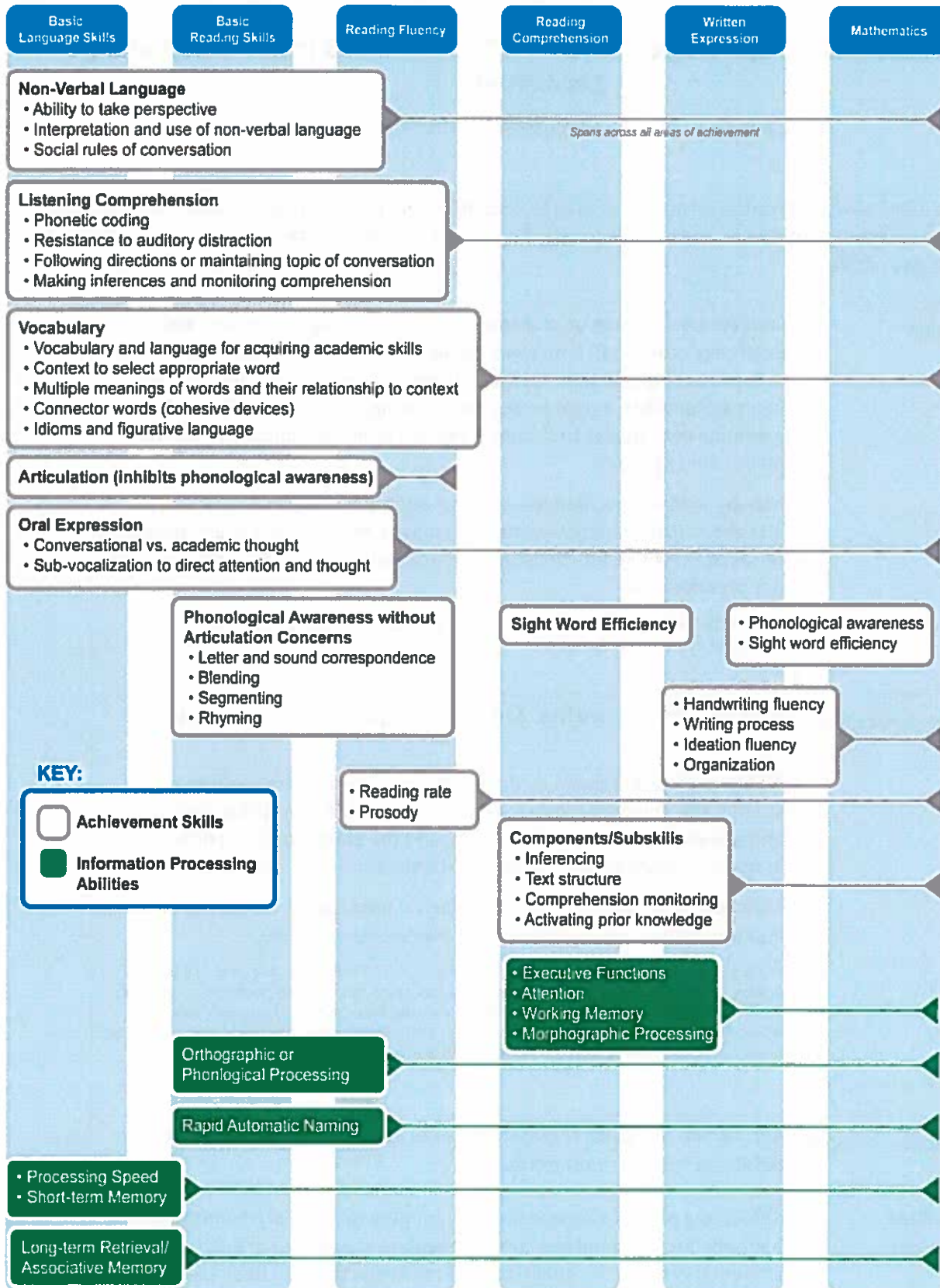


Patterns in Achievement with Basic Psychological Processes



Specific Learning Disabilities Glossary of Basic Psychological Processing Terms

Glossary of Basic Psychological Processes Terms Related to Specific Learning Disabilities

(Also Known As Cognitive Processes or Information Processes)

Note: Definitions have assimilated terms from multiple disciplines and fields of research and translated into practical terms. Where definitions attributable to specific authors have been retained, we have provided citations to give credit.

Attention	<p>Involves the focusing on and response to something (either internal or externally provoked). It involves regulation of arousal and sustained focus in the face of distraction, such as filtering out distractions, maintaining focus to complete a task, as well as inhibition and control of behavior. Attention also applies to shifting flexibility to include additional points of focus when relevant.</p> <p>May be further specified as: selective attention, sustained attention, attention span. Sometimes attention maybe referred to in more general terms of executive functions. Attention is part of executive functions, but not synonymous.</p> <p>The definition was adapted from Dehn, M. (2006). <i>Essentials of processing assessment</i>. Hoboken, New Jersey: John Wiley & Sons, Inc.</p>
Auditory processing	<p>Ability to perceive, analyze, and synthesize patterns among auditory stimuli.</p> <p>Ability to process sounds, as in identifying, isolating, and analyzing sounds; the ability to process speech sounds, as in identifying, isolating, and blending or synthesizing sounds; and the ability to detect differences in speech sounds under conditions of little distraction or distortion.</p> <p>May be further specified as: phonological processing and resistance to auditory distraction, central auditor processing disorder.</p> <p>The definition was adapted from: Flanagan, D. P., Ortiz, S. O., Alfonso, V. C. & Mascolo. (2002). <i>The Achievement Test Desk Reference: Comprehensive Assessment and Learning Disabilities</i>. Boston: Allyn & Bacon. Flanagan, D. P., & Ortiz, S. O. (2001). <i>Essentials of the cross battery approach</i>. New York: Wiley.. Flanagan, D. P., McGrew, K.S. & Ortiz, S. O. (2000). <i>The Weschler intelligence scale s and Gf-Gc theory: A contemporary approach to interpretation</i>. Boston: Allyn & Bacon.</p>
Associative memory	<p>Storing and retrieving representations in long-term memory. See also definition for long-term retrieval</p>
Crystallized intelligence	<p>Refers 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. It includes general</p>

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	<p>language development or the understanding of words, sentences, and paragraphs (not requiring reading) in spoken native language, the extent of vocabulary that can be understood in terms of correct word meanings, the ability to listen to and comprehend oral communication, the range of general concepts, and the range of cultural knowledge (e.g., music, art).</p> <p>Crystalized intelligence scores with normative scores in other areas of processing may be corroboration for lack of access to appropriate instruction or lack of depth in English language and culture.</p> <p>The definition was adapted from: Flanagan, D. P., Ortiz, S. O., Alfonso, V. C. & Mascolo .(2002). <i>The Achievement Test Desk Reference: Comprehensive Assessment and Learning Disabilities</i>. Boston: Allyn & Bacon.. Flanagan, D. P., & Ortiz, S. O. (2001). <i>Essentials of the cross battery approach</i>. New York: Wiley.. Flanagan, D. P., McGrew, K.S. & Ortiz, S. O. (2000). <i>The Weschler intelligence scale s and Gf-Gc theory: A contemporary approach to interpretation</i>. Boston: Allyn & Bacon.</p>
Dyslexia	<p>The term is used often with children who have difficulty decoding and spelling and refers to specific reading-related learning disabilities. It is also listed in the definition, both federal and Minnesota Rule 3525.1341, of specific learning disability. Adversely impacted achievement tends to primarily be confined to spelling and decoding. Issues with comprehension and reading fluency are likely secondary indicators that are more likely the result of lack of practice and vocabulary development.</p> <p>May be further specified as: surface, deep, or symantic dyslexia Additionally it may be referred to in more general terms as a reading disorder.</p> <p>Definition provided by the Upper-Midwest Branch of the International Dyslexia Association (UMBIDA).</p>
Developmental Aphasia	<p>The National Institute on Deafness and Other Communication Disorders (2002) at the National Institutes of Health describes aphasia as “a language disorder that results from damage to portions of the brain that are responsible for language.”</p>
Dyscalculia	<p>The less frequently used term commonly associated with math related learning disabilities.</p> <p>May be further specified as: verbal, procedural, semantic, or visual spatial dyscalculia. It may also be termed a math disorder. If a student has brain injury or lost math abilities the term may be “acalculia.”</p> <p>The definition was adapted from Feifer, S. and De Fina, P. (2005). <i>The neuropsychology of mathematics: Diagnosis and intervention</i>. School Neuropsych Press.</p>
Dysgraphia	<p>The less frequently used term commonly associated with a related to written expression. Writing difficulties may present in various ways and if an external evaluator diagnoses a student with a disorder in written expression one of the following categories may be used to classify the difficulty. Language based and non language based. A language based disorder in written expression is likely to first present in oral language and reading comprehension. There may be deficits in word knowledge,</p>

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	<p>semantic and associative memory, as well as weaknesses in phonological and orthographic processing. Non-language based disorders in written expression are more likely associated with motor-control and visual-spatial deficits. These likely manifest in poor handwriting, poor copying and transcription, and poor spelling not due to language base deficits. Weakness in composition and ideation are more likely attributable to issues with attention, working-memory, simultaneous processing, and sequential processing.</p> <p>The definition was adapted from Feifer, S. and De Fina, P. (2002). <i>The neuropsychology of written language disorders: Diagnosis and intervention</i> School Neuropsych Press Inc.</p>
<p>Executive functioning</p>	<p>The ability to self-direct, control, allocate, and monitor cognitive processing. It includes setting goals, planning, self-monitoring, self-regulating, solving problems, self-evaluating, and adjusting. Deciding to adjust how one approaches a difficult reading task, self-correction of decoding errors while simultaneously maintaining awareness comprehension would be an example of executive functions. Executive functions are responsible for the planning and implementation of complex tasks. These abilities are essential to virtually all areas of academic performance. They are most commonly impacted in students with ADHD.</p> <p>The definition was adapted from The following information was adapted from Korkman, M., Kirk, U., & Kemp, S. (1998). <i>The NEPSY Manuel</i>. The Psych Corporation</p>
<p>Fluid reasoning</p>	<p>Ability to use and engage in various mental operations when faced with a relatively novel task that cannot be performed automatically. It includes the ability to generate a rule based on examples and vise-versa. Additionally the ability to start with stated rules, premises, or conditions, and engage in one or more steps to reach a solution to a problem. It also affects the ability to generalize and transfer learning to new and novel situations.</p> <p>The definition was adapted from: Flanagan, D. P., Ortiz, S. O., Alfonso, V. C. & Mascolo (2002). <i>The Achievement Test Desk Reference: Comprehensive Assessment and Learning Disabilities</i>. Boston: Allyn & Bacon.. Flanagan, D. P., & Ortiz, S. O. (2001). <i>Essentials of the cross battery approach</i>. New York: Wiley.. Flanagan, D. P., McGrew, K.S. & Ortiz, S. O. (2000). <i>The Weschler intelligence scale s and Gf-Gc theory: A contemporary approach to interpretation</i>. Boston: Allyn & Bacon.</p>
<p>Language Functions</p>	<p>Language functions include phonological processing, receptive language comprehension, understanding of the syntactic structure of language, automaticity with which semantic memory can be accessed (naming), and ease and facility of language production. Cognitive processing deficits in this area may be related to difficulty recognizing phonological segments of words, difficulty in decoding, difficulty in word find or naming (accessing semantic memory automatically), and language comprehension. All academic areas would be affected by weaknesses in language functions including the 8 area of achievement in the SLD criteria (basic reading skills, reading comprehension, written expression, listening comprehension, oral expression, and math problem solving).</p>

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	<p>May be further specified as: expressive, receptive, and comprehension of language</p> <p>The definition was adapted slightly from Korkman, M., Kirk, U., & Kemp, S. (1998). <i>The NEPSY Manuel</i>. The Psych Corporation</p>
Long-term Retrieval	<p>Ability to recall as many unrelated items as possible in any order after a large collection of items is presented; and the ability to recall a set of items where there is a meaningful relationship between items or the items create a meaningful connected discourse.</p> <p>May be further specified as: associative memory</p> <p>The definition was adapted from: Flanagan, D. P., Ortiz, S. O., Alfonso, V. C. & Mascolo (2002). <i>The Achievement Test Desk Reference: Comprehensive Assessment and Learning Disabilities</i>. Boston: Allyn & Bacon.. Flanagan, D. P., & Ortiz, S. O. (2001). <i>Essentials of the cross battery approach</i>. New York: Wiley.. Flanagan, D. P., McGrew, K.S. & Ortiz, S. O. (2000). <i>The Weschler intelligence scale s and Gf-Gc theory: A contemporary approach to interpretation</i>. Boston: Allyn & Bacon.</p>
Morphology	<p>Refers to the meaningful units of language. It allows for the processing of parts of words as chunks that carry meaning such as roots, prefixes, and suffixes. It is required but not sufficient to select the appropriate meaning given a word with multiple meanings. It also can convey tense, part of speech, etc. Phonology and orthography are precursors to morphology and required to make continued progress in developing reading skills when phonological awareness and orthography have been mastered. Early language delays that were resolved with phonological interventions or speech and language services may re-emerge in later years due to lack of proficiency with morphology</p> <p>May also be referred to as: morphological processing</p> <p>Definition derived from: Berninger , V. and Richards, T. (2002). <i>Brain literacy for educators</i>. Academic Press. San Diego, CA. and Wallach, G. P. (2007). <i>Language Intervention for School-Age Students: Setting Goals for Academic Success</i>. Mosby Elsevier Health Sciences.</p>
Motor skills disorder	<p>The lack of motor coordination, not due to general medical conditions, that results in poor achievement. Examples include poor handwriting and sports as well as “clumsiness”.</p>
Oral-motor production processing	<p>The coordination of language to speech in the mouth. Students with oral-motor production difficulties may have difficulty reading with fluency, yet have no impact on reading achievement. The ability to articulate words fluently should be ruled out if reading fluency is a concern.</p>
Orthography	<p>Refers to the system of marks that make up printed words. The ability to recognize and reconstruct spelling patterns quickly and accurately represent orthographic processing. Students may have good phonemic awareness skills (manipulation of sounds and symbols), yet lack the requisite orthographic processing abilities to spell and read quickly and</p>

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	<p>accurately.</p> <p>May also be referred to as: orthographic processing</p>
Phonological awareness	<p>Refers to a broader ability that encompasses all aspects of mastering the sounds and structure of spoken language. Phonological awareness develops from identifying phonemes to the sounds within a syllable and word level. Phonological awareness develops from rhyming; identifying syllables (heard); deleting parts of words; blending and segmenting syllables; to blending/segmenting and manipulating phonemes.</p> <p>The definition was adapted from: Wagner, R.K., Torgesen, J.K., & Rashotte, C.A. (1999). <i>Comprehensive Test of Phonological Processing</i>. Austin, TX: PRO-ED; Wagner, R.K., Torgesen, J.K., & Rashotte, C.A. (1994). Development of reading-related phonological processing abilities: New evidence of bi-directional causality from a latent variable longitudinal study. <i>Developmental Psychology</i>, 30, 73-87; Wagner, R.K., & Torgesen, J.K. (1987). The nature of phonological processing and its causal role in the acquisition of reading skills. <i>Psychological Bulletin</i>, 101, 192-212.</p>
Phonological core deficits	<p>Entail difficulties making use of phonological information when processing written or oral language.</p> <p>Major components: phonemic awareness (one’s understanding of and access to the sound structure of language), sound-symbol relationships, and storage and retrieval of phonological information in memory.</p>
Phonological memory	<p>Refers to coding information phonologically for temporary storage in working memory. A deficient phonological memory does not appear to impair either reading or listening to a noticeable extent, provided the words involved are already in the individual’s vocabulary. However, phonological memory impairments can constrain the ability to learn new written or spoken vocabulary.</p> <p>The definition was adapted from: Wagner, R.K., Torgesen, J.K., & Rashotte, C.A. (1999). <i>Comprehensive Test of Phonological Processing</i>. Austin, TX: PRO-ED; Wagner, R.K., Torgesen, J.K., & Rashotte, C.A. (1994). Development of reading-related phonological processing abilities: New evidence of bi-directional causality from a latent variable longitudinal study. <i>Developmental Psychology</i>, 30, 73-87; Wagner, R.K., & Torgesen, J.K. (1987). The nature of phonological processing and its causal role in the acquisition of reading skills. <i>Psychological Bulletin</i>, 101, 192-212.</p>
Processing speed	<p>The ability to perform cognitive tasks fluently and automatically, especially when under pressure to maintain focused attention and concentration. It includes the ability to search for and compare visual symbols rapidly, when presented side-by-side or separated in a visual field; the ability to perform tests that are relatively easy or that require very simple decisions rapidly; and the ability to manipulate and deal with numbers rapidly and accurately.</p> <p>The definition was adapted from: Flanagan, D. P., Ortiz, S. O., Alfonso, V. C. & Mascolo (2002). <i>The Achievement Test Desk Reference: Comprehensive Assessment and Learning Disabilities</i>. Boston: Allyn & Bacon. Flanagan, D. P., & Ortiz, S. O. (2001). <i>Essentials of the cross battery approach</i>. New York: Wiley. Flanagan, D. P., McGrew, K.S. & Ortiz, S. O. (2000). <i>The Wechsler intelligence scale s and Gf-Gc theory: A contemporary approach to interpretation</i>. Boston: Allyn & Bacon.</p>

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<p>Rapid naming</p>	<p>Refers to objects, colors, digits, or letters. Requires efficient retrieval of phonological information from long-term memory. The efficiency with which individuals are able to retrieve phonological codes associated with individual phonemes, word segments, or entire words should influence the degree to which phonological information is useful in decoding printed words. Measures of rapid naming require speed and processing of visual as well as phonological information. The skills involved include efficient retrieval of phonological information from long-term memory and executing a sequence of operations quickly and repeatedly.</p> <p>The definition was adapted from: Wagner, R.K., Torgesen, J.K., & Rashotte, C.A. (1999). <i>Comprehensive Test of Phonological Processing</i>. Austin, TX: PRO-ED; Wagner, R.K., Torgesen, J.K., & Rashotte, C.A. (1994). Development of reading-related phonological processing abilities: New evidence of bi-directional causality from a latent variable longitudinal study. <i>Developmental Psychology</i>, 30, 73-87; Wagner, R.K., & Torgesen, J.K. (1987). The nature of phonological processing and its causal role in the acquisition of reading skills. <i>Psychological Bulletin</i>, 101, 192-212.</p>
<p>Short-term memory</p>	<p>The ability to acquire and hold information in immediate awareness and then use it within a few seconds.</p> <p>The definition was adapted from: Flanagan, D. P., Ortiz, S. O., Alfonso, V. C. & Mascolo (2002). <i>The Achievement Test Desk Reference: Comprehensive Assessment and Learning Disabilities</i>. Boston: Allyn & Bacon.. Flanagan, D. P., & Ortiz, S. O. (2001). <i>Essentials of the cross battery approach</i>. New York: Wiley.. Flanagan, D. P., McGrew, K.S. & Ortiz, S. O. (2000). <i>The Weschler intelligence scale s and Gf-Gc theory: A contemporary approach to interpretation</i>. Boston: Allyn & Bacon.</p>
<p>Simultaneous processing</p>	<p>Refers to connecting separate information into a whole, such as, integrate ideas into a coherent idea. Some researchers argue that simultaneous processing may be operationalized to measure working-memory and visual-spatial dimensions.</p> <p>The definition was adapted from: Flanagan, D.P., and Alfonso, V.C. (2011) <i>Essentials of Specific Learning Disability Identification</i>. Hoboken, New Jersey, John Wiley & Sons.</p>
<p>Successive Processing</p>	<p>Refers to the processing of information a sequence or specific order. When information is automatic successive processing may be unconscious, when it is effortful it requires working memory. Examples of successive processing include speaking, decoding, and following directions. The concept of successive processing comes from Luria and is part of the Planning, Attention, Simultaneous, and Successive (PASS) Processing theory. Some researchers argue that successive processing may be operationalized to measure short-term memory.</p> <p>The definition was adapted from: Flanagan, D.P., and Alfonso, V.C. (2011) <i>Essentials of Specific Learning Disability Identification</i>. Hoboken, New Jersey, John Wiley & Sons.</p>
<p>Visual processing</p>	<p>An individual's ability to think about visual patterns and visual stimuli. This also refers to orienting in space, such as using the margins, writing in a column, map reading, as well as understanding geometry.</p> <p>The definition was adapted from: Flanagan, D. P., Ortiz, S. O., Alfonso, V. C. & Mascolo (2002). <i>The Achievement Test Desk Reference: Comprehensive Assessment and Learning Disabilities</i>. Boston: Allyn</p>

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<p>Working memory</p>	<p>Ability to store information temporarily while simultaneously attending to another task. It can also be attending to and immediately recalling elements in corrected order after a single presentation, as well as the ability to store temporarily and perform a set of mental manipulations on information that requires divided attention.</p> <p>Relates to an individual’s ability to attend to verbally- or visually-presented information, to hold the information in mind, and then to formulate a response. Difficulties with working memory may make the processing of multiple layers or complex information more time-consuming, draining a student’s mental energies more quickly and perhaps result in more frequent errors on a variety of tasks.</p> <p>The definition was adapted from: Flanagan, D. P., Ortiz, S. O., Alfonso, V. C. & Mascolo (2002). <i>The Achievement Test Desk Reference: Comprehensive Assessment and Learning Disabilities</i>. Boston: Allyn & Bacon.. Flanagan, D. P., & Ortiz, S. O. (2001). <i>Essentials of the cross battery approach</i>. New York: Wiley.. Flanagan, D. P., McGrew, K.S. & Ortiz, S. O. (2000). <i>The Weschler intelligence scale s and Gf-Gc theory: A contemporary approach to interpretation</i>. Boston: Allyn & Bacon.</p>

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