karst, Sprading, and Beattie’s (1999) definition; Harrington and Hillebrand (2002) consensus definition, and other prominent definitions of SLD (see Sobel, Sobel, et al., 1998). Thus, the most salient prominent SLD markers are included in this column.

2. Poor spelling with adequate ability to express ideas in writing is often typical of dyslexia and/or dysgraphia. Even though IDEA 2004 excludes only the broad category of written expression, poor spelling and handwriting are often symptomatic of a specific writing disability and should not be ignored (Steinling & Matter, 2009).

3. Weak performance in typically associated with standard scores in the 1.5-3.0 range, whereas deficient performance is often associated with standard scores that are greater than 1.5 SD below the mean. Interpretations of weak or deficient performance based on standard scores that fall in the weak and deficient ranges are bolstered when they have ecological validity (e.g., when there is evidence that the abilities or processes identified as weak or deficient manifest in everyday classroom activities that require these abilities and processes).

The specific learning disability may be accompanied by secondary learning difficulties that should be considered when planning the more intensive, individualized special education instruction directed at the primary problem. For information on linking assessment data to intervention, see Marcus, Alfonso, and Flanagan (2014).

Nearly 75% of practicing school psychologists using the PSW method use DD/C

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**Table 4**

**Models Used by School Psychologists Who Report Using Pattern of Strengths and Weaknesses Methods for SLD Identification Purposes**

<table>
<thead>
<tr>
<th>PSW Model</th>
<th>Percent using</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual Discrepancy/Consistency Model (DDC)</td>
<td>66.6%</td>
</tr>
<tr>
<td>Discrepancy/Concordance Model (DCM)</td>
<td>9.6%</td>
</tr>
<tr>
<td>Concordance/Concordance Model (CDM)</td>
<td>4.4%</td>
</tr>
<tr>
<td>DDAC and DCM Models</td>
<td>3.3%</td>
</tr>
<tr>
<td>DDAC and CSM Models</td>
<td>2.1%</td>
</tr>
<tr>
<td>Other</td>
<td>13.0%</td>
</tr>
</tbody>
</table>

Note: PSW = pattern of strengths and weaknesses; SLD = specific learning disability.
Clarification of Concepts and Terms

**X-BASS** is a software program with three main purposes

- Assists in XBA and interpretation
- **Analyzes data according to the DD/C PSW method**
- Analyzes data for the purpose of understanding influences of culture and language on test performance for ELs
Essential Elements of PSW based on DD/C
Operational Definition of SLD
Flanagan, Ortiz, and Alfonso (2002-2017)

• Level I: Academic weakness (SS < 90; more typically below 85)
  • Must also meet criteria for unexpected underachievement
  • Not all weaknesses are unexpected (to determine unexpected use X-BASS)

• Level II: Exclusionary factors must be ruled out as the primary cause of the academic skill weakness(es)
  • It is not unusual to find one or more exclusionary factors that contribute to academic weaknesses
  • Use exclusionary factors form to ensure accountability

• Level III: Cognitive weakness (SS < 90; more typically below 85)
  • Must also meet criteria for domain-specific weakness
  • Not all cognitive weaknesses are domain-specific (to determine domain-specific use X-BASS)
  • Generally low average ability across most cognitive areas does not meet the criterion of a domain-specific cognitive weakness

X-BASS (Flanagan, Ortiz, & Alfonso, 2015-2017) is necessary to conduct the DD/C PSW analysis

Essential Elements of PSW based on DD/C
Operational Definition of SLD
Flanagan, Ortiz, and Alfonso (2002-2017)

• Level IV: Data support a “dual discrepancy” and a “consistency” with at least average ability to think and reason

  • Discrepancy 1: Difference between cognitive strengths and cognitive weaknesses is significant; difference between actual and predicted (from general ability or the Facilitating Cognitive Composite [FCC]) performance is unusual (base rate of about 10%) — supports domain-specific cognitive weakness

  • Discrepancy 2: Difference between cognitive strengths and academic weaknesses is significant; difference between actual and predicted (from general ability or FCC) performance is unusual (base rate of about 10%) — supports unexpected underachievement

  • Consistency: Empirical or ecologically valid relationship between cognitive and academic weaknesses

X-BASS (Flanagan, Ortiz, & Alfonso, 2015-2017) is necessary to conduct the DD/C PSW analysis
Consistency – Don’t Assume a Perfect Prediction

Not all academic weaknesses have corresponding cognitive weaknesses

Cognitive processing weaknesses do not guarantee that there will be academic weaknesses – they simply raise the risk (Fianagan & Schneider, 2016)

Relationship is probabilistic, not deterministic, as some have assumed erroneously (e.g., Kranzler et al., 2016)
Not All Definitions of SLD Assume at Least Average Overall Ability

The Dual Discrepancy/Consistency (DD/C) Model Requires at Least Average Overall Ability to Think and Reason (85 + 5) Despite Some Cognitive Processing Deficits***

At Least Average Ability to Think and Reason (“Spared” Abilities) is Consistent with the SLD Construct and has been for over a Century

It’s not the definition of SLD that is changing, it’s the method of identifying SLD that is changing

***The PSW Component of X-BASS will allow the user to override this criterion. However, a pop-up message will inform the user that this override means that the analysis is no longer entirely consistent with DD/C.

Individuals with SLD have At Least Average Overall Ability to Think and Reason

• 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 to Think and Reason

Many of the children have a high degree of intelligence

Orton, 1937

“Historical Perspective” Information from Nancy Mather, NYASP 2011

Individuals with SLD have At Least Average Overall Ability to Think and Reason

“It seems probably that psychometric tests as ordinarily employed give an entirely erroneous and unfair estimate of the intellectual capacity of these children” (p. 582)

Orton, 1925

GF-Gc Composite Recommended in Comparison Procedures for students suspected of SLD (2014)

“Historical Perspective” Information from Nancy Mather, NYASP 2011
**Individuals with SLD have At Least Average Overall Ability to Think and Reason**

- Remedial training must continue until reading is in harmony with the child’s other capacities and achievement
- Some children of superior intelligence struggle to learn to read
- Monroe, M. (1932)

"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
Individuals with SLD have At Least Average Overall Ability to Think and Reason

• “...generalized integrity and deficiency in learning (p. 9)...there is a deficit in learning in the presence of basic integrity” (p. 25).


Cited in: Mather, N. (2016). *Using the WJ IV to Diagnose Specific Reading Disabilities*. Webinar – Houghton Mifflin Harcourt. bcove.me/g81v6vxy
Individuals with SLD have At Least Average Overall Ability to Think and Reason

All historical approaches to SLD emphasize the spared or intact abilities that stand in stark contrast to the deficient abilities

Kaufman, 2008, pp. 7-8

“Weaknesses in word reading and spelling surrounded by a sea of strengths”

Sally Shaywitz
Individuals with SLD have At Least Average Overall Ability to Think and Reason

By failing to differentially diagnose SLD from other conditions that impede learning, such as intellectual disability, pervasive developmental disorders, and overall below average ability to learn and achieve, the SLD construct loses its meaning and there is a tendency (albeit well intentioned) to accept anyone under the SLD rubric who has learning difficulties for reasons other than specific cognitive dysfunction...

Introduction to and Functionality of the PSW-A Component of X-BASS

- Entering scores and interpreting output
- Guidance on selecting scores for inclusion in PSW Analysis

PWS Analysis Following the Dual Discrepancy/Consistency (DD/C) Model Using X-BASS

- Requires Estimates of Seven Cognitive Abilities and Processes
  - Gf
  - Gc
  - Gl, Gr
  - Gsm
  - Gv
  - Ga
  - Gs

  These 7-8 are necessary for the calculation of the g-value, FCC, and ICC
  - Other areas that may be included in the PSW Analysis, but do not contribute to the g-value, ICC, or FCC
    - Orthographic Processing
    - Speed of Lexical Access
    - Cognitive Efficiency (which combines Gs and Gwm)
    - Executive Functions
    - Visual-motor abilities
    - Sensory-motor abilities
    - Composites that represent abilities and processes from other batteries not in X-BASS

- Estimates Do Not Need to be Broad Cognitive Ability Estimates. Examples:
  - Broad CHC Estimate
    - Most likely in the areas of Gf, Gc, and Gv
    - WISC-V Gv is estimate of Vz only. Ok if no Gv difficulties are suspected and referral is reading
  - Narrow CHC Estimate
    - Likely in Ga (e.g., Phonetic Coding; Phonological Processing) and Gs (e.g., Perceptual Speed)
  - More than one CHC Estimate in a broad Domain is ok
    - For example, in the area of Gf, one estimate of I and one estimate of Q is ok

Encompasses approximately 20 frequently measured cognitive abilities and processes

Users of this version may download v2.3 for free
Representation of Broad and Narrow Abilities

- Use two or more qualitatively different narrow ability indicators to represent each broad ability domain

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

- Is a single subtest ever enough?
  - Only when it is at least average (entire 68% CI within the average range or higher) and converging data sources exist to support the score – ecological validity
  - Never acceptable with low subtest scores
  - Remember: Single measures make for poor measurement

X-BASS Welcome Screen

Cross-Battery Assessment Software System (X-BASS® v2.3)

New Users: If you are new to ABA or X-BASS, visit the “Start Here” button and follow the prompts for step-by-step guidance. This option is strongly recommended for first-time and inexperienced users of X-BASS. New users should also read and review the User Guide for basic info.

PSW-Drug Analysis: If you have a list of clients for which you would like to conduct a quick PSW analysis, click here for guidance on using the PSW-DA.

Beginner Mode Provides a “Built in” Tutorial
PSW Component of X-BASS

- Transfer best estimates of CHC abilities and academic scores to XBA Organizer Tab
- From XBA Organizer tab, select estimates to be used in PSW analysis
- Classify scores as Strengths or Weaknesses
- View output
- Select different cognitive and academic weaknesses for analysis if necessary
- View and print interpretation of results
Welcome Screen Includes a “What’s New” Button

Cross-Battery Assessment Software System (X-BASS® v2.3)

Conceptualization by D.P. Flanagan, J.O. Orill, V.C. Allison; Programming by J.O. Orill and A.M. Dyson.
Copyright © 2010 Samuel O. Orill, Dawn P. Flanagan & Vincent C. Allison. All rights reserved.

Essentials of Cross-Battery Assessment, 3rd Edition remains the reference document necessary for understanding Cross-Battery Assessment (KBA) and the principles upon which the X-BASS is based.

Note: Development of X-BASS Online has been significantly delayed and the release date cannot be determined at this time.

NEW: We are anticipating release of an independent Intervention Library program in early Fall. Although it can be informed via use of X-BASS, it will work as a standalone product that provides help in finding empirically validated interventions for students with learning difficulties. Look for it on sale soon!

What’s New in X-BASS v2.3?

This version includes several new major features as well as a few small fixes and edits to correct various minor issues and typographical errors. The most significant new feature involves the addition of 16 new test batteries to bring X-BASS up to date and current. Another new feature includes updated cohesion statements on each core test tab that provide much more information and details regarding proper interpretation of the cohesion analysis performed for any composite on any of the 12 core test tabs. In addition, the Gk1 domain has been replaced with a “Blank” domain that can be used to include any type of cognitive domain that cannot be otherwise accommodated in X-BASS and permit its use in PSW Analyses. Search Wiley.com for additional information about this version as well as the upcoming transition to X-BASS Online.

Release Notes History - Version 2.3

1. Updated the Test Database with several new tests including: API, I. Bateria IV Check, Bateria IV COG, CVLT-3, DTLA-5, ET-IV, NU, EVT-3, MWT-4, MWT-5, PAT-2, TAPS-4, TAPS-4, TOLP-2, TNI-2, WORST-3, EYAT-2, WISC-V Spanish, and WRAIT-5. Also there are some corrections to subtests from existing batteries (e.g., CELF-5). The menus in XBA and CUM Analyzers will now permit use of all these tests along with all other current tests.

2. Added enhanced text for the cohesion analysis interpretive statements for all composites on all 9 core cognitive test tabs. The new statements provide significantly more detail and information regarding the composite and the results of the cohesion analysis.

3. Added a new feature that will automatically transfer scores from the PSW-Quick Analysis module to the full PSW Analysis, as well as taking data from the full PSW Analysis and transferring it to the PSW-Quick Analysis module. The former transfer function provides users with a more detailed analysis of results whereas the latter function provides users with a more straightforward and simplified results more suitable for inclusion in psychological reports or discussing results with families.

Scroll down page to see all 20 notes
Exclusionary Factors Form

Cross-Battery Assessment Software System (X-BASS® v2.3)

Essentials of Cross-Battery Assessment, 3rd Edition
remains the reference document necessary for understanding Cross-Battery Assessment (XBA) and the
principles upon which the X-BASS is based.

Note: Development of X-BASS OGA has
been significantly delayed and the release date cannot be determined at this time.

New Users:

If you have never used X-BASS or OGA, click the “Start Here” button and follow
the on-screen prompts to get started. The X-BASS OGA Quick Analysis Guide will
provide you with a brief overview of the first three features of X-BASS. The study
should also read and review the User Guide for more details.

Experienced Users:

Experienced users can jump to the main menu and navigate directly to one of
the main tabs from here.

User of this version may download v2.3 for free

Index and Main Navigation

DATA ENTRY: To enter data from a major cognitive or academic battery, select the name of the battery from the menu below:

C-LIM MODULE: Click to navigate directly to the desired tab.

GRAPHIC: To view any of the data graphs that are available in X-BASS, select the name of the graph from the menu below:

ANALYSES: Click to navigate directly to the major analyses tabs.

PSW MODULE: Click to navigate directly to the desired tab.

REFERENCE & HELP: Click to navigate directly to the desired tab.

For direct navigation to any of the core test tabs, use the quick navigation menu bar above. This menu bar appears on all tabs and is color coded for easy reference. Otherwise, select an option below from the drop down menus provided to begin performing the desired action.
Evaluation and Consideration of Exclusionary Factors for SLD Identification

An evaluation of specific learning disability (SLD) requires an evaluation and consideration of factors, other than a disorder in one or more basic psychological processes that may be the primary cause of a student’s academic success and learning difficulties. These factors include (but are not limited to) vision/hearing, or motor disabilities, intellectual disability (ID), social/emotional or psychological disturbance, environmental or economic disadvantage, cultural and linguistic factors (e.g., limited English proficiency), insufficient instruction or opportunity to learn and physical/health factors. These factors may be evaluated through rating scales, parent and teacher interviews, classroom observations, attendance records, social and developmental history, family history, vision/hearing exams, medical records, prior evaluations, and interviews with current or past counselors, psychologists, and para-professionals who have worked with the student. Noteworthy is that the fact that LD students with [and without] SLD often have one or more factors (listed below) that contribute to academic and learning difficulties. However, the practitioner must rule out any of these factors as being a primary reason for a student’s academic and learning difficulties to maintain SLD as a viable classification/diagnosis.

Vision (Check All that Apply):
- Vision test recent (within 1 year)
- History of visual disorder
- Vision test recent (> 1 year)
- Diagnosed visual disorder/distance vision
- Passed
- Specified
- Failed
- Vision difficulties suspected or observed
- Additional:
- Vision testing recent (within 1 year)
- Vision testing recent (> 1 year)
- Vision difficulties suspected or observed
- Specified
- Additional:
- Regular eye exams. Most recent appointment was within one month of the evaluation. No prescription changes need to be changed.

Hearing (Check All that Apply):
- Hearing test recent (within 1 year)
- History of auditory disorder/distance hearing
- Hearing test outdated (> 1 year)
- Diagnosed auditory disorder/distance hearing
- Passed
- Specified
- Failed
- Hearing difficulties suggested in the referral
- Uses Hearing Aids
- Additional:
- History of motor disorder
- Diagnosed motor disorder
- Specified
- Motor difficulties suggested in the referral
- Uses Hearing Aids
- Additional:
- History of motor disorder
- Diagnosed motor disorder
- Specified
- Motor difficulties suggested in the referral
- Uses Hearing Aids
- Additional:
- History of motor disorder
- Diagnosed motor disorder
- Specified
- Motor difficulties suggested in the referral
- Uses Hearing Aids
- Additional:
- History of motor disorder
- Diagnosed motor disorder
- Specified
- Motor difficulties suggested in the referral
- Uses Hearing Aids
- Additional:
### Cognitive and Adaptive Functioning (Check All That Apply):
- Significantly "subaverage intellectual functioning" (e.g., IQ score of 70 or below)
- Permanence cognitive deficits (e.g., weaknesses or deficits in many cognitive areas, including G and/or Gf)
- Deficits in adaptive functioning (e.g., social, communication, self-care)
  - Areas of significant adaptive skill weaknesses (check all that apply):
    - Learning Skills
    - Communication
    - Socialization
    - Daily Living Skills
    - Behavior/Emotional Skills
    - Other

### Social Emotional/Psychological Factors (Check All That Apply):
- Diagnosed psychological disorder. Specify:
- Date(s) of diagnosis:
- Family history significant for psychological difficulties
- Disorder presently treated - specify treatment modality (e.g., counseling, medication):
- Reported difficulties with social/emotional functioning (e.g., social phobia, anxiety, depression):
- Social/Emotional/Psychological issues suspected or suggested by referral:
- Home/School Adjustment Difficulties:
- Lack of Motivation/Effort
- Emotional Stress
- Autism
- Persistent Medications (type, dosage, frequency, duration):
- Prior Medication Use (type, dosage, frequency, duration):
- Hospitalization for psychological difficulties. Specify date:
- Deficits in social, emotional, or behavioral (SEB) functioning (e.g., as assessed by standardized rating scales):
  - Significant scores from SEB measures:

### Cultural/Diagnostic Factors (Check All That Apply):
- Limited Number of Years in the U.S. Specify:
- Lack of or Limited Exposure to Primary Language (L1):
- Current Primary Language Proficiency:
  - Date:
  - Score:
  - Acculturation Knowledge Development:
    - [Check one]: High, Moderate, Low
- Current English Language Proficiency:
  - Date:
  - Score:
  - Parental Educational and Socio-Economic Level:
    - [Check one]: High, Moderate, Low

### Physical/Health Factors (Check All That Apply):
- Limited access to healthcare
- Chronic health condition. Specify:
  - Migraines
- Temporary health condition (recovery):
- History of Medical Condition (date diagnosed):
- Medical Treatments. Specify:
  - Repeat visits to the school nurse
  - Repeat visits to a physician
  - Medication type, dosage, frequency, duration:

### Instructional Factors (Check All That Apply):
- Interrupted schooling (e.g., multiple-year school reentry. Specify reason):
  - New teacher (past 3 months)
  - Nontraditional curriculum (e.g., home schooled)
  - Excessive # Absences:

### Additional Notes:
Exclusionary Factors Form as Part of a Psychoeducational Report

Clinical Impressions
Holly’s academic difficulties in math have persisted since the 1st grade and have remained well below expectations despite being exposed to quality instruction, intervention, and tutoring. Her math difficulties could not be explained by global cognitive impairment, as her WISC-V General Ability Index was well within the average range and her academic performance in reading, writing, and specific content areas (e.g., History, Science) is at grade level. Furthermore, her difficulties could not be explained by social-emotional problems, cultural or linguistic differences, sensory-motor difficulties, lack of motivation and effort, environmental disadvantage, or a health-related impairment (see Exclusionary Factors Form affixed to this report). However, it is likely that Holly’s math anxiety and attention deficit disorder contribute to her math difficulties. Contributory factors notwithstanding, the primary cause of Holly’s math difficulties appears to be a circumscribed set of specific cognitive processing weaknesses that are
New Reference Buttons on Main Navigations Tab

Users of this version may download v2.3 for free.
Index and Main Navigation

DATA ENTRY: To enter data from a major cognitive or academic battery, select the name of the battery from the menu below:

ANALYSES: Click to navigate directly to the major analyses tabs.

C-LIM MODULE: Click to navigate directly to the desired tab.

PSW MODULE: Click to navigate directly to the desired tab.

GRAPHICS: To view any of the data graphs that are available in BASS, select the name of the graph from the menu below:

REFERENCE & HELP: Click to navigate directly to the desired tab.

Manifestations of Cognitive Weaknesses

Developed by Denise P. Maragan and Jennifer T. Mancoff

Use the drop down menu to select and scroll to a specific ability domain:

Fluid Reasoning (0f) Deficit

<table>
<thead>
<tr>
<th>C-LIM Social Cognitive Abilities/Neuropsychological Functions</th>
<th>Brief Definition*</th>
<th>General Manifestations of the Cognitive/Neuropsychological Weakness</th>
<th>Specific Manifestations of the Cognitive/Neuropsychological Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid Reasoning (0f)</td>
<td>Novel problem-solving, ability to solve problems that are relatively new or novel</td>
<td>Difficulties with: Higher level thinking and Reasoning</td>
<td>Reading Difficulties; Drawing inferences from text; Abstracting main ideas</td>
</tr>
<tr>
<td></td>
<td>Processes are minimally dependent on prior knowledge</td>
<td>Transferring or generalizing learning</td>
<td>Math Difficulties; Reasoning with quantitative information (word problems)</td>
</tr>
<tr>
<td></td>
<td>Involves manipulating rules, abstracting, generalizing, and identifying logical relationships</td>
<td>Deriving solutions for novel problems</td>
<td>Interpreting procedures and processes used to solve problems</td>
</tr>
<tr>
<td></td>
<td>Fluid reasoning is evident in inferential reasoning, concept formation, classification of unfamiliar stimuli, abstraction, and extrapolation of reasonable estimates in ambiguous situations (Schneider &amp; McGrew, 2012)</td>
<td>Extending knowledge through critical thinking</td>
<td>Appraising relationships between numbers</td>
</tr>
<tr>
<td></td>
<td>Harmless IQ abilities include Induction, General Sequential Reasoning (Deductive), and Quantitative Reasoning</td>
<td>Processing and applying underlying rules or process(es) to solve problems</td>
<td>Writing Difficulties; Essay writing and generalizing concepts</td>
</tr>
</tbody>
</table>

Comprehension-Knowledge (0k) Deficit

<table>
<thead>
<tr>
<th>C-LIM Social Cognitive Abilities/Neuropsychological Functions</th>
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<th>Specific Manifestations of the Cognitive/Neuropsychological Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehension-Knowledge (0k)</td>
<td>Breadth and depth of knowledge and skills (e.g., words, general information) that are valued by one's culture</td>
<td>Difficulties with: Vocabulary acquisition</td>
<td>Reading Difficulties; Decoding (e.g., word student is attempting to decode is not in his/her vocabulary)</td>
</tr>
<tr>
<td></td>
<td>Developed through language exposure, culture, formal education as well as general learning experiences</td>
<td>Knowledge acquisition</td>
<td>Comprehending (e.g., poor background knowledge about information contained in text)</td>
</tr>
<tr>
<td></td>
<td>Issues of information and declarative and procedural knowledge</td>
<td>Comprehending language or understanding what others are saying</td>
<td>Math Difficulties; Understanding math concepts and the &quot;vocabulary of math&quot;</td>
</tr>
</tbody>
</table>

* Brief definitions are provided for clarity and ease of understanding, but full descriptions are available in the software.
### Minimizing the Effects of Cognitive Weaknesses*

*Developed by Dover F. Panagot and Jennifer T. MacCoby*

#### Recommendations that May Facilitate Learning and Aid in Minimizing the Effects of a Fluid Reasoning (Gf) Deficit

<table>
<thead>
<tr>
<th>Classroom Instruction</th>
<th>Instructional Materials</th>
<th>Environmental</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use demonstrations to externalize the processing (think aloud)</td>
<td>Unscrambled answer keys containing the “reason” for correct/wrong choices</td>
<td>Problem solving charts (hanging or taped to desk)</td>
<td>Use metacognitive strategies (memorize that are measurable and that accurately represent the learning task)</td>
</tr>
<tr>
<td>Gradually offer guided practice (e.g., guided questions list) to promote internalization of procedures or processes</td>
<td>Guided lists for implementing procedures, formulas</td>
<td>Procedural Charts/Lists (hanging or taped to desk)</td>
<td>Use tools that help the categories objects and concepts to assist in drawing conclusions (e.g., graphic organizers, concept maps)</td>
</tr>
<tr>
<td>Offer targeted, explicit feedback</td>
<td>Models/Examples</td>
<td>Preferred seating arrangements that provide easy access to a peer model with strong reasoning skills (e.g., for cooperative learning activities)</td>
<td>Listen to and separate the “steps” in completing a problem from the actual content used in a problem</td>
</tr>
<tr>
<td>Offer opportunities for learning formats that allow for reasoning to be modeled for the student (e.g., cooperative learning, reciprocal teaching)</td>
<td>Text features (boldface, italics)</td>
<td></td>
<td>Teach self-questioning in which students highlight main ideas and relevant details in the text, and then respond to a series of question prompts.</td>
</tr>
<tr>
<td>Compare new concepts to previously learned concepts (same vs. different)</td>
<td>Graphic organizers that allow for a visual depiction of relationships between and among concepts</td>
<td></td>
<td>Use computer games involving reasoning. Students may benefit from additional opportunities to practice reasoning in a computer or app-based format</td>
</tr>
</tbody>
</table>
To determine whether a particular test/battery is included in X-BASS, or to find what subtests and their classifications are contained in any particular test/battery, use the drop down menu, over the left column. After the test/battery name has been selected, the list of subtests from that battery will appear in the right column automatically. In addition, the subtests from the selected battery can be entered into the XBA Analyzer by clicking on the black button to the right.
Support for CHC theory, CHC test classifications, and the Cross-battery assessment approach (XBA)