LANGUAGE ELIGIBILITY MANUAL

Companion I: Language with Learning Disabilities Using Cross Battery Analysis



TEXAS SPEECH-LANGUAGE-HEARING ASSOCIATION

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Language Eligibility Manual Companion I: Language with Learning Disabilities Using Cross Battery Analysis

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I. General Information

A. Introduction

The purpose of these Eligibility Guidelines is to provide a structure within which the speech-language pathologist (SLP) can participate as a member of the multidisciplinary team in using consistent evaluation practices to determine the presence of a language disorder that may co-occur with a learning disability. As a member of the multidisciplinary team, the SLP may support the team in:

- Completing a comprehensive evaluation of a student's language and learning profile;
- Identifying whether a learning disability and/or language disorder is present; and
- Making recommendations to the Admission, Review, Dismissal (ARD) Committee regarding eligibility for special education services and support based on a learning disability and/or speech impairment.

A specific learning disability is described in that Individuals with Disabilities Education Act (IDEA) as a disorder in the basic psychological processes involved in understanding or in using language that manifests itself in learning problems and difficulty meeting grade-level expectations. A language disorder is defined as disruption in the ability to understand/comprehend spoken or written language and/or difficulty in producing language to verbally communicate thoughts. The components of language for the purpose of these Guidelines are syntax, semantics, phonology, metalinguistics, and pragmatics. The speech-language pathologist evaluates the language modalities of listening and speaking, and supports the multidisciplinary team members in evaluating the language bases of reading and writing.

The actual definition of a learning disability (LD) remains unchanged from the 1999 version of the federal regulations. However, with the reauthorization of the Individuals with Disabilities Education Act in 2004, the means by which we evaluate and identify a learning disability has undergone a process of evolution. In addition, the Texas Speech-Language-Hearing Association (TSHA) Eligibility Guidelines for Speech Impairment with a language disorder are also evolving. Students with a learning disability may be eligible for speech-language pathology services with a language disorder. These Guidelines are intended to inform a process for the SLP to participate as a member of the multidisciplinary team to make recommendations to the ARD Committee regarding Speech Impairment with a language disorder; and LD determination in the areas of listening comprehension and oral expression.

B. Learning Disability Eligibility Determination

The federal definition of a specific learning disability is found in IDEA 2004 [20 U.S.C. 1401(3); 1401(30)]:

Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia.

Specific learning disability does not include learning problems that are primarily the result of visual, hearing, or motor disabilities, of mental retardation, or emotional disturbance or of environmental, cultural, or economic disadvantage.

With the reauthorization of the Individuals with Disabilities Education Act in 2004, the means by which we evaluate and identify a learning disability has undergone a process of evolution. Leaders in the field of educational psychology and eligibility determination continue to shape their guidance to diagnosticians and school psychologists based on research and the findings in case law.

Current guidance on LD determination in Texas promotes an integrated model that considers both processing skills and the student's responsiveness to intervention, and focuses on a process of collecting data to answer four (4) questions (Cheramie, 2009, as modified from Flanagan et al., 2006).

- 1. Is there a normative deficit in academic achievement? The examiner determines the degree to which the student has learned commensurate with age and grade-level expectations. A comparison of the student's skill level and grade-level standards/expectations should be completed. The sources of data used to answer this question include:
 - a. Informal (e.g., observations, parent information)
 - b. Criterion-referenced (e.g., TAKS, TPRI)
 - c. Curriculum-based (e.g., CBMs, probes)
 - d. Norm-referenced (e.g., standard scores, relative proficiency index RPI)
 - e. Response to Intervention (RTI) progress monitoring data

- 2. Is there a pattern of cognitive strengths and weaknesses? The examiner should analyze both the areas that are associated with the area(s) of academic deficit and those that are not in order to see how efficiently the student is learning. There has been much discussion about what constitutes a pattern of strengths and weaknesses. Some points to consider include:
 - a. The cognitive deficit must be a normative weakness not ipsative or intra-individual/person-specific, meaning relative to other cognitive areas.
 - b. Low academic achievement without cognitive deficits does not meet the definition of the condition of a learning disability.
 - c. If all or most cognitive areas are deficient, there is no pattern of strengths and weaknesses.

The broad cognitive processes and the many narrow abilities which fall under the broad abilities include:

- d. Gf Fluid reasoning
- e. Gc-Crystallized knowledge
- f. Gsm Short-term memory
- g. Gv Visual processing
- h. Ga Auditory processing
- i. Glr Long-term retrieval
- j. Gs-Processing speed
- 3. Is there a relationship between the cognitive deficits and academic deficits? Is there a direct link between cognitive deficits and academic deficits (i.e., basic reading, reading comprehension, reading fluency, math calculation, math reasoning, written expression, listening comprehension, and oral expression)?
 - a. When looking for the relationship between the academic and cognitive deficits, analysis of broad abilities may not be sufficient and narrow abilities may need to be considered.
 - b. Core cognitive processes related to academic areas must be considered. Look at the cognitive processes that are associated with reading, math, and writing.

4. Is there evidence of a functional impairment? Questions 1 through 3 determine whether there are cognitive processes that underlie and serve as a foundation for academic deficits and the presence of the condition of a learning disability. Question 4 relates to the degree of the deficit and impact on educational performance. Emanating from this information, the ARD Committee will determine eligibility.

In addition to these questions, the multidisciplinary team must consider and rule out factors that may be the primary contributor to a student's inability to make progress in the general education curriculum. The exclusionary factors include:

- Lack of instruction in reading and/or math
- Limited English proficiency
- Mental retardation
- Emotional disturbance
- Vision, hearing, or motor impairment
- Environmental, cultural, or economic disadvantage

Sources:

Cheramie, G. (June 2009). *Identification of learning disabilities*. Presentation at Education Service Center Region 4, Houston, TX.

Flanagan, D., Ortiz, S. and Alfonso, V. (2007). *Essentials of cross-battery assessment,* 2nd ed. Hoboken, NJ: John Wiley & Sons.

Flanagan, D., Ortiz, S., Alfonso, V., and Mascolo, J. (2006). *The achievement test desk reference: A guide to learning disability identification*, 2nd ed. Hoboken, NJ: John Wiley & Sons.

C. Comprehensive Multidisciplinary Team Evaluations for Learning Disability and Language Disorder

IDEA 2004 requires the use of a multidisciplinary team (MDT) to determine eligibility and develop the individual education plan (IEP) for students with disabilities. Required team members include "an individual who can interpret the instructional implications of evaluation results..." and/or "other individuals who have knowledge or special expertise regarding the child, including related services personnel as appropriate..." [CFR §300.321; 19 TAC §89.1050 (c)(1)]. For students with a suspected disability in the areas of speech, language, or communication, this requirement is met with the inclusion of a speech-language pathologist (SLP) on the multidisciplinary evaluation team.

IDEA 2004 also provides new guidelines for determining the presence of a learning disability. The IDEA 2004 regulations include the requirements that states and districts/Shared Services Arrangements (SSAs):

- "must not require the use of a severe discrepancy between intellectual ability and achievement for determining whether a child has a specific learning disability..."
- "must permit the use of a process based on the child's response to scientific, research-based intervention..."
- "may permit the use of other alternative research-based procedures for determining whether a child has a specific learning disability..."

In response to these guidelines TSHA has provided additional guidelines for the determination of a language disorder. Included in these guidelines is the use of multiple sources of data, including Cross Battery Analysis. As the specialist in the area of communication disorders, the SLP becomes an integral part of the MDT for:

- 1. Defining the assessment question.
- 2. Collecting data from multiple sources.
- 3. Assessing the cognitive processing area of crystallized intelligence (Gc) in the primary language. The SLP may also need to address language in the following cognitive processes: auditory processing (Ga), fluid reasoning (Gf), long-term retrieval (Glr), and short-term memory (Gsm).
- 4. Determining the impact of Gc, Ga, Gf, Glr, and Gsm on language processing with respect to the student's pattern of strengths and weaknesses.
- 5. Identifying the presence of a language disorder.

- 6. Evaluating the impact of the language disorder on academic achievement.
- 7. Developing an educational plan to address the student's needs.

The speech-language pathologist can provide direction to the MDT as they collect data at all stages of Response to Intervention (RTI). Specific areas of concern that will require input from the SLP include:

- 1. Listening comprehension
- 2. Oral expression
- 3. Literacy
- 4. Second language learning
- 5. Functional communication skills
- 6. Assistive technology

II. Cattell-Horn-Carroll (CHC) Theory of Intelligence and Cross Battery Analysis

A. Cross Battery Analysis Approach

The cross battery analysis approach was introduced by Dawn Flanagan and her colleagues (Flanagan, Ortiz & Alfonso, 2007) in the late 1990s as the means to assess the total range of abilities represented in the CHC theory of cognitive abilities. Cross battery analysis provides a framework for conducting assessments that approximate the total range of broad and narrow cognitive abilities represented in a more comprehensive manner than is possible with a single intelligence battery. Cross battery analysis can be used to develop complete information about a student's learning profile.

Cross battery analysis is an efficient method of cognitive assessment that is grounded in CHC theory and research and is well suited to the evaluation of specific learning disabilities. IDEA 2004 continues the same basic definition for specific learning disability as previous special education legislation.

- Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or using language, spoken or written, that may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations;
- Specific learning disability does not include learning problems that are primarily the result of visual, hearing, or motor disabilities; of mental retardation or emotional disturbance; or of environmental, cultural, or economic disadvantage.

The cross battery analysis approach provides the multidisciplinary team with a process for making systematic, valid, and consistent interpretations of intelligence, achievement, and language test batteries that meet the evolving standards for evaluation and identification of a learning disability. The SLP's attention is focused on the student's language learning system and whether a language disorder is present. In addition, when LD–oral expression or LD–listening comprehension is suspected, information from the language assessment is critical for data-driven decisions. Gc – crystallized intelligence, Ga – auditory processing, Gf – fluid reasoning, Glr – long-term retrieval, and Gsm – short-term memory are of special interest to the SLP.

Cross battery analysis is a powerful evaluation approach that provides comprehensive information about students with suspected learning disabilities (SLD). SLPs participate on the multidisciplinary team, using cross battery analysis results in combination with other language assessment measures, to determine whether a language disorder is present, and further, to assist in SLD determination especially for LD–oral expression and LD–listening comprehension.

Source:

Flanagan, D., Ortiz, S., & Alfonso, V. (2007). *Essentials of cross-battery assessment*, 2nd ed. Hoboken, NJ: John Wiley & Sons.

B. CHC Theory of Cognitive Abilities

Human intelligence is multidimensional. The Cattell-Horn-Carroll (CHC) theory of cognitive abilities is a model or taxonomy that takes the multidimensional nature of human intelligence into account. The CHC theory is the blending of two similar theories about the content and structure of human cognitive abilities. The first of these two theories is the Gf-Gc theory (Cattell, 1941; Horn, 1965), and the second is Carroll's (1993) Three Stratum Theory.

By the late 1980s and early 1990s, scholars generally recognized the Horn-Cattell Gf-Gc model as the most reasonable approach to an acceptable theory of the structure of human cognitive abilities. The Gf-Gc theory received its original name because early versions of the theory proposed only two abilities: fluid (Gf) and crystallized (Gc) intelligence. By 1991, Horn had extended the Gf-Gc model of Cattell to the identification of 9 to 10 broad Gf-Gc abilities: Fluid Intelligence (Gf), Crystallized Intelligence (Gc), Short-Term Acquisition and Retrieval (SAR or Gsm), Visual Intelligence (Gv), Auditory Intelligence (Ga), Long-Term Storage and Retrieval (TSR or Glr), Cognitive Processing Speed (Gs), Correct Decision Speed (Gt), Quantitative Knowledge (Gq) and the ability associated with the comprehension and expression of reading and writing skills (Grw).

In 1993 Carroll proposed a three-tier model of human cognitive abilities that differentiated abilities as a function of breadth. At the broadest level (stratum III) is a *general* intelligence factor. Next in breadth are eight *broad* abilities that represent "basic constitutional and long-standing characteristics of individuals that can govern or influence a great variety of behaviors in a given domain. Finally, stratum level I includes more than 69 *narrow* abilities that are subsumed by the stratum II abilities, which in turn are subsumed by the single stratum III *g* factor.

The CHC model was created in 1997 by McGrew and revised in 1998 with the help of Flanagan (1998). The CHC theory of cognitive abilities includes 10 broad stratum abilities and more than 70 narrow abilities below these. Stratum III (G) from Carroll's model has been omitted, but fluid and crystallized intelligence from the Cattell-Horn model remain.

The cross battery analysis approach emerged from the CHC theory of cognitive abilities and the need to assess individuals with respect to the total range of abilities specified in the theory.



C. CHC Theory of Cognitive Abilities Broad and Narrow Strata

Flanagan, D., Ortiz, S., and Alfonso, V. (2007). Essentials of cross battery assessment. 2nd ed. Hoboken, NJ: John Wiley & Sons, Inc.

D. CHC Broad and Narrow Strata Descriptors

Gf – **Fluid Intelligence:** The ability to use and engage in various mental operations when faced with a relatively novel task that cannot be performed automatically.

Narrow Ability Definition	Example
RG - General Sequential Reasoning: The	When presented with an incomplete logic
ability to start with stated rules, premises,	puzzle, the student must deduce the
or conditions, and to engage in one or more	missing components following careful
steps to reach a solution to a novel problem	analysis of the presented stimuli.
I – Induction: The ability to discover the	When presented with a certain pattern of
underlying characteristic (e.g., rule,	related stimuli, the student must select one
concept, process, trend, class membership)	of several stimuli that would complete or
that governs a problem or a set of materials	continue the pattern.
RQ – Quantitative Reasoning: The ability	When presented with an incomplete series
to inductively and deductively reason with	of related numbers, the student must select
concepts involving mathematical relations	the number(s) that best complete(s) the
and properties	series.
RP – Speed of Reasoning: Seriation, conservation, classification, and other cognitive abilities as defined by Piaget's developmental theory	At what level is the student able to demonstrate knowledge of conservation of mass or volume when presented with transformations of either the actual state of the object or items extraneous to the object, such as a container holding the object (e.g., when 5 ounces of water is transformed to ice, is there a change in the amount of water?)
RE – Speed of fluency in performing reasoning tasks, e.g., quickness in generating as many possible rules, solutions, etc., to a problem in a limited time	The student must say the days of the week while counting by 3s as quickly as possible (e.g., Monday, 3, Tuesday, 6, Wednesday, 9, etc.).

Gc – **Crystallized Intelligence:** The breadth and depth of a person's acquired knowledge of a culture and the effective application of this knowledge.

Narrow Ability Definition	Example
LD – Language Development: General development, or the understanding of words, sentences, and paragraphs (not requiring reading) in spoken native language skills	The student is presented with everyday problems and must offer solutions that demonstrate an understanding of social rules and concepts.
VL – Lexical Knowledge: The extent of vocabulary that can be understood in terms of correct word meanings	The student must provide oral definitions for words of increasing difficulty.
LS – Listening Ability: The ability to listen to and comprehend oral communications	The student is presented with an incomplete verbal passage and must provide a word that completes the passage.
KO – General (Verbal) Information: The range of general knowledge	The student must provide specific responses to questions of general factual information.
CM – Communication Ability: The ability to speak in "real life" situations (e.g., lecture, group participation) in an appropriate/adult-like manner	The student is required to view a stimulus and must describe the scene and provide directions using the visual stimuli.
OP – Oral Production and Fluency: More specific or narrow oral communication skills than reflected by communication ability	The student is presented with a starting stimulus word and must use the word properly in a sentence.
MY – Grammatical Sensitivity: Knowledge or awareness of the grammatical features of the native language	The student must correctly label the parts of speech contained in a sentence and/or correct those parts of speech that are utilized incorrectly (e.g., disparate tenses in a sentence).
K2 – Culture Information: Range of cultural knowledge	The student is presented with pictures of major artistic works (e.g., Picasso) and must correctly identify the name of the work and/or the artist.
K1 – General Science Information: The level the student demonstrates range of scientific knowledge	The student must correctly respond to questions demonstrating general knowledge of basic scientific ideas or facts.

A5 – Geography: The level the student demonstrates geographical knowledge	The student must name the states and/or capitals.
KL – Foreign Language Proficiency: The level the student demonstrates knowledge or awareness of the grammatical features of the non-native language	The student is presented with two words in a foreign language and must describe the common relation or similarity between them.
LA – Foreign Language Aptitude: The rate and ease of learning a new language	The student is presented with several foreign words that are paired with pictorial stimuli and must pair the words with the pictures following a single presentation.

Gsm – **Short-Term Memory:** The ability to apprehend and hold information in immediate awareness and then use it within a few seconds.

Narrow Ability Definition	Example
MS – Memory Span: The ability to attend to and immediately recall temporally ordered elements in the correct order after a single presentation	The student is presented with a series of numbers or words, and must repeat them orally in the same sequence as presented.
MW – Working Memory: The ability to temporarily store and perform a set of cognitive operations on information that requires divided attention and the management of the limited capacity of short-term memory	The student is presented a series of numbers and letters in a mixed-up order, then is required to reorder and say the complete list, numbers first, in order, followed by the letters in alphabetical order.
L1 – Learning Abilities: The ability to apprehend newly presented information and to demonstrate subsequent acquisition of such information (e.g., via controlled learning tasks)	

Gv – **Visual Processing:** The ability to generate, perceive, analyze, synthesize, store, retrieve, manipulate and transform visual patterns and stimuli.

Narrow Ability Definition	Example
SR – Spatial Relations: The ability to perceive and manipulate visual patterns rapidly or to maintain orientation with respect to objects in space	The student is required to view a stimulus pattern or design and reproduce the design using blocks or cubes.
VZ – Visualization: The ability to manipulate objects or visual patterns mentally and to "see" how they would appear under altered conditions	The student is required to view a series of designs and must draw how the designs would look upside down.
MV – Visual Memory: The ability to form and store a mental representation or image of a visual stimulus and then recognize or recall it later	The student is required to reproduce or recognize a previously presented visual stimulus that has been removed.
CS – Closure Speed: The ability to combine disconnected, vague, or partially obscured visual stimuli or patterns quickly into a meaningful whole, <i>without knowing</i> <i>in advance</i> what the pattern is	The student is required to identify an object from a line drawing that has portions of the lines missing.
SS – Spatial Scanning: The ability to survey a spatial field or pattern accurately and quickly and identify a path through the visual field or pattern	The student is required to complete a series of increasingly difficult mazes within a specified time period.
CF – Flexibility of Closure: The ability to identify a visual figure or pattern embedded in a complex visual array, when knowing in advance what the pattern is	The student must identify 10 animals that are embedded in a complex visual scene.
PI – Serial Perceptual Integration: The ability to apprehend and identify a pictorial or visual pattern when parts of the pattern are presented rapidly in serial or successive order	The student is required to correctly identify or name a stimulus when portions of the stimuli are presented serially (e.g., portions of a line drawing of a cat are passed through a small "window").
LE – Length Estimation: The ability to accurately estimate or compare visual lengths and distances without using measurement instruments	The student is presented with a series of paired double-arrow lines of differing orientations and must determine whether they are the same length or different.

IL – Perceptual Illusions: The ability to resist being affected by perceptual illusions involving geometric figures	The student is presented with a series of geometric shapes and lines that have been altered in terms of specific features and determine whether the shapes and/or lines are the same or different on the basis of size alone.
PN – Perceptual Alternations: The consistency rate of alternating between different visual perceptions	The student is asked to sort a series of cards along one visual dimension and then in midstream, sort on the basis of a different dimension.
IM – Imagery: The ability to vividly mentally manipulate abstract spatial forms	The student is given a starting stimulus and must follow a series of verbal transformations to determine the resultant stimuli.

Ga – **Auditory Processing:** The ability to perceive, analyze, and synthesize patterns among auditory stimuli as well as discriminate subtle differences in patterns of sound and speech when presented under distorted conditions.

Narrow Ability Definition	Example
PC:A – Phonetic Coding (Analysis): The ability to segment larger units of speech sounds into smaller units of speech sounds	The student is presented with the pronunciation of a word and must identify the beginning and ending sounds.
PC:S – Phonetic Coding (Synthesis): The ability to blend smaller units of speech together into larger units of speech	The student is presented with the isolated sounds for a word and must blend the sounds together and identify the word.
US – Speech Sound Discrimination: The ability to detect differences in speech sounds under conditions of little distraction or distortion	The student is presented with a series of tape-recorded phonetically non-meaningful sounds and must identify whether the sounds are the same or different.
UR – Resistance to Auditory Stimulus Distortion: The ability to understand speech and language that has been distorted or masked in one or more ways	The student must identify monosyllabic and multisyllabic words while listening to an increasing level of noise presented through earphones.
UM – Memory for Sound Pattern: The ability to retain on a short-term basis	The student is presented with a series of tone patterns and later must identify

auditory events such as tones, tonal patterns, and voices	whether subsequently presented patterns were among those originally heard.
U3 – General Sound Discrimination: The ability to discriminate tones, tone patterns, or musical materials with regard to pitch, intensity, duration, and rhythm	The student is presented with two short musical patterns and must identify whether the patterns are similar or different and, if different, how they differ.
UK – Temporal Tracking: The ability to track auditory temporal events so as to be able to count, rearrange, or anticipate them	The student is presented with a steady pattern of musical beats and must identify the note that is to come next after the music has stopped.
UA, UT, UU – Hearing and Speech Threshold Factors: The ability to hear pitch and varying sounds over a range of audible frequencies	The student is presented with a series of 15 tape-recorded sounds and must indicate by writing a check mark in a response booklet whenever they hear a sound.
UL – Sound Localization: The ability to localize heard sounds in space	The student is presented with earphones and must indicate whether a presented sound was heard in the left, right, or both sides of the headset.
UP – Absolute Pitch: The ability to perfectly name or identify the pitch of tones	The student is presented with a sound and verbally or graphically identifies the pitch name.
U1, U9 – Musical Discrimination and Judgment: The ability to discriminate and judge tonal patterns in music with respect to melodic, harmonic, and expressive aspects (e.g., phrasing, tempo, intensity variations)	The student is presented with short musical phrases and must discriminate/judge whether the patterns in the music are melodic or harmonic, as well as identify the expressive aspects of the musical selection.
U5 – Sound-Frequency Discrimination: The ability to discriminate frequency attributes (pitch and timbre) of tones	
U6 – Sound-Intensity/Duration Discrimination: The ability to discriminate sound intensities and to be sensitive to the temporal/rhythmic aspects of tonal patterns	
U8 – Maintaining and Judging Rhythm: The ability to recognize and maintain a musical or equal time beat	

Glr – **Long-Term Storage and Retrieval:** The ability to store new or previously learned information (e.g., concepts, ideas, items, or names) in long-term memory and to retrieve it fluently later through association.

Narrow Ability Definition	Example
MA – Associative Memory: The ability to recall one part of a previously learned but unrelated pair of items when the other part is presented (i.e., paired-associative learning)	The student is presented with a set of visual stimuli paired with nonsense words and must correctly identify the nonsense word that had been presented with a certain visual stimulus.
MM – Meaningful Memory: The ability to recall a set of items where there is a meaningful relation between items or the items comprise a meaningful story or connected discourse	The student is presented with a short story and must retell the story as accurately as possible immediately following a single presentation.
FI – Ideational Fluency: The ability to produce rapidly a series of ideas, words, or phrases related to a specific condition or object. Quantity, not quality, is emphasized.	The student is asked to name quickly what he or she would do in preparation for a weeklong trip.
FA – Associational Fluency: The ability to produce rapidly words or phrases associated in meaning (semantically associated) with a given word or concept	The student must name as many examples as possible of objects that fit into a specified category (e.g., name as many fruits as you can think of) within a specified time limit.
NA – Naming Facility: The ability to produce names for concepts rapidly when presented with a pictorial or verbal cue	The student must rapidly provide the general name of a category when shown specific pictorial stimuli (e.g., a picture of an apple, shirt, and bus would require the reply: fruit, clothing, transportation).
M6 – Free Recall Memory: The ability to recall as many unrelated items as possible, in any order, after a large collection of items is presented	The student is presented with a series of objects and, after they are removed, must recall the objects in any order.
FE – Expressive Fluency: The ability to rapidly think of and organize words or phrases into meaningful complex ideas under high general or more specific cueing conditions	The student must rapidly name a category that best represents a series of presented words.

FW – Word Fluency: The ability to rapidly produce words that have specific phonemic, structural, or orthographic characteristics (independent of word meaning)	The student must name as many words as he can think of that start with the "sh" sound within a specified time limit.
FF – Figural Fluency: The ability to rapidly draw or sketch several examples or elaborations when given a starting visual or descriptive stimulus	The student must draw as many things as he can when presented with a non- meaningful starting visual stimulus.
FX – Figural Flexibility: The ability to	The student is presented with five
quickly change sets in order to generate	geometric shapes and must manipulate
new and different solutions to figural	those shapes to create objects described by
problems	the examiner.
SP – Sensitivity to Problems: The ability to identify and state practical problems in a given situation or to rapidly think of and state various solutions to, or consequences of, such problems	The student is required to answer questions such as "What is the thing to do if you lock your keys in the car?"
FO – Originality/Creativity: The ability to	The student is given a starting stimulus
rapidly produce original, clever, or	word such as "cat" and must construct as
uncommon verbal or ideational responses	many words as he can using those three
to specified tasks	letters in the word.
L1 – Learning Abilities: The ability to	The student must learn paired-associate
apprehend newly presented information	material to a criterion during a study phase
and to demonstrate subsequent acquisition	that is followed by an intervening task and
of such information	finally a "relearning" testing phase.

Gs – **Processing Speed:** The ability to perform cognitive tasks fluently and automatically, particularly when under pressure to maintain focused attention and concentration.

Narrow Ability Definition	Example
P – Perceptual Speed: The ability to search	The student must rapidly view rows of
for rapidly and compare known visual	stimuli and cross out those stimuli that are
symbols or patterns presented side by side	similar within the presented row within a
or separated in a visual field	specified time limit.
R9 – Rate of Test-Taking: The ability to	The student is required to pair numbers
perform rapidly tests that are relatively	with symbols according to a presented key
easy or that require very simple decisions	as rapidly as possible.
N – Number Facility: The ability to manipulate and deal with numbers rapidly and accurately, from elementary skills of counting and recognizing numbers to advanced skills of adding, subtracting, multiplying, and dividing numbers	The student is required to complete a series of arithmetic problems using paper and pencil in a specified time limit.
R4 – Semantic Processing Speed: The	The student is presented with a
ability to rapidly make decisions that	word/phrase and is then told to remove/add
require some encoding and mental	a letter/word within the word/phrase within
manipulation of stimulus content	a specified time limit.

Grw-r – **Reading Ability:** This is an acquired store of knowledge that includes basic reading skills required for the comprehension of written language.

Narrow Ability Definition	Example
RD – Reading Decoding: The ability to recognize and decode words or pseudo-words in reading	The student is required to accurately pronounce a list of real words or nonsense words at grade level.
RC – Reading Comprehension: The ability to comprehend connected discourse during reading	The student is required to read a short passage and respond to questions about the passage.
V – Verbal (printed) Language Comprehension: General development, or the understanding of words, sentences, and paragraphs in native language, as measured by reading vocabulary and reading comprehension tests	The student must read a list of four vocabulary words and choose two of the four words that belong together in some meaningful way.
CZ – Cloze Ability: The ability to supply words deleted from prose passages that must be read	The student is required to read a short passage and supply a missing word that best corresponds to the theme or content of the passage.
RS – Reading Speed: Time required to silently read a passage or series of sentences as quickly as possible	The student is asked to silently read a passage for one minute. Reading speech reflects words per minute read.

Grw-*w* – Writing Ability: This is an acquired store of knowledge that includes basic writing skills required for expressing thoughts and ideas through writing.

SG – Spelling Ability: The ability to spell words correctly, in particular words that are spelled non-phonetically or are irregular	The student must spell a series of increasingly difficult orally presented words.
WA – Writing Ability: The ability to write with clarity of thought, organization, and good sentence structure	The student is given a starting stimulus and must write a well organized story that adheres to the structural rules of writing.
EU – English Usage Knowledge: Knowledge of writing in the English language with respect to capitalization, punctuation, usage, and spelling	The student must correct sentences with respect to capitalization, punctuation, spelling, and usage errors.

Gq – **Quantitative Knowledge:** Represents and individual's store of acquired quantitative, declarative, and procedural knowledge. It involved the ability to use quantitative information and manipulate numeric symbols.

Narrow Ability Definition	Example		
KM – Mathematical Knowledge: The	The student is asked to demonstrate		
range of general knowledge about	knowledge of basic mathematical facts and		
mathematics	operations.		
A3 – Mathematical Achievement: Measured mathematic achievement	The student is required to perform simple mathematical calculations using pencil and paper.		
RQ – Quantitative Reasoning: The ability	The student is presented with an		
to inductively and deductively reason with	incomplete series of related numbers and		
concepts involving mathematical relations	must select the number(s) that best		
and properties	complete(s) the series.		

E. A Word about Cognitive Referencing

Cognitive referencing refers to the comparison of scores on norm-referenced tests of language abilities to scores on norm-referenced tests of cognitive abilities or intellectual functioning (ASHA, 2000). Cognitive referencing *should not be used* for the identification of a speech or language impairment. Use of a simple discrepancy calculation is no longer allowed for determination of a learning disability, nor should it be used for determination of a language disorder.

Cognitive referencing is not an issue of concern when using the Cross Battery Analysis approach based on the CHC Theory of Intelligence. Language is viewed as one of the broad factors of intelligence, and language test results are included in the broad general intelligence factor of crystallized intelligence (Gc). Earlier concerns about comparing language scores to intelligence scores do not apply when using this theoretical construct.

Cross Battery Analysis involves the comparison of scores, but is not considered cognitive referencing. When analyzing scores within the CHC Theory of Intelligence, comparisons of scores and confidence interval bands are used to describe cognitive skills.

III. Planning the Cross Battery Analysis

A. Indicators of Need for Cross Battery Analysis

One or more of the following apply:

1. Student continues to exhibit significant language and academic difficulties after classroom support and general education interventions have been provided for a reasonable period of time, indicated by lack of growth in targeted skills on frequent measures of progress over time.

2. Student is having significant difficulty meeting grade-level expectations, as indicated by

- a. Benchmark assessments
- b. In-class tests
- c. Norm- or criterion-referenced tests
- d. Statewide assessments (TAKS)
- e. Grades
- f. (Lack of) response to intervention

3. Student is due for three-year re-evaluation, is currently identified as SI only, continues to have language concerns and has difficulty meeting grade- and/or age-level expectations.

4. Student is due for three-year re-evaluation, is presently eligible for special education with a learning disability, and performance data indicates oral language concerns.

5. Student is being considered for dismissal from SI for language, but is struggling to meet grade- and/or age-level expectations.

B. Assessment Questions

- 1. The multidisciplinary team examines the referral information to determine the areas of concern.
- 2. The team develops assessment questions that, when answered, provide sufficient information about the student's learning profile to guide instruction, intervention, or IEP decisions.
- 3. The assessment questions determine which formal and informal tests and procedures are selected for administration. When using Cross Battery Analysis the multidisciplinary team poses questions about the deficit areas, or areas where the student seems to be struggling to meet grade-level expectations.
- 4. Example:
 - a. Teacher concerns: Student has difficulty with reading comprehension and expressing himself.
 - b. Assessment question: Does the student exhibit a learning disability in reading and/or a language disorder that contributes to low academic performance?
- 5. Example:
 - a. Teacher concerns: Student cannot answer questions and has difficulty with math.
 - b. Assessment question: Does the student have a learning disability (in listening comprehension and/or math)? Does the student have a language disorder?
- 6. For three-year re-evaluations, the multidisciplinary team uses the present levels of academic achievement and functional performance and data about progress on IEP goals and in the general education curriculum to develop the assessment questions.

C. Individual Assessment Plan

- 1. IDEA 2004 requires that the child is assessed in all areas related to the suspected disability including, if appropriate [CFR §300.304 (c) (4)]:
 - a. Health
 - b. Vision
 - c. Hearing
 - d. Social and emotional status
 - e. General intelligence
 - f. Academic performance
 - g. Communicative status
 - h. Motor abilities
- 2. The Individual Assessment Plan allows the multidisciplinary team to identify the areas that have been sufficiently addressed with data in the referral information, and the areas that need further in-depth assessment.
- 3. Following review of the referral information and development of the assessment questions, the multidisciplinary team plans the cross battery analysis using the Cross Battery Analysis Planning Form.
- 4. The SLP's role in planning the assessment is to review the available information and discuss the tests and subtests needed to address language skills and the areas of Crystallized Intelligence (Gc), Auditory Processing (Ga), Fluid Reasoning (Gf), and Short-term Memory (Gsm) that may contribute to the student's struggle to meet grade-level expectations. Consideration should also be given to planning assessment activities that provide comprehensive information about the student's language learning profile. Refer to the eligibility guidelines in the Language Eligibility Manual.

D. Cross Battery Analysis Planning Form

Student:	Grade	e/Age:	School:					
Multidisciplinary Team Members:								
Date Referral Received: Date of Planning Session:								
Referral Information	Referral Information/Concern:							
Learning Profile: Teacher data or RTI data Assessment Question/s:								
Area	Address	Assess	MDT Member Responsible	Tests/Procedures	Target Completion			
Sociological								
Physical/ Motor/ Medical								
General Intelligence Gf Gc Gv Ga Gsm Glr Gs								
Adaptive Behavior								

Educational Performance/ Achievement Gr - Gw - Gq Basic Reading Reading Comp Reading Fluency Math Calculation Math Reasoning Listening Comp Oral Expression			
Emotional/ Behavioral			
Assistive Technology			
Speech- Language Communication			
Articulation			
Voice			
Fluency			
Language			
Syntax Phonology Semantics Pragmatics Metalinguistics			

Tests and Assessment Procedures to be Used:

IV. Conducting the Cross Battery Analysis

A. Language with Learning Disabilities Eligibility Flow Chart



B. Language with Learning Disabilities Step-by-Step for SI-Language Eligibility

- For a non-identified student, teacher or parent brings learning concerns to the Student Support Team (SST). If language is indicated as a concern, the Speech-Language Pathologist (SLP) participates in a review of existing data. Parent, teacher, and other school staff provide information about the student to bring to the Student Support Team (SST) meeting, including:
 - a) Vision and hearing screening
 - b) Data about student performance such as grades, attendance, response to extra support and intervention, state and district assessment results, and/or reading level
 - c) Parent and Teacher Language Surveys (See Section VIII.B for Parent Language Survey; see Language Manual for Teacher Language Survey)
- 2) SST members discuss concerns about the student and
 - a) suggest recommendations for further classroom support or focused intervention

and/or

b) refer for special education evaluation if the student has an obvious disability.

In the case of "2-a", the SST reconvenes after the recommended support and intervention have been provided and determines from data collected if referral for a full and individual evaluation is recommended or if interventions have been successful.

In the case of "2-b" or if classroom support and interventions have not been successful, the SST makes a referral to special education for a full and individual evaluation.

- 3) In the case of a student already identified as having a disability but for whom an additional disability is suspected, the SST or the Admission, Review, Dismissal (ARD) Committee reviews existing data including prior evaluations. If the student has been previously identified as having a Speech Impairment (SI), and/or language is indicated as a concern, the SLP participates in the multidisciplinary team review of existing data.
- 4) If a referral is initiated or additional evaluation is planned, follow district procedures for providing all Notice, Consent, and Procedural Safeguards to parents.
- 5) The multidisciplinary team reviews the referral to determine if Cross Battery Analysis is indicated (see Indicators of Need for Cross Battery Analysis, Section III-A) and completes the Cross Battery Analysis Planning Form (Section III-D).
- 6) SLP, educational diagnostician, and/or Licensed Specialist in School Psychology (LSSP) complete standardized testing and formal and informal assessment procedures
including collecting teacher data, parent data (see Parent Language Survey, Section VIII-B), observation data, language sample, and checklists.

- 7) The multidisciplinary team members integrate standardized test results into a cross battery analysis format and determine if data is adequate for broad and narrow strata.
 - a) When cross battery analysis and all data are consistent with below average crystallized intelligence and show evidence of distortion or disruption in language development, while other broad strata are within general range of proficiency or higher, the SLP concludes that a language disorder is present.
 - b) When cross battery analysis and all data are consistent with crystallized intelligence within the general range of proficiency or higher, the SLP concludes that a language disorder is not present.
 - c) When cross battery analysis reveals that not all broad and narrow strata are adequately addressed or data is inconsistent, the multidisciplinary team conducts additional testing, using formal or informal procedures.
- 8) When a language disorder is present, the SLP compiles documentation to address whether there is an adverse effect on educational performance resulting from the communication disorder.
- 9) The educational diagnostician and/or LSSP, in cooperation with the SLP, writes an integrated Full and Individual Evaluation (FIE) report that addresses all areas of disability with links to instructional considerations that address area(s) of disability.
- 10) If there is evidence for SI eligibility with a language disorder, the SLP should prepare language remediation recommendations to be presented to the ARD Committee.
- 11) The ARD meeting is scheduled to review the FIE to determine:
 - a) if there is evidence for SI condition with a language disorder
 - b) if there is an adverse effect on educational performance resulting from the language disorder, and
 - c) if specially designed instructional or related services and supports are needed to help the student make progress in the general education curriculum.
- 12) If SI eligibility and direct services are warranted the SLP presents draft goals and objectives for ARD approval.
- 13) If SI eligibility is not determined with direct services, ARD committee with SLP, defines indirect/consultation role of SLP, if any.
- 14) If SI eligibility is not determined, the SLP may make recommendations for instructional accommodations or modifications for the classroom teacher based on the evaluation data.

C. Converting Scaled Scores to Standard Scores

The following conversion chart is used when a standardized test yields scaled scores. Standard scores are used in cross battery analysis. When using the <u>www.crossbattery.com</u> site, many of the instruments automatically convert the scores from scaled scores to standard scores. If the instrument is not used on the site, use the conversion chart to calculate the standard score to enter on cross battery analysis forms.

Confidence intervals are derived from the standard scores in order to determine the confidence interval bands as a point of comparison in the broad and narrow abilities.

10	=	100
9	=	95
8	=	90
7	=	85
6	=	80
5	=	75
4	=	70
3	=	65
2	=	60
1	=	55

V. Analysis of Cross Battery Results

A. Cross Battery Analysis

- 1. After testing the student, the assessment data should be entered in one of several cross battery data analysis tools. It is recommended that the MDT/District decide which analysis tools will be used to maximize consistent decision making and allow for integration of data from the multidisciplinary team members. Some tools to consider include:
 - a. <u>www.crossbattery.com</u>. This is a free Excel spreadsheet document that was developed by Flanagan, Ortiz, & Alfonso (2007). This tool allows the MDT to enter multiple assessment scores obtained by the various team members and provides space for entry of SLP test scores. It does not limit the number of subtests or tests that can be entered into the spreadsheet.
 - b. Developed by the same authors is a CD that can be used to analyze the assessment data (Flanagan, D., Ortiz, S., & Alfanso, V., 2007, *Essentials of Cross-Battery Assessment*, 2nd ed. New York: John Wiley & Sons). This tool limits the number of assessment scores that can be entered into the Excel spreadsheet. It also does not list the language tests typically used by speech pathologists. The SLP's scores can be entered into the spreadsheets on the CD, but the MDT will need to determine which broad and narrow cognitive ability each language test measured.
 - c. Districts may also develop their own tools to use to summarize and analyze assessment data.
- 2. The MDT compares confidence interval bands within each broad stratum to check for unitary scores. Confidence interval bands are considered unitary when the narrow stratum bands touch or overlap.
- 3. If confidence interval bands do not touch or overlap, MDT members validate the low score by administering another subtest in the same narrow ability. Low scores need to be validated to ascertain why the student obtained the low score and determine whether this is truly an area of weakness for the student.
 - a. Following administration of additional subtests in the narrow ability, the MDT member compares confidence interval bands to validate scores.
 - b. If there is still a low score, the MDT investigates further to determine if a task demand or student behavior may be causing the low score. The MDT also analyzes other data from formal and informal procedures to aid analysis.
- 4. An outlier is a score that is not unitary/convergent following attempts to validate scores. The MDT discusses outliers and implications for understanding the student's learning profile. The MDT may determine that outlier scores are not factored into the student's profile.

- 5. Once the MDT has validated scores in all the cognitive processing areas, team members identify normative deficits and a pattern of strengths and weaknesses within the cognitive processing areas:
 - a. The cognitive processing areas include:
 - i. Fluid reasoning (Gf)
 - ii. Long-term retrieval (Glr)
 - iii. Short-term memory (Gsm)
 - iv. Auditory processing (Ga)
 - v. Visual processing (Gv)
 - vi. Processing speed (Gs)
 - vii. Crystallized intelligence (Gc)
 - b. Normative deficits are present when there are broad stratum or narrow ability scores below average. The Standard Error of Measurement should be considered.
- 6. The MDT determines whether there is a link between normative deficits and classroom academic performance. For example:
 - a. Weakness in Gc matches teacher's concern about inability to comprehend passage heard (listening comprehension)
 - b. Weakness in Gc and Ga aligns with teacher's concern that student cannot answer questions about a story (listening comprehension)
 - c. Weakness in Gc links with teacher's concern that student has difficulty expressing answers to questions (listening comprehension, oral expression)
- 7. The SLP compares the cross battery analysis with other language assessment data including language sample, observation of communication skills in the classroom, parent data, teacher data, referral information, and analysis of academic struggle related to language assessment data (see Section V.C, Language Disorder Checklist for Cross Battery Analysis).

B. Sample Data Entry Form from crossbattery.com



Ga - AUDITORY PROCESSING CHC CROSS-BATTERY WORKSHEET

Battery		Ga – Auditory Processing	LD		SS				
or Test	Age	Narrow Abilities Tests	Area	SS*	(100 <u>+</u> 15)				
	0								
		Phonetic Coding: Analysis (PC:A)							
Tests of Achievement									
CTOPP	5-24	Elision	BR						
CTOPP	5-7	Sound Matching	BR						
CTOPP	7-24	Phoneme Reversal (Gsm-MW)	BR						
CTOPP	7-24	Segmenting Words	BR						
CTOPP	7-24	Segmenting Nonwords	BR						
DAB-3	6-14	Phonemic Analysis	BR						
ITPA-3	5-12	Sound Deletion	BR						
TOCL	5-8	Knowledge of Print	BR						
TOLD-P:3	4-8	Phonemic Analysis	BR						
TOPA	5-6	Initial Sounds	BR						
TOPA	6-8	Ending Sounds	BR						
WJ III	4 - 90+	SOUND AWARENESS (PC:S)	BR						
Other									
Tests of Co	gnitive Al	bility							
NEPSY	3-12	Phonological Processing (PC:S)							
TPAT	5-9	Segmentation							
TPAT	5-9	Isolation							
TPAT	5-9	Deletion							
TPAT	5-9	Rhyming							
WJ III	2-85+	INCOMPLETE WORDS							
Other									
		1. Sum of column							
		2. Divide by number of tests							
		3. Phonetic Coding: Analysis average	e						

Phonetic Coding: Synthesis (PC:S)

Tests of Achievement							
CTOPP	5-24	Blending Words	BR				
CTOPP	5-24	Blending Nonwords	BR				
WDRB	4-95	Incomplete Words	BR				
WDRB	5-95	Sound Blending	BR				

Name:	_
Age:	_
Grade:	_
Examiner:	_
Date of Evaluation:	_

AUDITORY PROCESSING is the ability to perceive, analyze, and synthesize patterns among auditory stimuli. It includes the following narrow abilities:

Phonetic Coding (Analysis) (PC:A):

Ability to process speech sounds, as in identifying, isolating, and analyzing sounds.

Phonetic Coding (Synthesis) (PC:S): Ability to process speech sounds, as in identifying, isolating, and blending or synthesizing sounds.

Speech/General Sound Discrimination

(**ÚS/U3**): Ability to detect differences in speech sounds under conditions of little distraction or distortion.

Resistance to Auditory Stimulus Distortion (UR): Ability to understand speech and language that has been distorted or masked in one or more ways.

C. Language Disorder Checklist for Cross Battery Analysis

Student:		SLP:	
Date of Birth:	_CA:	Campus:	Date Completed:

Referral Concern: _____

Evaluation Tool	Results		Data Supports Concern	
		Yes	No	
Teacher Language Survey (# of items marked "rarely" by teacher)	Semantics Syntax Pragmatics (if #s are >5, indicates a concern)			
Parent Language Survey				
Informal Achievement Data Criterion-Referenced Measures Curriculum-Based Measures RTI data Work Samples (i.e writing) Classroom Tests Grades Formal Achievement Data Tests used:	Area of Academic Concern: Listening Comprehension Oral Expression Semantics Syntax Metalinguistics Pragmatics Phonology			

Evaluation Tool	Results			Data Supports Concern		
					Yes	No
Cognitive Profile from XBA *Report confidence intervals	Broad/Narrow Ability	Conf. Int.*	Strength	Weakness		
Tests Used:	Gc					
	Gsm					
	Ga					
	Glr					
	Gs					
	Gf					
Obtain data from MDT across all data sources.	Gv					
Language Samples: Conversational Narrative 	MLU-M Analysis of Mazes Type Token Ratio: # wds # different wds Error Analysis					

If all of the measures reported above support the referral concern, and a pattern of strengths and weaknesses has been identified in the cognitive and/or achievement profile, then consideration of a more global language-based Specific Learning Disability may be present. This may result in the need for specially designed instruction in addition to SLP services. If there is any disagreement within the data listed above continue the assessment by administering additional standardized tests and/or informal procedures to collect sufficient data.

Evaluation Tool	Results		Data Supports Concern	
		Yes	No	
Additional Formal Measures:				
Additional Informal Measures:				
Recomn	nendations to the ARD committee			
Stage I: Presence of a Language Disorder				
Stage II: Academic Implications of the Disorder				
If yes to Stage I and II, then answer Stage III: Is specially designed instruction by an SLP needed to help the student make progress in the general education curriculum?				

VI. Interpretation of Cross Battery Analysis Results

A. Cross Battery Interpretation for LD Determination

Interpret broad ability/processing clusters:

- A. If the broad ability/processing cluster is unitary/convergent, then the scores are cohesive (confidence interval bands for different narrow abilities within the same cluster touch or overlap) and the results are interpretable.
- B. If the broad ability/processing cluster is non-unitary/non-convergent, then there is significant variability among narrow abilities so that the cluster score does not provide a good estimate of the ability/process it is intended to measure. The results are not interpretable.
 - i. When non-unitary/non-convergent scores are within normal limits or higher and/or the non-unitary broad ability is not central to referral concerns, assume that the broad ability/cluster is intact.
 - ii. When the non-unitary/non-convergent broad ability is central to referral concerns or if one or more narrow ability/processing indicators are below average, conduct additional testing for more definitive information about the deficient/below average ability.
 - Weak areas that are considered non-unitary need to be verified. Identify the low areas within the narrow ability and give a second measure of that narrow ability. If the weakness is validated, task demands should be considered as a possible explanation for the weak area. If the weakness is not validated, the score is considered an outlier.
 - It is important to select subtests within the same narrow ability area whenever possible.

Guiding Questions for LD Determination

Question 1: Is there a normative deficit in academic achievement?

Normative deficits are determined by analyzing the degree to which the student has learned commensurate with age and grade expectations. Consideration should be given to what the student has learned, what skills are present, and how these compare to age and grade level standards.

The types of data to be collected and reviewed include:

- Informal
- Criterion-referenced
- Curriculum-based
- Norm-referenced
- Response to Intervention data

Question 2: Is there a pattern of cognitive strengths and weaknesses?

- A pattern of cognitive strengths and weaknesses is determined by analyzing the seven (7) cognitive processing areas: Gc, Gsm, Ga, Glr, Gf, Gv, Gs.
- There should be more strengths than weaknesses.
- Pervasive weaknesses across the cognitive areas does not constitute a pattern of strengths and weaknesses.
- A pattern of strengths and weaknesses can be established by taking into consideration the narrow abilities.

The Texas Education Agency guidance document states:

In evaluating specific areas of cognitive functioning to determine a pattern of strengths and weaknesses, schools should take into consideration the federal definition of SLD as "a disorder in one or more of the basic psychological processes involved in understanding or in using language" [CFR §300.8 (c) (10)] An identified pattern of strengths and weaknesses should be linked to the failure to achieve adequately as described above when used as a determination of SLD. Students whose classroom achievement indicates a pervasive weakness that does not constitute a pattern of strengths and weaknesses should not be determined to have a SLD. Students who meet the criteria as having mental retardation should not be determined to have a SLD.

http://ritter.tea.state.tx.us/special.ed/guidance/rules/89.1040.html

Question 3: Is there a relationship between the cognitive deficits and academic deficits?

Determine if there is consistency between the identified academic/achievement deficits and the identified cognitive deficits.

Cognitive	Reading	Math	Writing	Oral	Listening
Process/ Narrow Ability*	Achievement	Achievement	Achievement	Expression	Comprehension
Gf	Х	XX	Х		
Gc	XX	XX	XX	Х	Х
Gsm	Х	Х	XX	Х	Х
Gv	Х	Х			
Ga	XX		Х		Х
Glr	XX		Х		
Gs	XX	XX	XX		

Summary of Correlation	between Cognitive Process	ses and Academic Achievement

X = Correlation **Bold XX** = strongest correlation *Add narrow ability area(s) evaluated

It is recommended that the SLP provide input to the MDT in the areas that relate to language, and especially in the areas of LD oral expression, listening comprehension, reading comprehension, and written expression.

Question 4: Is there evidence of a functional impairment?

The condition of a learning disability is indicated when the answer to Questions 1, 2, and 3 is "yes."

- 1. There is a normative deficit in academic achievement.
- 2. There is a pattern of strengths and weaknesses.
- 3. There is a relationship between cognitive processing deficits and academic deficits.
 - a. There is evidence of a functional impairment resulting from the learning disability.
 - b. The MDT describes how the condition of LD leads to an impairment in educational performance.
 - c. The ARD Committee addresses educational need for eligibility determination.

B. Cross Battery Interpretation for Language Disorder

Stage 1: Determine if data indicate the presence of a language disorder.

- ▶ Review summary data from the Language Disorder Checklist (Section V.C).
- A language disorder is present when data is consistent and indicates disruption in the development of phonology, syntax, semantics, metalinguistics, and/or pragmatics. Data sources: teacher information, parent information, language sample analysis, evidence of academic struggle for language related areas, cross battery analysis results shows Gc is both a normative and a relative weakness (more than one standard deviation below the mean and weaker than other cognitive processing areas).
- A language disorder is not present when data is consistent and within average ability range or higher. Data sources: teacher information, parent information, language sample analysis, academic performance, cross battery analysis results show Gc is in the average range or higher, or is below average but commensurate with other cognitive processing/ability areas.
- Results are not interpretable when data are not consistent; that is, results conflict with each other. In this case, gather additional information about the student's language functioning and conduct additional testing to bring results into alignment to:

Provide evidence of a language disorder *and* Explain data disparity; *or* Provide evidence that a language disorder is not present.

Stage 2: Is there an adverse effect on educational performance?

When a language disorder is present, determine if there is an adverse effect on educational performance (academic achievement and/or functional performance) resulting from the language disorder. Data sources: teacher information; parent information; informal data that documents listening, speaking, reading, and writing skills in areas of academic weakness; curriculum-based measures; work samples; language sample analysis.

Stage 3: Are SLP services needed in order for the student to make progress in the general education environment?

When the language disorder is linked to an adverse effect on educational performance, determine if specially designed instruction by the SLP is needed in order for the student to make progress in the general education curriculum. Take the following into consideration:

- Least Restrictive Environment
- Continuum of services direct and indirect services; pull-out services, classroom-based models, etc.
- Examine what other programs, services, or interventions will be provided, and look for duplication of effort.

VII. Making Eligibility Recommendations

A. Eligibility Recommendation: Speech Impairment with Language Disorder

Refer to the Language Disorder Checklist (Section V.D) for a summary of evaluation data to support the eligibility recommendation for Speech Impairment with a language disorder. When the answer to all three questions is "yes," the multidisciplinary team recommends consideration of Speech Impairment as an eligibility condition.

- 1. Is there evidence of a language disorder?
- 2. If so, is there evidence of an adverse effect on educational performance (academic achievement or functional performance) resulting from the language disorder?
- 3. If so, is specially designed instruction by an SLP needed to help the student make progress in the general education curriculum?

The condition of Speech Impairment is not recommended when student data does not show evidence of:

- 1. The presence of a language disorder; or
- 2. An adverse effect on educational performance resulting from the language disorder; or
- 3. The need for specially designed instruction from the SLP to help the student make progress in the general education curriculum.

B. Eligibility Recommendation: Learning Disability

As *part of the multidisciplinary team*, the SLP may be engaged in the deliberation of the condition of a learning disability when the referral concerns include language. A learning disability is established when the answer is "yes" to all of the following four questions:

- 1. Is there a normative deficit in academic achievement?
- 2. Is there a pattern of cognitive strengths and weaknesses?
- 3. Is there a relationship between the cognitive deficits and academic deficits?
 - Basic Reading
 - Reading Comprehension
 - Reading Fluency
 - Math Reasoning
 - Math Calculation
 - Writing
 - Listening Comprehension
 - Oral Expression

4. Is there evidence of a functional impairment?

The presence of a speech or language disorder may or may not be linked to the presence of learning disability. As part of the multidisciplinary team, the SLP will:

- 1. Assist with the analysis of RTI information.
- 2. Provide evidence to support the presence of a learning disability, especially in the areas of listening comprehension and oral expression. Language testing data may also be support for the presence of a learning disability in the area of reading comprehension and written expression.
- 3. Analyze the task demands of subtests items to assure the intended skill is assessed and/or the student's true abilities are represented in the testing data.
- 4. Identify and account for possible discrepancies in assessment data collected by different members of the multidisciplinary team.

Learning Disability and Speech Impairment can co-occur, or be present independently of each other. It is important to answer the eligibility determination questions in both areas. For example, a student may exhibit a learning disability in listening comprehension or oral expression and not be coded with a speech impairment because there is no evidence that there is an adverse effect on educational performance resulting from a language disorder (SI Eligibility Question #2).

Refer to Section I: General Information, B. Learning Disability Eligibility Determination *for additional guidance*.

C. Sample Wording for Language Reports and/or FIE

Sample section for determining SI:

SUMMARY

The summary in the Full and Individual Evaluation (FIE) should include answers to Stage 1 and Stage 2 eligibility questions for SI:

- Stage 1: Is there a disability condition (i.e., communication disorder)?
- Stage 2: Is there an adverse effect on education resulting from the disability?

The answer to **both** of these questions must be **yes** in order to make an eligibility recommendation **for speech impairment**.

Example:

Based on the assessment data, the student's language skills indicate that >>>. It is the professional judgment of the speech-language pathologist/multidisciplinary team that the student does/does not exhibit a language disorder. Therefore, there are/are no language/communication factors that directly affect the student's ability to make progress in the general education curriculum.

It is the responsibility of the ARD committee to determine eligibility and educational need for special education and related services.

RECOMMENDATIONS

Recommendations in the FIE should include an answer to the Stage 3 eligibility question for SI:

• Stage 3: Are speech pathology services needed for this student to make adequate progress in the general education curriculum?

Example:

Based on the evaluation data, it is the recommendation of the speech-language pathologist that the ARD committee consider the student eligible with a speech impairment. S/he needs speech-language pathology services to address weaknesses in the areas of >>>.

or

Based on the evaluation data, it is the recommendation of the speech-language pathologist that the ARD committee not consider the student eligible with a speech impairment. Speech-language pathology services are not needed at this time. Weaknesses noted in the area of language are best addressed in the context of the student's curriculum through >>>.

Example:

It is recommended that the ARD committee consider adding/not adding the disability condition of Speech Impaired.

or

It is recommended that the ARD committee consider providing specialized instruction including Speech Therapy services.

If not eligible, recommendations should include any specific suggestions for improving classroom performance based on the data (strengths and weaknesses that have been identified).

Sample section for determining LD in listening comprehension or oral expression:

Example:

The assessment data indicates that the student has global linguistic deficits affecting the areas of ... which appear to be impacting his/her academic performance in the areas of ... The student demonstrated normative deficits in the areas of ... A pattern of strengths and weaknesses in the cognitive areas are indicated by strengths in the area/s of ... and weaknesses in the areas of The cognitive weaknesses appear to link to academic weaknesses in the areas of (listening comprehension or oral expression). Due to the linguistic deficits, this student meets the eligibility criteria as a student with a learning disability in the area of >>>.

While best practice is that all areas of suspected disability are addressed within an integrated FIE, occasionally a separate speech-language report or addendum to the FIE may be warranted. If writing the Speech and Language assessment as a separate report or as an addendum to the FIE, use the following wording as an example of a summary statement from the FIE about the presence of a learning disability in oral expression or listening comprehension:

Example:

Achievement data in the FIE, dated xxx, supports the presence of a Specific Learning Disability in the area of Oral Expression/Listening Comprehension. The pattern of Strengths in (list G's) and weaknesses in (list G's) along with deficits in ... fit the pattern of a Specific Learning Disability in Oral Expression/Listening Comprehension.

The Speech and Language assessment report should include a discussion of how the presence/absence of an identified language disorder relates to the learning disability in oral expression or listening comprehension.

D. Sample Wording for FIE Reports Description of the "G"s

Gf Fluid Reasoning

Fluid reasoning refers to a type of thinking that an individual may use when faced with a relatively new task that cannot be performed automatically. This type of thinking includes such things as norming 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), drawing inferences (e.g., after reading a story, answer the question), and reorganizing or transforming information. Overall, this ability can be thought of as a problem-solving type of intelligence.

Reading: Fluid reasoning or reasoning abilities have been shown to play a moderate role in reading. For example, the ability to reach general conclusions from specific information is important for reading comprehension.

Math: Fluid reasoning is related to mathematical activities at all ages. For example, figuring out how to set up math problems by using information in a word problem is important for math reasoning.

Written Expression: Fluid reasoning skills related to basic writing skills primarily in elementary school years and are consistently related to written expression at all ages.

Gc Crystallized Intelligence

Crystallized abilities refer to a person's knowledge base (or general fund of information) that has been accumulated over time. It involves knowledge of one's culture, as well as verbal or language-based knowledge that has been developed during general life experiences and formal schooling.

Reading: Crystallized abilities, especially language development, vocabulary knowledge, and ability to listen, are important for reading. This ability is related to reading comprehension in particular. Low crystallized abilities may hamper an individual's ability to comprehend written text due to a lack of vocabulary knowledge, basic concepts, and general life experiences that are needed to understand the text.

Math: Crystallized abilities, including language development, vocabulary knowledge, and listening abilities, are important to math achievement at all ages. These abilities become increasingly important with age. Low crystallized abilities may hamper an individual's ability to comprehend word problems due to lack of vocabulary knowledge. They may hamper one's ability to learn basic math processes, such as long division, due to impairments in one's ability to listen to and follow sequential directions.

Written Expression: Crystallized abilities such as language development, vocabulary knowledge, and general information are important to writing achievement primarily after age seven (7). These abilities become increasingly important with age.

Oral Language: Crystallized abilities, especially language development, vocabulary knowledge, and the ability to listen, are important for both listening comprehension and oral expression. Low crystallized abilities may hamper an individual's ability to comprehend oral communications due to a lack of vocabulary knowledge, basic concepts, and general life experiences that are needed to understand the information being presented.

Gv Visual Processing

Visual processing is an individual's ability to think about visual patterns and visual stimuli (e.g., What is the shortest route from your house to school?). This type of cognitive processing ability also involves the ability to generate, perceive, analyze, synthesize, manipulate, and transform visual patterns and stimuli (e.g., Draw a picture of how this shape would look if I turned it upside down.) Additionally, examples of this type of ability include putting puzzles together, completing a maze, and interpreting graphs or charts.

Math: Visual processing may be important for tasks that require abstract reasoning or mathematical skills.

Ga Auditory Processing

Auditory processing refers to the ability to perceive, analyze, and synthesize a variety of auditory stimuli (e.g., sounds).

Reading: Auditory processing or "phonological awareness/processing" is very important to reading achievement or reading development. Students who have difficulty with processing stimuli may experience problems with learning grapheme-to-phoneme correspondence, reading nonsense words, and decoding words due to an inability to segment, analyze, and synthesize speech sounds. Older students will usually have continued problems with decoding unfamiliar words.

Written Expression: Auditory processing is also very important for both writing skills and written expression. Students who are weak in auditory processing abilities may have difficulty spelling since this skill requires the ability to attend to the detailed sequence of sounds in words.

Oral Language: Auditory processing deficits may be linked to academic difficulties with listening comprehension. Students may have difficulty interpreting lectures, understanding oral directions, learning a foreign language.

Gs Processing Speed

Processing speed provides a measure of an individual's ability to process simple or routine visual information quickly and effectively and to quickly perform tasks based on that information. When information is processed slowly, competing stimuli in immediate awareness may cause overload stress on short-term memory. Tasks that involve multiple, complex processes can be particularly confusing and frustrating. Completing tests and assignments within the usual time constraints can also be difficult even when the student has adequate skills and knowledge.

Reading: Processing speed is important during all school years, particularly the elementary school years. Slow processing speed may impact upon reasoning skills since the basic rapid process of symbols (e.g., letters) if often necessary for fluent reading.

Math: Processing speed is important to math achievement during all school years particularly the elementary school years. Slow processing speed leads to a lack of automaticity in basic math operations (e.g., addition, subtraction, and multiplication).

Written Expression: Processing speed is important during all school years for basic writing and related to all ages for written expression.

Gsm Short-Term Memory

Short-term memory is the ability to hold information in one's mind and then use it within a few seconds. A component of short-term memory is working memory. Working memory relates to an individual's ability to attend to verbally or visually presented information. Difficulties with working memory may make the processing of complex information more time-consuming, draining a student's mental energies more quickly and perhaps resulting in more frequent errors on a variety of tasks.

Reading: Short-term memory is important to reading achievement. Reading comprehension, involving long reading passages, may be affected by skills specifically related to working memory. Basic word reading may be impacted by deficits in short-term memory because it may interfere with acquiring letter and word identification skills.

Math: Short-term memory is important to math computation skills. For example, deficits in short-term memory may impact one's ability to remember a sequence of orally presented steps required to solve long math problems (e.g., fist multiply, then add, then subtract).

Written Expression: Short-term memory is important to writing. Memory span is especially important to spelling skills, where working memory has shown relations with advanced writing skills (e.g., written expression).

Oral Language: A student with short-term memory deficits may have problems following oral directions because they are unable to retain the information long enough to be acted upon. A student with short-term memory deficits also may have problems with oral expression because of difficulties with word-find or being unable to retain information long enough to verbally express it.

Glr Long-Term Retrieval

Long-term retrieval refers to an individual's ability to take and store a variety of information (e.g., ideas, names, concepts) in one's mind, and then later retrieve it quickly and easily at a later time using association. This ability does not represent what is stored in long-term memory. Rather, it represents the process of storing and retrieving information.

Reading: Long-term retrieval abilities are particularly important for reading. For example, elementary school children who have difficulty retrieving names of objects or with rapid naming of categories of objects may have difficulty in reading. Associative memory abilities also play a role in reading achievement (e.g., being able to associate a letter shape to its name and its sound).

Math: Long-term retrieval abilities are important to math calculation skills. For example, students with deficits in long-term retrieval may have difficulty recalling basic addition, subtraction, multiplication, and/or division facts when encountered within a math problem.

Written Expression: Long-term retrieval abilities and naming facility in particular have demonstrated relations with written expression, primarily with the fluency aspect of writing.

Grw-r Reading Ability

This is an acquired store of knowledge that includes basic reading skills required for the comprehension of written language.

Grw-w Writing Ability

This is an acquired store of knowledge that includes basic writing skills required for expressing thoughts and ideas through writing.

Gq Quantitative Knowledge

Ability to comprehend quantitative concepts and relationships and to manipulate numerical symbols

VIII. Forms

A. Cross Battery Analysis Planning Form

Student: Grade/Age: School:

Multidisciplinary Team Members:

Date Referral Received: Date of Planning Session:

Referral Information/Concern:								
Learning Profile: Teacher data or RTI data								
Assessment Question(s):								
Area	Address	Assess	MDT Member Responsible	Tests/Procedures	Target Completion			
Sociological								
Physical/Motor/ Medical								
General Intelligence Gf Gc Gv Ga Gsm Glr Gs								
Adaptive Behavior								
Educational Performance/ Achievement Gr Gw Gq								

Emotional/ Behavioral			
Assistive Technology			
Speech- Language Communication			
Articulation			
Voice			
<u>Fluency</u>			
Language			
Syntax Phonology Semantics Pragmatics Metalinguistics			

Tests and Assessment Procedures to be Used:

Section VIII: Forms	
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Parent Language Surv	vey
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<i>Student:</i>	_ Campus:	_Date of Survey:	_Age:	Grade:
	- • ·····			

Person Completing Form:	
WHAT LANGUAGES ARE USED IN THE HOME?	(Country of language origin)
If ENGLISH or	nly, skip the rest of the page
Fill in this column if child	Fill in this column if second language was introduced in one
functionally uses 2 languages before 3 years of age	of the following: check one
(functionally communicates in two languages vs. rote	□Age 3–5
language learning, i.e., ABC, counting)	□Age 5 through elementary □ Middle school through graduation
SIMULTANEOUS LANGUAGE LEARNER	SEQUENTIAL LANGUAGE LEARNER
1. How well does the child use each language?	1. How was the second language introduced?
2. What % of the time does the child hear each language? Language% Language%	2. What % of the time does the child hear each language? Language% Language%
3. Which language does the child prefer now?	3. How well does the child use each language?
4. Have there been any changes in the child's ability in each language?	4. Which language does the child prefer now?
5. If so, what do you believe to be the cause of the change?	5. How was the first language developing before the second language was introduced?
	6. Were there any changes in the first language after the second language was introduced? How?
For both columns record the f	ollowing SOCIOLINGUISTIC FACTORS
1. What do you think your child's attitude is toward speaking Eng	
2. Is the child very social with peers? Y / N or in the home? Y / N	J
3. Which language does your child speak with peers?	
4. Which language does your child speak in the classroom?	
5. Which language does the caregiver need the child to speak?	
Following to be completed by appraisal personnel	
Summary: Language(s) for assessment: Data/Rationale:	

Does your child	Usually	Rarely
1. Use adjectives (function, size, color, shape, category, etc.)		
2. Name words associated with specific situations or nouns (salt and pepper, baseball and bat, bread and butter, garage and car)		
3. Identify items or words that go together (identify simple similarities of items in a category)		
4. Label objects and pictures at age level		
5. Describe/tell the function of items		
6. Learn school vocabulary at rate of other students		
7. Understand and use basic concepts (color, shape, size, quantity)		
8. Understand and use place words (prepositions)		
9. Understand meaning of what is spoken		
10. Ask for help when needed		
11. Respond appropriately and courteously to directions and questions		
12. Retell important events in activity or story		
13. Stay on subject when talking		
14. Clarify spoken message when listener does not understand		
15. Understand and relate specific information in messages		
16. Listen attentively to stories and other texts read aloud		
17. Connect experiences and ideas with those of others through speaking or listening		
18. Respond to simple directions and questions		
19. Use phrases or sentences of appropriate length for age		
20. Talk about things that happen in the past, present, and future		
21. Ask a variety of questions using correct grammar		
22. Answer questions with correct grammar		
23. Use negation correctly		

Summary Sheet

<i>Student:</i>	Campus:	Date of Survey:	Age:	Grade:
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SLP Scoring Form:_____

Semantics-Items Scored

Rarely	Comments
1, 2, 3, 4, 5, 6, 7, 8, 9	
Total:	3 or more items with "rarely" checked indicate concern on this checklist

Pragmatics-Items Scored

Rarely	Comments
10, 11, 12, 13, 14, 15, 16, 17	
Total:	3 or more items with "rarely" checked indicate concern on this check list

Syntax-Items Scored

Rarely	Comments	
18,19,20,21,22,23		
Total:	3 or more items with "rarely" checked indicate concern on this checklist	
**7 or more <i>total</i> items wit	h "rarely" checked indicate concern on this checklist	
Notes:		

Section VIII: Forms

C. Language Disorder Checklist for Cross Battery Analysis

Student:	SLP:			
Date of Birth: CA:	Campus:	Date Completed:		
Referral Concern:				
Evaluation Tool	Results		Data Supp Conc	
			Yes	No
Teacher Language Survey (# of items marked "rarely" by teacher)	Semantics Syntax Pragmatics	(if #s are >5 indicates a concern)		
Parent Language Survey				
Informal Achievement Data Criterion-Referenced Measures Curriculum-Based Measures RTI data Work Samples (i.e., writing) Classroom Tests Grades Formal Achievement Data Tests used:	Area of Academic C Listening Comprehe Oral Expression Semantics Syntax Metalinguistics Pragmatics Phonology			

Evaluation Tool	Results			Results Data Supports Concern		
					Yes	No
Cognitive Profile from XBA *Report confidence intervals	Broad/Narrow Ability	Conf. Int.*	Strength	Weakness		
Tests Used:	Gc					
	Gsm					
	Ga					
	Glr					
	Gs					
	Gf					
	Gv					
Language Samples: Conversational Narrative	MLU-M Analysis of Maz Type Token Rat Error Analysis_	zes tio: # wds	_ # differe	ent wds		
If all of the measures reported above has been identified in the cognitive a Learning Disability is present. If then assessment by administering addition data.	nd/or achievemen re is any disagree	nt profile, the ment within	en a more the data li	global languag sted above, cor	e-based Sp ntinue the	ecific

Evaluation Tool	Results	Data Supports Concern	
		Yes	No
Additional Formal Measures:			
Additional Informal Measures:			
Reco	ommendations to the ARD committee		
Stage I: Presence of a Language Disorder			
Stage II: Academic Implications of the Disorder			
If yes to Stage I and II, then answer Stage III: Is specially designed instruction by an SLP needed to help the student make progress in the general education curriculum?			