Detecting a Pattern of Strengths and Weaknesses Using the PASS Theory as Measured by CAS2

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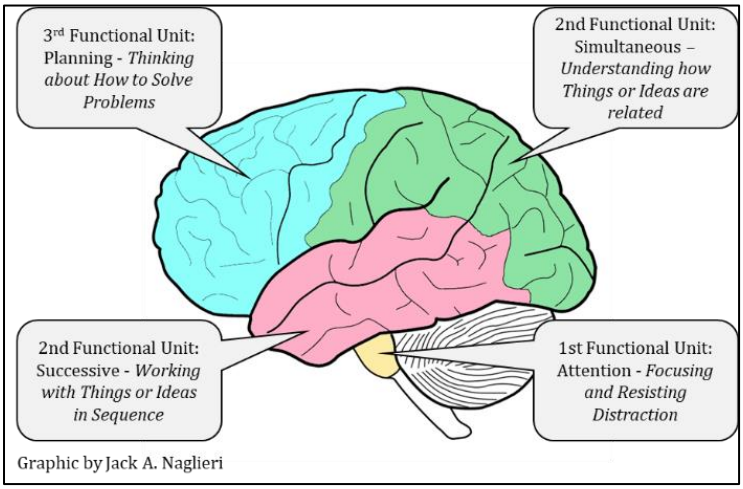
PASS Theory and its Measurement

Naglieri and Das (1997) proposed that A. R. Luria's (1973) description of the three functional units of the brain could be used to redefine intelligence from a neurocognitive perspective. Luria described four basic psychological processes which were first referred to as the Planning, Attention, Simultaneous, and Successive (PASS) theory by Das, Naglieri and Kirby in 1994. Naglieri and Otero (2017) provided the most recent comprehensive discussion of this new way to conceptualize and measure neurocognitive abilities, its validity, use and measurement. They presented extensive evidence which shows that the PASS neurocognitive theory offers many advantages over traditional IQ. This workbook was designed to show how PASS theory can be used to evaluate children and adolescents who may have learning strengths and/or weaknesses that may qualify as a specific learning disability (SLD).

PASS Processes Defined



One strength of the PASS theory is that the four neurocognitive processes are not hard to explain, so easy in fact that Naglieri and Pickering (2010) provided handouts for student and parents in English and Spanish which explain the four processes. In simplest terms, PASS can be defined as follows:

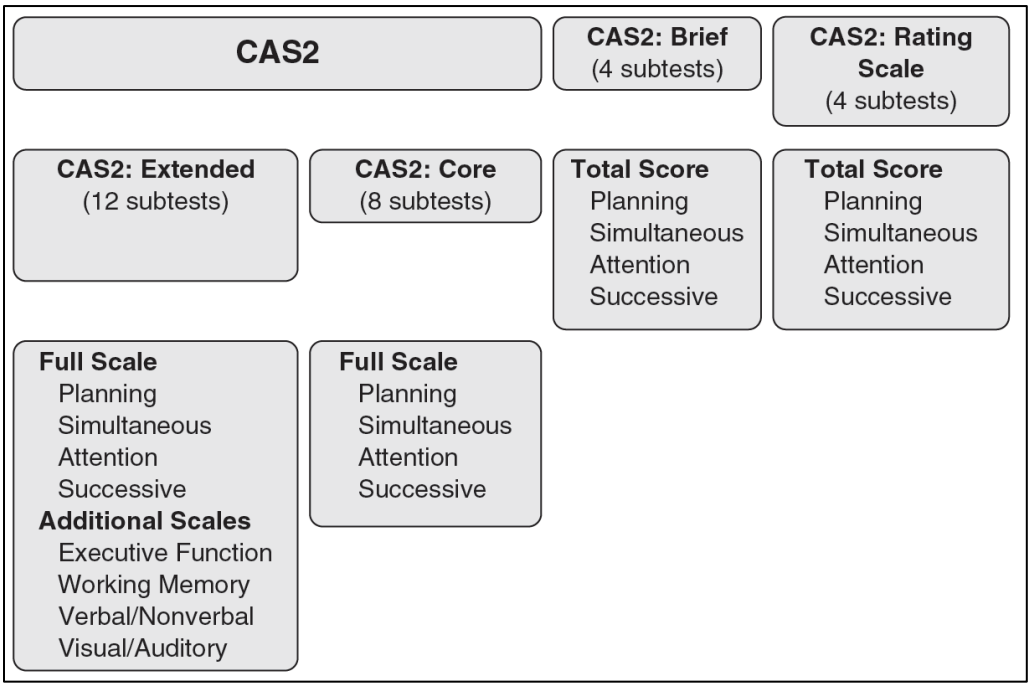
- Planning is thinking about how to do things.
- Attention is focusing one's thinking while resisting distractions.
- Simultaneous is thinking about how things go together to make a whole.
- Successive is thinking in a sequence.

According to Naglieri and Otero (2017) PASS processes can be seen in the classroom:

- *Planning:* look to see if students are good at making decisions about *how* to solve *any* kind of a problem from academics to social situations and life in general.
- *Attention:* notice which students can focus despite distractions in the class and maintain effort over time despite continued noises.
- *Simultaneous:* those students who like to draw designs, especially three-dimensional ones, are good at patterns and complex shapes, understanding grammar, verbal concepts, getting the big-picture are good in this process.
- *Successive:* observe which students are good at sequencing of sounds and movements, as well as reading decoding, spelling, speech articulation, remembering things in order and the association of the sounds with letters.

Measurement of PASS Neurocognitive Processes

PASS neurocognitive abilities can be measured by professionals of varying background using one or more of several measures. These include the Cognitive Assessment System – Second Edition (CAS2; Naglieri, Das & Goldstein, 2014) and CAS2: Español (Naglieri, Moreno & Otero, 2017) (both used by school psychologists or similar professionals), the CAS2: Brief (for diagnosticians and educational therapists with assessment training), and the CAS2: Rating Scale (all of those noted above and for teachers). These tests provide several ways to evaluate PASS processes. For additional information on the use, reliability, validity, and intervention options for the scores these measures yield see Naglieri and Otero's (2017) book *Essentials of CAS2 Assessment.*



Interpretation of the CAS2, CAS2: Brief and CAS2: Rating Scale

Interpretation of the CAS2, CAS2: Brief, and the CAS2: Rating Scale begins with an examination of the four PASS scales. Strengths and weaknesses in PASS are found when any of the four scores differ significantly from the *examinee's average* of the four PASS scores. This tells us if the student's pattern of strengths and weaknesses in neurocognitive processes is reliable. Knowing if a student's PASS scores differ significantly is important because such variability has *implications for teaching and learning*.

To determine if differences in PASS scores have *diagnostic implications* a second rule is needed. That is, a PASS score that is significantly lower than the person's average *must also fall below the national average* (at least below a standard score of 90) to be considered evidence of a 'disorder in one or more of the basic psychological processes' for

SLD eligibility determination. Below 85 provides a more stringent rule. The following example provides the steps for analysis of the PASS standard scores:

CAS2 Scoring Example

1. Compute the average of the PASS standard scores;
2. Subtract each PASS score from the average to get the differences between each score and the child's average. Some of the values will be positive and others negative.
3. Compare differences (ignore the sign) to the values in table 3.3 from *Essentials of CAS2 Assessment* (Naglieri & Otero, 2017) for the version of the CAS2 used, the age of the student and the *p* value (.05 or .10). If the value is equal to or greater than the value in Table 3.3, then the difference is significant.

Table 3.3 Differences Between PASS Scale Standard Scores and the Student's Average PASS Score Required for Significance for the CAS2 Extended and Core Batteries, CAS2: Brief, and CAS2: Rating Scales

Scale	Age	*p*	Planning	Simultaneous	Attention	Successive
CAS2 Extended	5–7	.05	9.5	9.3	8.0	9.4
		.10	8.5	8.3	7.2	8.4
	8–18	.05	9.3	8.3	9.5	9.1
		.10	8.4	7.4	8.6	8.2
CAS2 Core	5–7	.05	11.2	10.1	9.0	10.7
		.10	10.1	9.0	8.1	9.6
	8–18	.05	10.2	9.1	10.9	10.4
		.10	9.2	8.1	9.8	9.3

4. Any scores that are significantly different from the mean AND fall either above or below the Average range (90 to 110) as Strength or Weakness, respectively.

This example provides a step by step illustration for a student aged 7 using the CAS2 Extended Battery in which the Planning score of 84 is significantly lower than the student's average PASS score of 95.8 and that score falls below the average range (less than 25th percentile rank). This weakness is low (a) for this individual and (b) in relation to the normative mean of 100. Similarly, the Simultaneous score is interpreted as a strength because it is significantly above the student's average and above the Average range (84th percentile rank). This profile is often found for individuals who have been diagnoses with ADHD (Naglieri & Otero, 2012) because they lack control of their behavior and thinking.

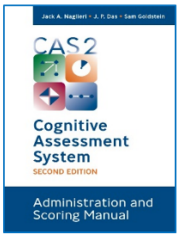
An excel file entitled "CAS2, CAS2 Brief, CAS2 Rating Scale Analyzers" is available under the tab labeled "PASS Score Analyzers" on the web site www.jacknaglieri.com. This free spreadsheet computes the average PASS score, compares each PASS score to the average, determines which differences are significant and determines strengths or weaknesses

Differences Between PASS Scale Standard Scores and the Student's Average PASS Score Required for Significance for the CAS2 12-Subtest EXTENDED battery AGES 5-7 Years.

Ages 5-7 YEARS

Cognitive Assessment System-2		Difference from PASS Mean of:	Significantly Different (at p < .05) from PASS Mean?	Strength or Weakness	
PASS Scales	Standard Score	95.8			
Planning	84	-11.8	yes		Weakness
Simultaneous	112	16.3	yes	Strength	
Attention	88	-7.8	no		
Successive	99	3.3	no		

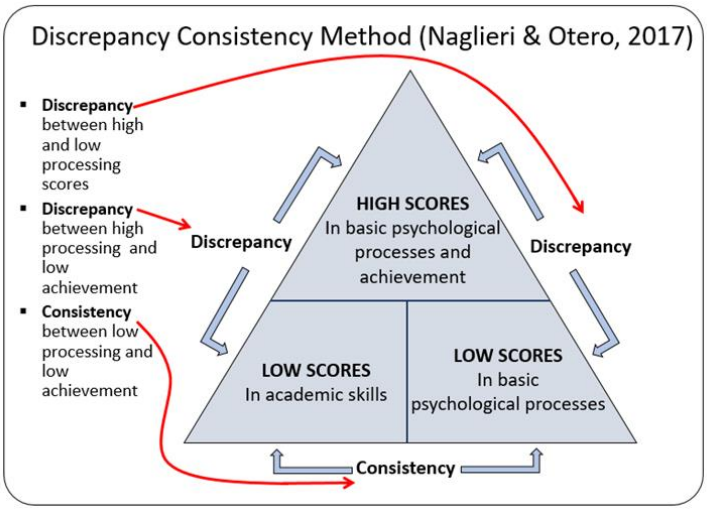
Note: Strengths and weaknesses are based on having a low PASS score (ipsative comparison at the .05 level of significance) *and* PASS scores that are below 90 (25th percentile).



Interventions for a student such as the one described in Example 1 should focus on using the Simultaneous strength; that is, teach the student that learning is most efficient when the big picture is clear. In addition, encourage the use of Planning processing by helping the student to stop and think of a plan. Use handouts from Naglieri and Pickering (2010) that encourage manipulatives such as Cuisenaire Rods (pg. 114-115) for math and Summarization Strategy (p. 83) for reading comprehension because these rely on Simultaneous processing. To encourage the use of planning processing, the Planning Facilitation (pg. 111-112) method for math and Plans for Reading Comprehension (pg. 85) are good resources. The ultimate goal is to help the student use plans more frequently and to develop a repertoire of strategies that can be skillfully applied whenever needed.

SLD Eligibility Determination

When analysis of PASS scores indicates that there is significant variability *and* the weakness is less than 90, the PASS scores should be compared to achievement, using the Discrepancy Consistency Method first described by Naglieri (1999). This approach provides a simple way to describe of the pattern of PASS *and* academic strengths and weaknesses and establish evidence of a specific learning disability according to IDEA (see Figure).



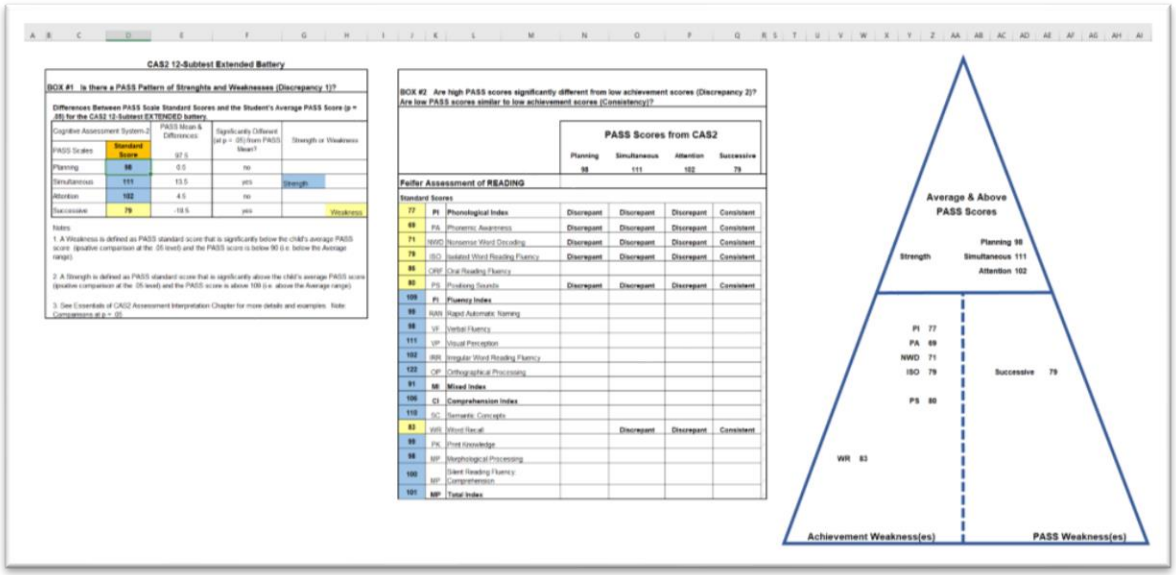
- The discrepancy on the left side of the triangle is a traditional ability achievement discrepancy – high ability scores versus low achievement test scores.

- The discrepancy on the right side of the triangle provides evidence that not all of the cognitive processing scores are equal, and in fact, there is a weakness in one that is low enough to be considered a disorder in basic psychological processing.
- The consistency between poor academic and poor processing scores at the base of the triangle provides the answer to the question "***Why does the student fail*?**"

The pattern of strengths and weaknesses across specific measures of academic skills and basic psychological processes can provide compelling evidence for SLD eligibility determination for different disorders. When used with a thorough analysis of reading skills, for example, the Discrepancy Consistency Method can help identify several different subtypes of Dyslexia as described by Naglieri and Feifer (2018). See Naglieri & Otero (2917) for more details.

A *free* excel file entitled "*CAS2, FAR and FAM PSW Analyzer*" that does the analysis of the PASS and achievement test scores is available under the tab labeled "PASS Score Analyzers" on the web site www.jacknaglieri.com. This file is used to determine (a) if there is significant variability in PASS scores (Discrepancy #1), if the high PASS scores are significantly different from the achievement scores from the Feifer Assessment of Reading (FAR) or the Feifer Assessment of Math (FAM) (Discrepancy #2), and if the low PASS score (that is, the score that represents a 'disorder in basic psychological processes' described in IDEA and State definitions of a Specific Learning Disability) is similar to the low achievement scores from the FAR and FAM (Consistency).

The figure below illustrates how the PASS and FAR standard scores are analyzed and rendered in the triangle on the right.



PASS Variability on the CAS2: Brief and CAS2: Rating Scale

Determining if PASS scores show a pattern of strengths and weaknesses in processing that may have instructional implications can be accomplished using the same approach as used for the CAS2.

1. Compute the average of the PASS standard scores;
2. Subtract each PASS score from the average to get the differences between each score and the child's average. Some values will be positive and others negative.
3. Compare differences (ignore the sign) to the values in table 3.3. If the value is equal to or greater than the value, then the difference is significant.
4. Any scores that are significantly different from the mean should be interpreted as having instructional implications.

Table 3.3 Differences Between PASS Scale Standard Scores and the Student's Average PASS Score Required for Significance for the CAS2 Extended and Core Batteries, CAS2: Brief, and CAS2: Rating Scales

Scale	Age	*p*	Planning	Simultaneous	Attention	Successive
CAS2: Brief	4–7	.05	9.9	11.5	9.4	12.0
		.10	8.9	10.3	8.5	10.8
	5–18	.05	9.1	10.8	11.3	11.8
		.10	8.2	9.7	10.1	10.6
CAS2: Rating Scale	5–7	.05	9.9	11.5	9.4	12.0
		.10	8.9	10.3	8.5	10.8
	8–18	.05	9.1	10.8	11.3	11.8
		.10	8.2	9.7	10.1	10.6

Example #1: Differences Between PASS Standard Scores and the Student's Average PASS Score Required for Significance for the **CAS2 BRIEF AGES 5-7 Years.**

	Cognitive Assessment System - 2		Difference from PASS Mean of:	Significantly Different (at $p < .05$) from PASS Mean?	Strength or Weakness
	PASS Scales	Score			
Ages 5-7 YEARS	Planning	**103**			
	Simultaneous	**112**			
	Attention	**96**			
	Successive	**79**			

Example #2: Differences Between PASS Standard Scores and the Student's Average PASS Score Required for Significance for the **CAS2 RATING SCALE AGES 5-7 Years.**

	Cognitive Assessment System - 2		Difference from PASS Mean of:	Significantly Different (at $p < .05$) from PASS Mean?	Strength or Weakness
	PASS Scales	Score			
Ages 5-7 YEARS	Planning	**100**			
	Simultaneous	**109**			
	Attention	**98**			
	Successive	**81**			

Case #1 – Paul PASs (Feifer)

Paul is currently 9-years of age and in 4th grade and is having problems in reading and mathematics. He struggles to remember the sequence of steps when doing math equations, basic math facts, and long passages when reading, when decoding words, and spelling hard words. What remained puzzling is that Paul had an outstanding memory for details and excelled when remembering specific aspects of a field trip or any type of experiential learning experience.

Paul's CAS-2 Full Scale score of 92 was in the Average range, and at the 27th percentile compared to peers (see Table 8). Most of his PASS scores are in the Average range, with the exception of his Successive processing, which was a weakness. Lower scores on this scale reflects his difficulty working with any kind of information or task that demands sequencing. It is important to note that difficulties with Successive processing can hinder both verbal information (i.e. remember multiple step directions) or non-verbal information (i.e. remembering longer algorithms or steps when engaged in more complex mathematics) as well as reading decoding and spelling.

Paul earned a Planning scale score of 92 which reflects his ability to use strategies when solving problems, check to see if the strategies are effective, modify or change solutions when needed, and efficiently complete tasks. The Planning score is within the average classification and is a percentile rank of 30. This indicates that Paul did as well as or better than 30% of children his age in the standardization group. There is a 90% probability that Paul's true Planning score is within the range of 87 to 98.

Paul's Simultaneous score measures his ability to work with information that is organized into groups and form a cohesive whole. This scale also requires an understanding of how shapes as well as words and verbal concepts are interrelated. Paul earned a Simultaneous scale score of 110, which means that he did as well as or better than 75% of the children in the standardization group. There is a 90% probability that Paul's true Simultaneous score is within the range of 104 to 115.

Paul's Successive score reflects his ability to repeat information, such as words or sentences, in order and an understanding of verbal statements when the meaning was dependent on the sequence of the words. He earned a Successive scale score of 75, which is considerably below average and is a percentile rank of 5. This means that Paul only did as well as or better than 5% of the sample his age in the standardization group. There is a 90% probability that Paul's true Successive score is within the range of 71 to 82.

Testing with the Feifer Assessment of Math (FAM: Feifer, 2017) revealed significantly low scores on the Procedural Index, which involves a collection of sequence-based skills such as skip counting forward and backward from various points on a number line, as well as recognizing patterns and sequences among number relationships. His overall FAM Total Index score was 86, which was in the Below Average range and at the 18th percentile compared to peers. Paul's core deficit with Successive processing influences mathematics in both a symbolic fashion (i.e. difficulty identifying number patters) as well as a conceptual fashion (i.e. difficulty remembering the sequences of steps needed to

solve more complex equations). In addition, Paul also struggled on the Verbal Index, which is a measure of automatic or reflexive problem solving of single digit math facts. He had difficulty retrieving basic math facts when timed, though his conceptual understanding of mathematics was sound (Semantic Index).

Paul's Scores on the Feifer Assessment of Math

FAM Index	Standard Scores	Percentiles	Category
Procedural Index	76	5	Moderately Below Average
Verbal Index	82	12	Below Average
Semantic Index	98	45	Average
FAM TOTAL INDEX	86	18	Below Average

Paul also obtained a Feifer Assessment of Reading (FAR) Total Index score of 84 ±4, which is in the Below Average range of functioning and at the 14th percentile compared to peers (see Table xx). He especially had difficulty within the Phonological Index, which required use of successive processing to sequence individual sounds or phonemes in order to identify words. His strategy was to rely on his stronger Simultaneous processing, as evidence by his good performance on the Fluency Index and on the CAS2. For example, Paul performed well on a task that required him to identify phonologically irregular words (i.e. yacht, debt, onion, etc...), though had considerably more difficulty identifying words that were more readily decodable. He struggled on the decodable words because of his weakness in Successive processing and he uses his strong Simultaneous processing to take in the entire printed word form, a strategy much better suited for phonologically irregular words that cannot readily be decoded. These results suggest that Paul would benefit from an explicit phonological approach to reading (i.e. Fundations, Wilson, Orton-Gillingham, etc...) that allowed him to develop more automaticity with respect to blending sounds to recognize words.

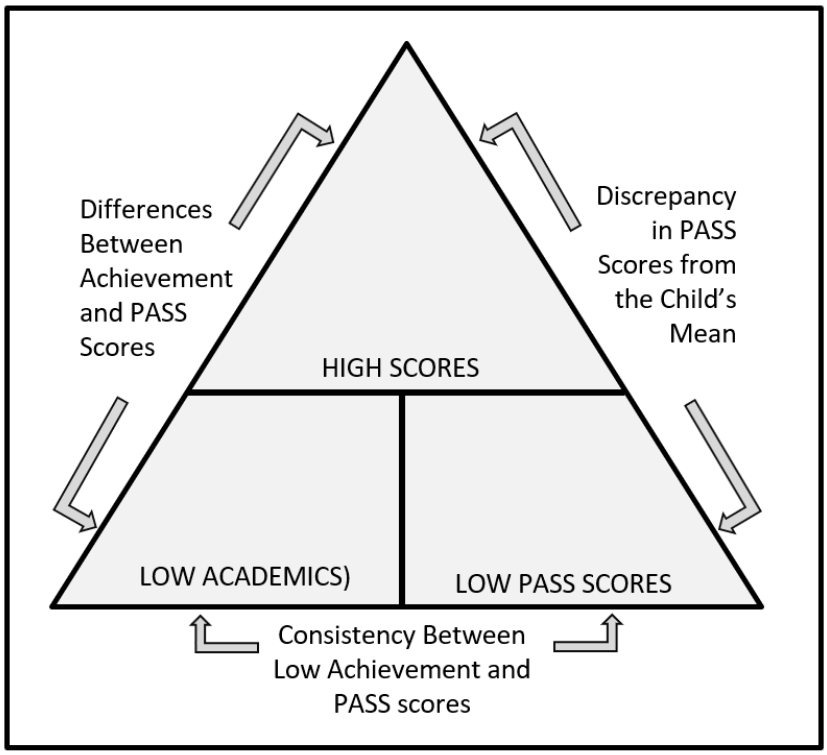
Paul's Scores on the Feifer Assessment of Reading

FAR Scores	Standard Scores	Percentiles	Category
Phonological Index	79	7	Moderately Below Average
Fluency Index	92	32	Average
Mixed Index	85	14	Below Average
Comprehension Index	90	27	Average
FAR Total Index	84	14	Below Average

Worksheet for Paul

Paul's PASS Scores from the Cognitive Assessment System – Second Edition Extended Battery Results.

Cognitive Assessment System - 2			Difference from PASS Mean of:	Significantly Different (.05) from PASS Mean?	Strength (S) or Weakness (W)
PASS Scales	Standard Score	Percentile			
Planning	92	30			
Simultaneous	110	75			
Attention	92	30			
Successive	75	5			



Case #2 – Nelson (Naglieri & Feifer, 2017) PAsS

Reason for Referral

Nelson is a 9-year-old fourth-grade student who was referred for a comprehensive psychological evaluation because of concerns regarding his overall reading skills and difficulty completing most daily tasks in a timely manner.

Background Information

Nelson has been attending East Lake Elementary School since kindergarten and began receiving targeted academic interventions in the first grade. He was having difficulty acquiring basic sound-symbol associations, and his reading fluency was measured at just 27 correct words per minute at the completion of first grade. Nelson began receiving Tier II reading support services in second grade and worked with the school's reading specialist for approximately 30 minutes each day. He responded well to his reading intervention services and completed second-grade reading about 55 words per minute accurately. Nevertheless, there were additional academic concerns on entering third grade. For instance, Nelson was described as having difficulty with spelling and written language skills, struggled with math fact retrieval skills, and was inconsistent with reading comprehending skills. There were no reported attention or behavioral concerns and his teacher indicated that Nelson often put forth a good effort each day. However, he continued to struggle keeping pace with his peers and often failed to complete his work in a timely manner. The school's child development team conveyed a meeting prior to the onset of fourth grade and recommended a comprehensive psychological evaluation.

CAS2 Extended 12-subtest Battery Results

PASS Scales	**Scaled Score**	**Percentile**	**Ability Category**
CAS2 Planning: The ability to apply a strategy and self-monitor while working toward a solution	94	34	Average
CAS2 Simultaneous Processing: The ability to integrate separate elements into a conceptual whole	74	4	Very low
CAS2 Attention: The ability to selectively focus on a stimulus and inhibit responses to competing stimuli	98	45	Average
CAS2 Successive Processing: The ability to work with information arranged in a specific sequence	90	25	Average
CAS2 Full Scale Score	89	23	Below average

Planning

Nelson's Planning processing score reflects his ability to make decisions about how best to complete the tests, use strategies, monitor the effectiveness of strategies, change the plan when needed, and work efficiently. He earned a Planning score of 94, which was in the average range of functioning and at the 34th percentile compared to peers. He approached many problem-solving tasks with a specific search strategy (e.g., worked from bottom to top or left to right) based on the demands of the task. Nelson exhibited good Planning strategies and organizational skills, worked very diligently throughout the test, and focused his attention well to the task at hand. There were no weaknesses apparent.

Attention

Nelson's Attention score reflects his ability to focus his thinking and resist distractions. He earned an Attention score of 98, which was in the Average range of functioning and at the 45th percentile compared to peers. He had little difficulty with response inhibition and was able to curb his impulses and refrain from naming or reading items when instructed to state a conflicting response instead. There were no weaknesses observed.

Simultaneous

Nelson's Simultaneous score reflects the ability to integrate separate elements into a conceptual whole and often requires strong visual-spatial problem-solving skills. His Simultaneous processing score of 74 was a significant weakness and in the very low range of functioning at the 4th percentile compared to peers. Nelson worked very slowly and deliberately on these tasks and often struggled with more difficult items. Lower Simultaneous processing can directly hinder a variety of academic skills such as spelling (difficulty conjuring up a visual spatial image of the printed word form), reading fluency and speed (difficulty automatically recognizing words as a conceptual whole), and mathematics (visualizing numbers).

Successive

Nelson's score on the Successive processing scale reflects his ability to repeat information such as words or sentences in order and understanding verbal statements when the meaning was dependent on the sequence of the words. Nelson's overall Successive score was 90, which in the average range of functioning and at the 25th percentile compared to peers. This score suggests adequate ability to remember information in order and sequencing symbols, both of which are important for academic tasks such as decoding words when reading, sounding out words when spelling, memorizing basic math facts, and math computation skills. There were no significant weaknesses observed.

Summary

Nelson demonstrated adequate general cognitive abilities, with most PASS processing scores within the average range. However, a relative weakness was noted on the

Simultaneous processing scale. Lower scores in this area can hinder mathematical problem-solving, visualizing words when spelling, and reading fluency skills.

Academic Measures

Nelson was administered the Kaufman Test of Educational Achievement, Third Edition (KTEA-III) to assess his reading, math, spelling, and written language skills. His academic achievement scores in reading were as shown in Table 5.3 (mean = 100).

Nelson's Scores on the KTEA-III Reading Subtests

Reading	Age Norms	Percentile	Range
Letter Word Recognition: The student reads isolated letters and words of gradually increasing difficulty.	81	10	Below average
Nonsense Word Decoding: The student applies phonics and decoding skills to made-up words.	90	25	Average
Reading Comprehension: The student reads a word and points to its corresponding picture responds by performing the action.	83	13	Below average
Silent Reading Fluency: The student reads as many statements as possible in 2 minutes and responds "yes" or "no" as to whether each statement is valid.	80	9	Below average
KTEA-III Reading Composite Score	81	10	Below average

Nelson's overall reading composite score was 81±6, which was in the below average range of functioning and at the 10th percentile compared to peers. He struggled with most aspects of the reading process and was very inconsistent with his overall word-identification skills (Letter Word Identification). A relative strength was Nelson's ability to apply decoding skills to unfamiliar words in print (Nonsense Word Decoding). In summary, Nelson was a slower-paced and dysfluent oral reader with inconsistent text-comprehension skills (Reading Comprehension) as well.

Nelson's overall math composite score was 90 ±6, which was in the average range of functioning and at the 25th percentile compared to peers (see Table 5.4). He demonstrated an adequate conceptual understanding of mathematics (Math Concepts and Applications) and was able to read and interpret a graph, recognize a number pattern, solve problems involving elapsed time, and make change from a dollar. However, his automaticity for basic number facts (Math Fluency) was a little slower paced, and he occasionally misread math operational signs. Last, Nelson's math-calculation skills were a bit inconsistent (Math Computation), because he was able to add

and subtract two-digit equations but often lost his place when borrowing or regrouping and was unable to solve long division or two-digit multiplication equations.

Nelson's Scores on the KTEA-III Math Subtests

Math	Age Norms	Percentile	Range
Math Concepts and Applications: The student solves applied math problems.	96 ±6	39	Average
Math Computation: The student solves math equations in the response booklet.	87 ±10	19	Below average
Math Fluency: The student solves as many math as possible problems in 60 sec	89 ±11	23	Below average
KTEA-III Math Composite Score	90 ±6	25	Average

Nelson's written language composite score was 87 ±6, which was in the below average range and at the 19th percentile compared to peers (see Table 5.5). He was right-handed with an adequate tripod grasp. Nelson worked very diligently when writing, and was extremely focused and on-task during extended writing tasks. Nevertheless, he often made careless miscues such as omitting ending punctuation, omitting articles and short words (e.g., *is, and, of,* etc.), and did not always capitalize the first words of sentence during a structured writing task (Written Expression). In addition, there were noted grammatical errors in his sentence structures, and his spelling skills were a bit inconsistent*,* though phonetically readable.

Nelson's Scores on the KTEA-III Writing Subtests

Writing	Age Norms	Percentile	Range
Written Expression: The student completes a series of writing tasks in the context of a storybook format. Tasks include writing from dictation, adding punctuation and capitalization, combining sentences, filling in the blank, and essay writing.	91	27	Average
Spelling: The student is required to spell words of increasing difficulty dictated by the examiner.	86	18	Below average
Writing Fluency: The student has 5 minutes to write as many sentences as possible describing various pictures.	88	21	Below average
KTEA-III Written Language	87	19	Below average

Academic Summary:

Nelson's overall reading and written language skills were not commensurate with grade-level expectations. He had adequate decoding skills but was a slower-paced and dysfluent oral reader with inconsistent passage comprehension skills. There were also noted spelling miscues, though his efforts were phonetically readable, and he tended to make numerous grammatical errors when writing.

Nelson was administered the Feifer Assessment of Reading (FAR), a comprehensive reading test designed to examine the underlying cognitive and linguistic processes that support proficient reading skills. See Table 5.6 for the obtained scores (mean = 100).

Nelson's Scores on the Feifer Assessment of Reading (FAR)

FAR Index	Standard Score (95% CI)	Percentile	Qualitative Descriptor
Phonological Index	90 (±5)	25	Average
Fluency Index	73 (±7)	3	Moderately below average
Mixed Index	81 (±5)	10	Below average
Comprehension Index	97 (±8)	42	Average
FAR Total Index	84 (±5)	14	Below average

FAR Total Index:

Nelson obtained a FAR total index score of 84 ±5, which is in the below average range of functioning and at the 14th percentile compared to peers. The following reading indices were obtained (mean = 100).

Phonological Index:

Nelson's Phonological Index score was 90 ±5, which was in the average range and at the 25th percentile compared to peers. His overall phonemic skills were emerging, because he was able to blend, segment, and manipulate sounds in words. Nelson also had little difficulty when applying decoding skills to familiar and unfamiliar words in print, though he worked a little slowly when reading an isolated list of decodable words.

Fluency Index:

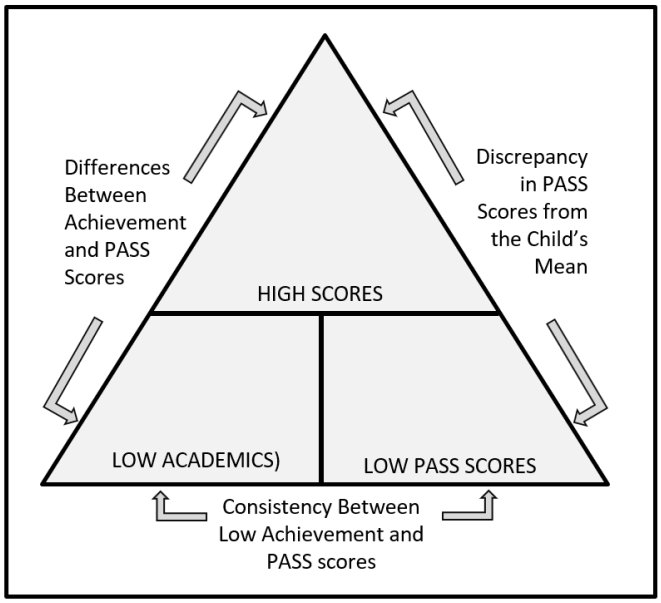
Nelson's Fluency Index was a significant weakness, because he scored 73 ±7, which was in the moderately below average range and at the 3rd percentile compared to peers. He worked slowly when rapidly identifying objects and letters, demonstrated poor text orthography skills, and had difficultly reading an isolated list of phonologically irregular words (e.g., *yacht, onion, debt,* etc.). Lower scores on rapid naming and text orthography tasks often stems from poor Simultaneous processing and an inability to visualize the entire printed word form as a unique whole. This can lead to inconsistent spelling as well as slower print-identification skills when reading.

Comprehension Index:

Nelson's Comprehension Index score was 97 ±8, which was in the average range and at the 42nd percentile compared to peers. His overall vocabulary and language-development skills were a significant strength. In addition, his verbal memory skills were also well developed, suggesting that Nelson had strong language and working memory skills to facilitate text comprehension. Last, his well-developed Planning and Attention abilities enabled him to remember specific details in the stories, though weaknesses with Simultaneous processing seemed to hinder his ability to understand the big picture and comprehend more abstract questions about the story.

FAR Summary:

Nelson's poor reading fluency skills stemmed from limitations with text orthography, which involves rapidly processing the entire printed word form. Limitations with text orthography are primarily because of poor Simultaneous processing. Weaknesses with Simultaneous processing seemed to hinder his ability to comprehend more abstract elements of the text, though his strong Planning and Attention did help facilitate remembering more detailed aspects of the story. Nelson's slower reading speed, difficulty reading phonetically irregular words, and poor Simultaneous processing was consistent with the profile of a student with surface dyslexia.



Worksheet for Nelson

Cognitive Assessment System - 2			Difference from PASS Mean of:	Significantly Different (.05) from PASS Mean?	Strength (S) or Weakness (W)
PASS Scales	Standard Score	Percentile			
Planning	94	34			
Simultaneous	74	4			
Attention	98	45			
Successive	90	25			

Case #3 Clark (from T. M. Otero) PaSS

Background

Clark is an 8-year-old second-grade male who was seen was seen in connection with an evaluation to assess his educational needs. He was recently diagnosed with ADHD by his physician and is currently taking 10 mg of Vyvanse in the mornings. Prior to being on medication he was observed as more hyperactive. After medication he is reported to have improved somewhat but still fidgety and seems to be always doing something with his hands. His mother reported that his focus and memory continue to be an issue. She also reported that even though Clark received tutoring last summer and has been receiving Title I reading intervention three times a week all school year she remains concerned about Clark's reading comprehension.

During the present evaluation, Clark was friendly, cooperative, and put forth excellent effort across, though he reported being tired. Clark demonstrated appropriate emotion and mood throughout the session. His memory for recent events was intact and his sustained attention when listening to directions was adequate. Clark did pick at or bite his nails continuously for the 3 hours of testing and attempts to help him limit this behavior were ineffective. On tests that required him to respond using paper and pencil, Clark tended to initiate tasks prematurely, inconsistently self-monitored and self-corrected.

Results

Clark earned a CAS2 Full Scale score of 87, which is within the below average classification and is a percentile rank of 19. This means that his performance is equal to or greater than that of 19% of children his age in the standardization group. There is a 90% probability that Clark's true Full Scale score falls within the range of 83 to 92. Because there was significant variation among the four PASS scales, the Full Scale will sometimes be higher and other times lower than the four scales in this test. The Planning scale was found to be a strength in relation to his average PASS score and his Attention was found to be a weakness. These finding have important instructional implications.

Clark earned a *Planning* scale score of 98, which was significantly higher than his average PASS score. This scale measures his ability to use strategies when solving problems, check to see if the strategies are effective, modify or change solutions when needed, and efficiently complete tasks. Clark's Planning score is within the average classification and is a percentile rank of 45. This indicates that Clark did as well as or better than 45% of children his age in the standardization group. There is a 90% probability that Clark's true Planning score is within the range of 91 to 105. This cognitive strength has implications for educational programming because being relatively strong in Planning suggests that the youth may do well when given the opportunity to use strategies to solve problems and modify plans to improve efficiency.

Clark's *Simultaneous* score measures his ability to work with information that is organized into groups and form a cohesive whole. This scale also requires an understanding of how shapes as well as words and verbal concepts are interrelated. Clark earned a Simultaneous scale score of 89, which is within the below average classification

and is a percentile rank of 24. This means that Clark did as well as or better than 24% of the children in the standardization group. There is a 90% probability that Clark's true Simultaneous score is within the range of 84 to 96.

Clark's *Attention* score was significantly lower than his average PASS score and below the average range. This means that he performed particularly poorly on tests that required focused thinking and resistance to distraction when given many stimuli to look at. Clark earned an Attention scale score of 79, which is within the below average classification and is a percentile rank of 8. This means that Clark did as well as or better than only 8% of the children in the standardization group. There is a 90% probability that Clark's true Attention score is within the range of 73 to 90. This cognitive weakness as well as his cognitive strength in Planning are associated with his academic failure and success.

Clark's *Successive* score reflects his ability to repeat information, such as words or sentences, in order and an understanding of verbal statements when the meaning was dependent on the sequence of the words. Clark earned a Successive scale score of 91, which is within the average classification and is a percentile rank of 27. This means that Clark did as well as or better than 27% of the children in the standardization group. There is a 90% probability that Clark's true Successive score is within the range of 85 to 98.

In general, application of math facts is associated with Planning. This means that we would expect a student like Clark to have average scores on math and Planning, which is the case. He received a Math Concepts and Applications standard score of 97 and a Math Computation standard score of 95, both of which fall in the average range. The skills required in these subtests require that he *apply* knowledge of mathematical principles to real-life situations (e.g., using basic math skills to solve problems involving time and money, measurement, data investigations, and higher math concepts). By contrast, he earned low scores on those KTEA-II subtests that required knowledge *and* especially demanded focused attention and resistance to distraction.

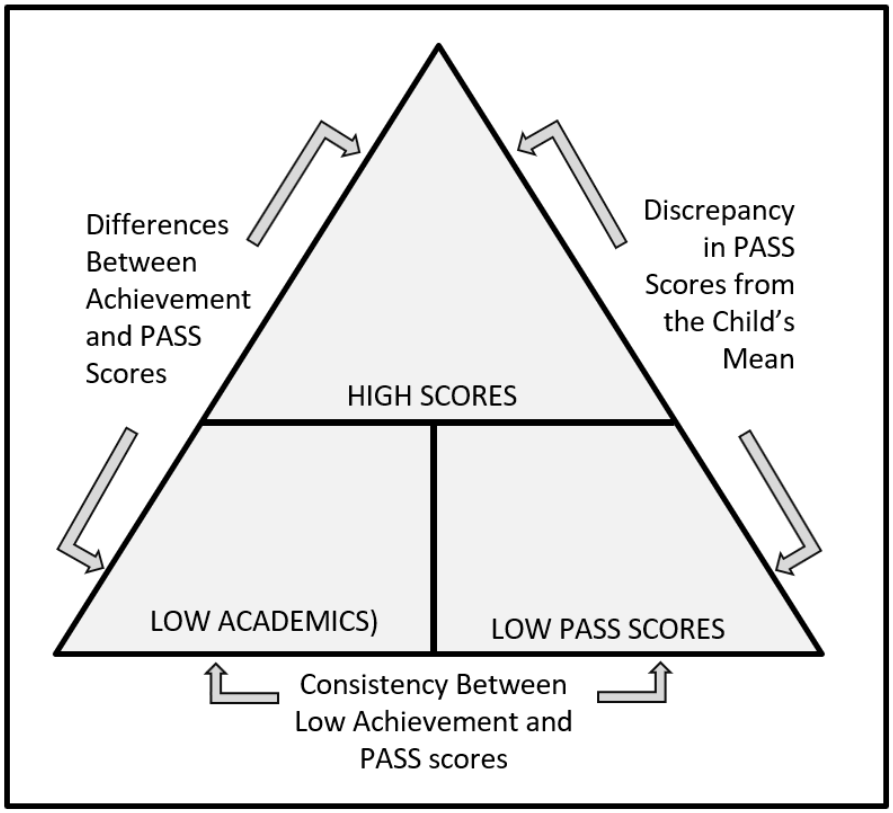
Clark struggled with academic tasks that demand Attention as measured on the CAS2. For example, he earned a Spelling standard score of 77 (which affected his Written Expression standard score of 84), a Reading Comprehension standard score of 79, and a Phonological Processing subtest score of 79. His difficulty with attention affects his spelling because he does not focus on the sequence of letters and instead uses a whole-word approach. It is noteworthy that his Letter and Word Recognition subtest standard score of 96 falls in the average range and that most of the words included in this subtest are irregular to ensure that the subtest measures more word recognition than decoding. His Reading Comprehension score is low because of the items that demand recall of literal facts, which he missed when he reads. Finally, his Phonological Processing score is low because managing the sequence of sounds is a task that requires focus and a lot of resistance to the distraction of the nontarget sounds.

Clark also received a particularly low score on the Attention scale of the Comprehensive Executive Function Inventory (CEFI) completed by his father. His CEFI Attention scale standard score was 58, which falls in the well below average range and is ranked at the 1st percentile, meaning that he scored as well as or better than only 1% of the children his age in the standardization group. This means that his father noted

considerable problems with day-to-day behaviors related to focus of attention. By contrast, Clark's Emotion Regulation score on the CEFI was 95 (average range), which reflects his control and management of emotions, including staying calm when handling small problems and reacting with the right level of emotion. All of these regulation behaviors are associated with Planning on the CAS2.

Worksheet for Clark

Cognitive Assessment System - 2			Difference from PASS Mean of:	Significantly Different (.05) from PASS Mean?	Strength (S) or Weakness (W)
PASS Scales	Standard Score	Percentile			
Planning	98	45			
Simultaneous	89	24			
Attention	79	8			
Successive	91	27			



Case #4 – Anthony (From T. M. Otero, 2017) paSS

Using CAS2 Online Scoring and Report Writing (https://www.proedinc.com/Products/14311/cas2-online-scoring-and-report-system-1year-base-subscription-includes-5-licenses.aspx)

Reason for Referral

Anthony was referred for evaluation because of parent concerns with attention and overactivity. Additionally, the parent reported concerns about Anthony's frustration and self-esteem when he is unable to complete a task. The purpose of the evaluation is to find out the nature of Anthony's difficulties for the purposes of educational planning and suggesting interventions.

Relevant Background Information

Anthony is an 8-year-old, right-handed male of Mexican descent (mother's side) who is currently completing third grade at Bailey Elementary School. He lives at home with his mother, Ms. M. where only Spanish is spoken. Although Anthony is fluent in Spanish, Ms. M reported that English is his dominant language because he has been exposed to English socially and since preschool.

Anthony attended local daycare at the age of 2. At age of 3, he moved to Mexico to live with his grandmother and attended preschool and kindergarten there. Ms. M reported that the separation was difficult for both her and Anthony, yet she was able to visit multiple times on a relatively regular basis. Anthony moved back to the United States at age 5 and attended a private school for first and second grade. Anthony, now a third grader, began attending public school at the beginning of the current school year. Teachers have described Anthony as bright and enthusiastic, but they had concerns regarding his initiation of play with other children, sometimes becoming upset and occasionally crying if he makes mistakes and is given constructive criticism by a teacher, difficulty sustaining his attention on adult-directed tasks, and as "needing to be in constant movement and fidget with things." Anthony has occasional difficulties when changes occur in the typical school routines, meaning that he sometimes demonstrates inflexibility in adapting or being ready for new topics and following through with changes in class activities. However, teachers reported that Anthony is generally a wonderful student and is academically successful.

Behavioral Observations

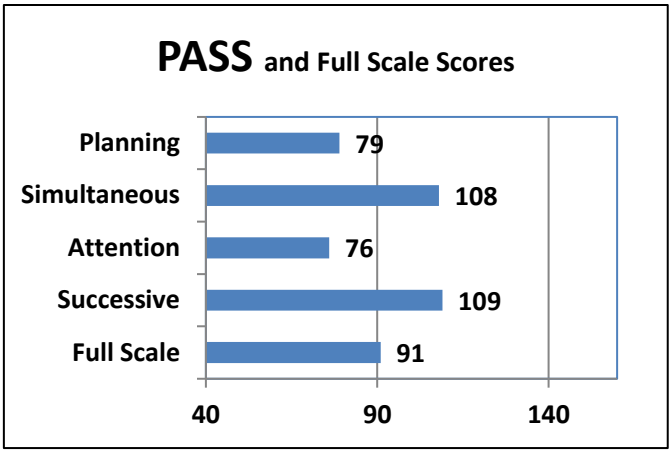
Off-task behavior such as looking around the room, attempting to look through test materials, fidgetiness, and interrupting the flow of the assessment by asking questions were observed throughout the evaluation. When redirected, Anthony remained on-task for short periods. His off-task and distracted behavior seemed to have affected his performance during various tasks (specifically, tasks requiring sustained attention, such as a listening comprehension measure and measures of attention). Anthony often asked if he answered questions correctly, if tasks were "for a grade," and if he was doing as well as other students who have taken the tests.

Classroom Observations

Anthony was observed in the general education setting in various classes and across different days and times of day. Overall, Anthony demonstrated generally age-appropriate performance as long as he was in movement. When just sitting and required to listen and follow lecture-like instruction he would look around the room, in his desk, and find items to look at and manipulate. In gym class, Anthony would fidget while listening to instructions from the teacher. The students were instructed to walk when they heard slower music and run when they heard faster music. Anthony did not alter between walking and running. He only ran and only momentarily would adjust his speed when directed to. During the daily morning meeting time in his homeroom, Anthony sat in a circle with the other students. He took his turn greeting the student next to him with a handshake and eye contact, saying, “Good morning.” During independent work time, Anthony only partially completed a writing work sheet quietly at his desk. Within a period of about 15 minutes, Anthony raised his hand to ask questions nine times. Each time, his question was about how to complete the work sheet. Anthony had difficulty completing the work sheet, in spite of the teacher providing repetition of instruction and encouraging him to continue working.

Neurocognitive Processing

Anthony earned a *Cognitive Assessment System Second Edition* (CAS2 Extended Battery) Full Scale score of 91, which is within the Average classification and is a percentile rank of 27. This means that his performance is equal to or greater than that of 27% of children his age in the standardization group. There is a 90% probability that Anthony's true Full Scale score falls within the range of 86 to 97. The CAS2 Full Scale score is made up of separate scales called Planning, Attention, Simultaneous, and Successive cognitive processing. Because there was significant variation among the PASS scales, the Full Scale will sometimes be higher and other times lower than the four scales in this test. The Planning Scale was found to be a significant cognitive weakness. This means that Anthony's Planning score was a weakness both in relation to his average PASS score and when compared to his peers. This cognitive weakness has important implications for diagnosis, eligibility determination, therapeutic and educational programming. The Simultaneous Scale was found to be high in relation to his average PASS score. This finding has important instructional implications. The Attention Scale was found to be a significant cognitive weakness. This means that Anthony's Attention score was a weakness both in relation to his average PASS score and when compared to his peers. This cognitive weakness has important implications for diagnosis, eligibility determination, therapeutic and educational programming. The Successive Scale was found to be high in relation to his average PASS score. This finding has important instructional implications.



Anthony's Planning score was significantly lower than his average PASS score and below the average range. This means that Anthony performed particularly poorly on tests that required strategies for solving the problems on the Planning tests. He had trouble with development and use of good strategies, control of behavior, self-monitoring, and self-correction when completing these tests. Anthony earned a CAS2 Planning Scale score of 79 which is within the Poor classification and is a percentile rank of 8. The percentile rank indicates that Anthony did as well as or better than 8% of others his age in the standardization group. There is a 90% probability that Anthony's true Planning score is within the range of 74 to 88. This cognitive weakness has important implications for diagnosis, eligibility determination, and educational and therapeutic programming because children who are weak on the Planning Scale often have problems with tasks requiring strategies, completing schoolwork and other tasks on time, impulse control, self-monitoring, and social situations. There was no significant difference between the two subtest scores that make up the Planning Scale.

Anthony earned a Simultaneous Scale score of 108, which was significantly above his average PASS score. This scale measures his ability to work with information that is organized into groups and form a cohesive whole and understand how shapes as well as words and verbal concepts are interrelated. Anthony's Simultaneous score is within the Average classification and is a percentile rank of 70. This indicates that Anthony did as well as or better than 70% of children his age in the standardization group. There is a 90% probability that Anthony's true Simultaneous score is within the range of 101 to 114. This relatively high score may have educational implications because it suggests that this strength could be used to enhance learning through the use of instruction that emphasizes visual-spatial organization of numbers, words, ideas or images. There was no significant difference between the two subtest scores that make up the Simultaneous Scale.

Anthony's Attention score was significantly lower than his average PASS score and below the average range. This means that Anthony performed particularly poorly on tests that required focused thinking and resistance to distraction when given many stimuli to look at. Anthony earned a CAS2 Attention Scale score of 76 which is within the Poor classification and is a percentile rank of 5. The percentile rank indicates that Anthony did as well as or better than 5% of others his age in the standardization group. There is a 90% probability that Anthony's true Attention score is within the range of 71 to 88. This cognitive weakness has important implications for diagnosis, eligibility determination, and educational and therapeutic programming because children who are weak on the Attention Scale often have problems focusing on what is important in

school, at home, and on the playground. They also have difficulty working in environments containing visual and auditory distractions. There was no significant difference between the two subtest scores that make up the Attention Scale.

Anthony earned a Successive Scale score of 109, which was significantly higher than his average PASS score. This means that Anthony performed well on tests that required recall of information such as words or sentences in order and an understanding of verbal statements when the meaning was dependent on the sequence of the words. Anthony's Successive score is within the Average classification and is a percentile rank of 73. This indicates that Anthony did as well as or better than 73% of children his age in the standardization group. There is a 90% probability that Anthony's true Successive score is within the range of 100 to 116. This strength has implications for educational programming because children who are good in Successive processing can do well when required to remember information in order and understand verbal statements when the meaning depends on the sequence of words and ideas. There was a significant difference between the two subtest scores on this scale. The Word Series score of 10 was significantly lower than the Sentence Repetition score of 13.

Social-Emotional Functioning

Developmentally, we expect young children to form attachments with others, seek out relationships, and practice and explore emotional regulation. As children grow, the social emotional skills become more sophisticated to enjoying humor, demonstrating strong social skills, and tolerating ambiguity. Social-emotional rating scales were completed by three teachers in addition to a parent rating scale completed by Ms. M. It should be noted that Teacher 1 and Teacher 3 may have rated Anthony in an overly negative light. Additionally, Teacher 1's responses were inconsistent at times, suggesting that these ratings should be interpreted with caution.

Ms. M's parent responses indicated only two areas of some concern for Anthony: attention and hyperactivity. Per teacher reports, the area of externalizing problems was rated as being of the highest concern. All three teachers reported significant concerns in the areas of attention, hyperactivity, whereas concerns of anxiousness were considered "at risk." Teacher ratings also indicate that Anthony frequently acts in strange or unusual ways. This is consistent with teacher comments of Anthony acting silly and making off-task comments that do not make sense in some situations, meaning his responses are impulsive and irrelevant to whatever is asked or discussed in class. Other areas that showed slight concern were adaptability (adapting to changes in environment or routine), social skills, leadership, study skills, and functional communication. Considering these concerns in light of current observational data, it appears that Anthony's greatest social-emotional weakness are related to externalizing problems, specifically hyperactivity, attention, as evidenced by intrusive comments and questions; needing constant movement; and difficulty sustaining his attention to tasks. Some degree of anxiety is noted and judged to be related to his awareness of his struggles: Anthony strives to be a good student, but can be thrown off-track as he becomes upset when he is unsure of academic expectations, has difficulty keeping track of what he needs to do to complete tasks, or feels that he has made the same mistake repeatedly.

Academic Skills

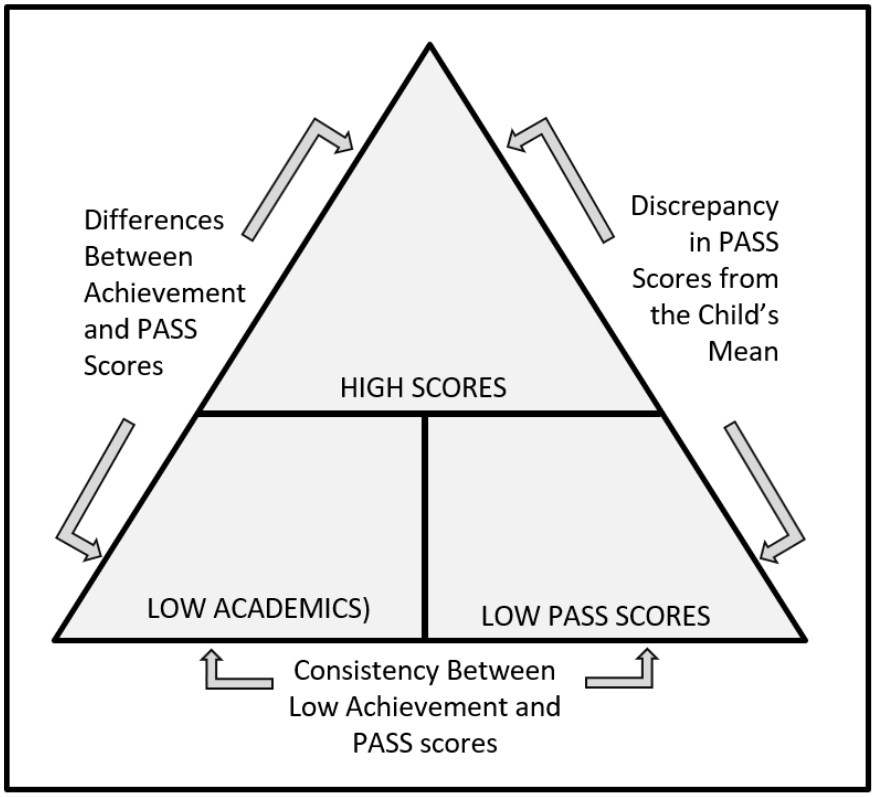
Anthony's achievement levels in reading, writing, math, and listening comprehension were assessed and compared to a national sample of same-age peers and criterion for what children his age should be exposed to and have obtained with adequate mastery. Overall, Anthony performed solidly within the average range in the areas of reading, writing, and math. In reading, Anthony was able to decode new words, read words fluently, and comprehend what he had read similarly to his same-age peers. In the area of math, Anthony successfully solved age-appropriate computation and applied math problems. In the area of writing, Anthony showed the ability to adequately spell words and generally express his thoughts through writing with age-appropriate mechanics, grammar, and sentence structure. On a listening comprehension test, Anthony's score fell within the low range and was likely negatively influenced by his limited sustained attention during the test.

KTEA-III Scores for Anthony

Subtest	Standard Score	Classification
Reading Composite	96	Average
Letter and Word Recognition	100	Average
Reading Comprehension	93	Average
Nonsense Word Decoding	90	Average
Word Recognition Fluency	96	Average
Decoding Fluency	87	Average
Reading Vocabulary	108	Average
Letter Naming Facility	84	Below average
Object Naming Facility	91	Average
Listening Comprehension	68	Low
Math Composite	90	Average
Math Concepts and Applications	96	Average
Math Computation	82	Average
Written Language Composite	89	Average
Written Expression	79	Average
Spelling	101	Average

Worksheet for Anthony

Cognitive Assessment System - 2			Difference from PASS Mean of:	Significantly Different (.05) from PASS Mean?	Strength (S) or Weakness (W)
PASS Scales	Standard Score	Percentile			
Planning	79	34			
Simultaneous	108	45			
Attention	76	4			
Successive	109	25			



Solutions to CAS2 Brief and Rating Scale PASS Analysis
Differences Between PASS Scale Standard Scores and the Student's Average PASS Score Required for Significance for the CAS2 BRIEF AGES 5-7 Years.

	Cognitive Assessment System - 2		Difference from PASS Mean of:	Significantly Different (at $p < .05$) from PASS Mean?	Strength or Weakness	
	PASS Scales	Standard Score	97.5			
Ages 5-7 YEARS	Planning	**103**	5.5	no		
	Simultaneous	**112**	14.5	yes	Strength	
	Attention	**96**	-1.5	no		
	Successive	**79**	-18.5	yes		Weakness

Note: Strengths and weaknesses are based on having a low PASS score (ipsative comparison at the .05 level of significance) *and* PASS scores that are below 90 (25th percentile).

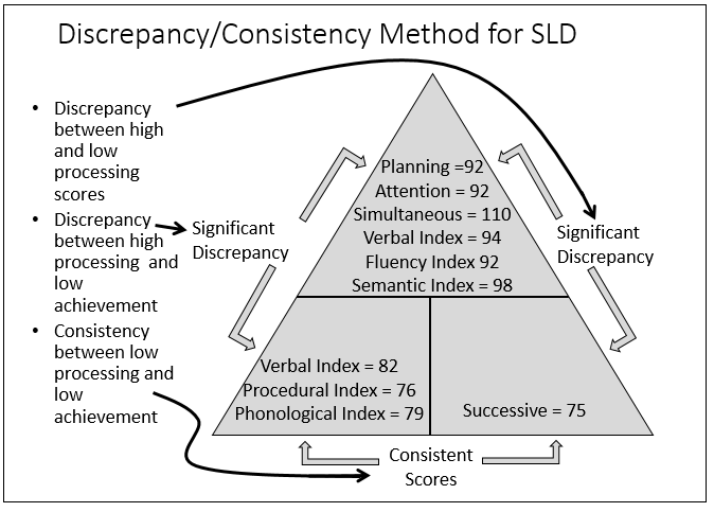
Differences Between PASS Scale Standard Scores and the Student's Average PASS Score Required for Significance for the CAS2 RATING SCALE AGES 5-7 Years.

	Cognitive Assessment System - 2		Difference from PASS Mean of:	Significantly Different (at $p < .05$) from PASS Mean?	Strength or Weakness	
	PASS Scales	Standard Score	97.0			
Ages 5-7 YEARS	Planning	**100**	3.0	no		
	Simultaneous	**109**	12.0	yes		
	Attention	**98**	1.0	no		
	Successive	**81**	-16.0	yes		Weakness

Note: Strengths and weaknesses are based on having a low PASS score (ipsative comparison at the .05 level of significance) *and* PASS scores that are below 90 (25th percentile).

Suggestions for the Case #1 Paul

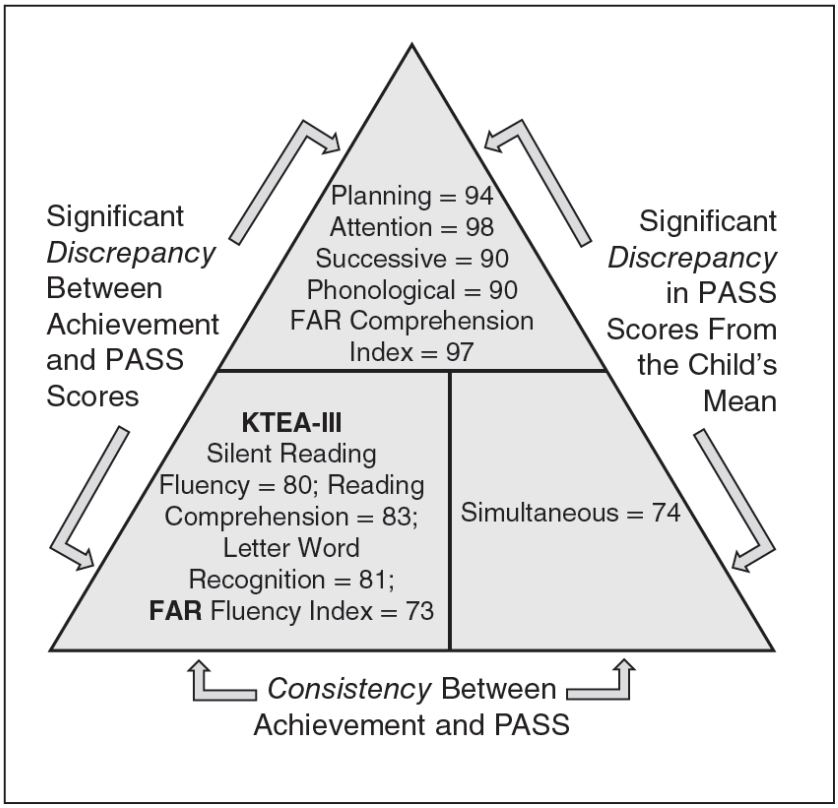
Cognitive Assessment System - 2			Difference from PASS Mean of:	Significantly Different (.05) from PASS Mean?	Strength (S) or Weakness (W)
PASS Scales	Standard Score	Percentile	92.2		
Planning	92	30	-0.3	No	
Attention	92	30	17.8	No	
Simultaneous	110	75	-.03	Yes	S
Successive	75	5	-17.3	Yes	W



This case illustrates how the Discrepancy/Consistency method provides a way to examine processing strengths and weaknesses as well as his academic skills for eligibility determination and to develop targeted interventions. As can be seen from the Table and DSM figure there was a significant discrepancy between Paul's Successive processing and the rest of his psychological processing scores as measured by the CAS-2. In addition, the FAM indicated that his Procedural Index was a relative weakness, and FAR indicated that his Phonological Index was a weakness. Finally, there was a consistency between Paul's difficulties in the sequential aspect of mathematics (Procedural Index) and sequential aspects of reading (Phonological Index), and lower Successive Processing scores. The PASS basic psychological processes as measured by the CAS-2 provide evidence that there is a 'disorder in basic psychological processes' and likely SLD. Specific strategies to assist Paul in math may include learning how to chunk information, practice on number line fluency skills, playing math games such as the 24 game to develop greater procedural knowledge when problem solving, and utilizing mnemonic strategies to remember longer mathematical algorithms. See Naglieri and Pickering (2010) and Naglieri & Feifer (2017) for more information about interventions.

Suggestions for Case #2 - Nelson

Cognitive Assessment System – 2 Extended Battery (12 Subtests)			Difference from PASS Mean of:	Significantly Different (.05) from PASS Mean?	Strength (S) or Weakness (W)
PASS Scales	Standard Score	Percentile	89.0		
Planning	94	34	5.0	No	
Simultaneous	74	4	-15.0	Yes	W
Attention	98	45	9.0	No	
Successive	90	25	1.0	No	



Nelson's Discrepancy/Consistency Method of SLD Results

Nelson's cognitive ability scores were mostly average with the exception of a significant weakness observed with his Simultaneous processing scale of the CAS2. This suggested he had considerable difficulty integrating separate elements of a problem into a conceptual whole. His poor Simultaneous processing ability is significantly hindering reading and written language skills. For instance, his spelling efforts were phonetically readable, but because of his inability to visualize the printed word form, they were often incorrect. In terms of his reading, his poor Simultaneous processing skills manifested through limitations with text orthography. This involves processing the entire printed word form rapidly and automatically, with limitations often leading to an overreliance on Successive processing, or sound-by-sound reading, and poor fluency skills. In addition, limitations with Simultaneous processing also hindered his ability to comprehend more abstract elements of the text. Nelson presented the academic and cognitive processing profile of a student with Surface Dyslexia.

Recommendations for School

1. Nelson would benefit from a targeted reading fluency intervention in order to increase text automatic recognition and fluency (e.g., Read Naturally, Great Leaps, RAVE-O, etc.).
2. Nelson's orthographic processing skills were somewhat weak. Color-coding letter-various syllable and sound subtypes, particularly vowel diphthongs in phonetically irregular words, may be very helpful (e.g., *c**au**tion, danger**ou**s,* etc.).
3. Nelson may benefit from targeted writing activities to help reinforce letter and word recognition skills. Specific activities such as identifying which of three sight words is spelled correctly (e.g., *wuz, whas, or was*) may help to develop automaticity recognizing vowel patterns in words.
4. Nelson should benefit from using graphic organizers, story maps, and other prewriting activities to assist him when organizing his thoughts when writing. In addition, he should have access to a word bank of words to assist him with spelling as well.
5. Nelson might benefit from having access to a Franklin Word Speller and other technology devices and to assist with his overall spelling skills.
6. In order to improve Simultaneous processing and facilitate text-visualization skills, have Nelson practice spelling words with white space in between each syllable in the word. Next, frame each letter in a box similar to the letter size. For example, the word fascinate would be written as fas cin ate. The visual space draws attention to the different word parts and the boxes provide organizational cues. A similar method that encourages children to put information into groups is found in Naglieri and Pickering's (2010) "Chunking for Spelling" intervention handout.
7. Nelson's writing mechanics remain an area of concern, though he has good Planning and Attention skills. He may benefit from learning the COPS strategy, a directional proofreading strategy in which Nelson rereads his work four times prior to completion. The first time he proofreads his passage to make sure he *capitalizes* the first word of each sentence, the second time is to make sure each

paragraph is *organized* correctly, the third time is to check for *punctuation* errors, and the fourth time for *spelling* miscues.

Recommendations for Home

8. Nelson should be encouraged to read a minimum of 20 minutes per day after school in order to develop more text familiarity and enhanced fluency skills.
9. Nelson's parents may want to consider having a tutor work with him at home in order to improve his overall reading fluency skills.
10. Nelson's parents may want to consider using a reading fluency program at home (e.g., Great Leaps).
11. Nelson's parents may find the instructional methods described in the book Helping Children Learn (Naglieri & Pickering, 2010) to be useful. Especially appropriate are, for example, the handouts "Segmenting Words for Reading/Decoding," "Spelling, Word Sorts for Improving Spelling," and "Mnemonics for Spelling."

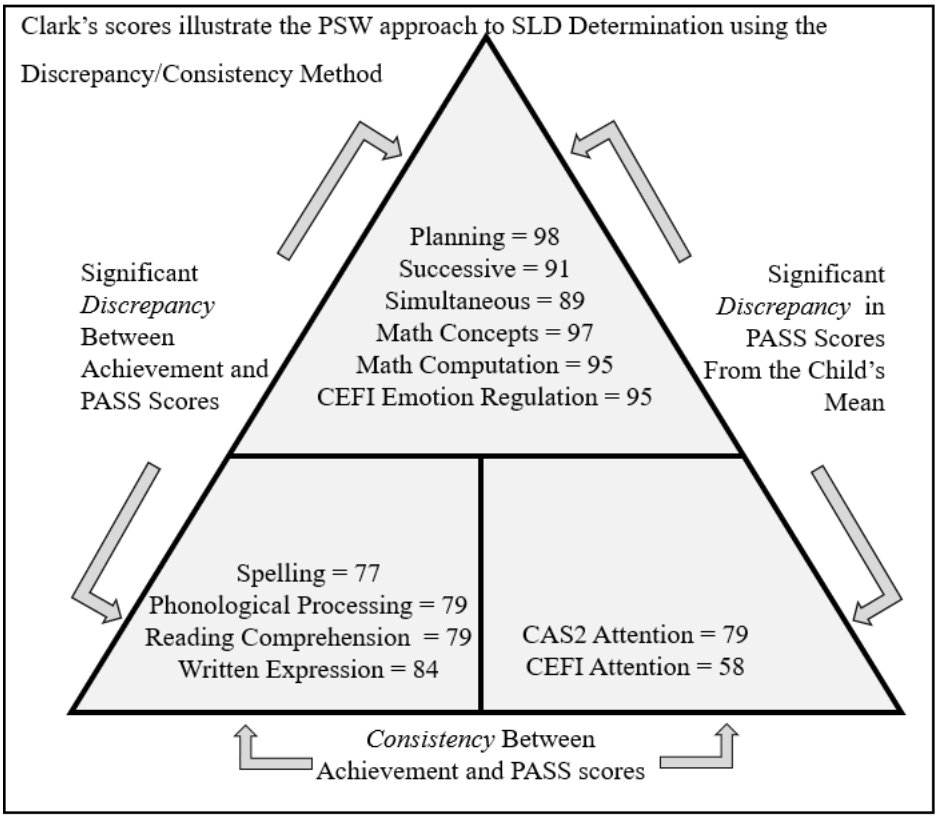
Recommendations for Student Feedback:

It is strongly recommended that the clinician provide direct feedback to help Nelson better understand his unique strengths and weaknesses as a learner. The initial goal is to change Nelson's attitude toward school and himself by exploring further his mind-set about his own abilities. This can be facilitated using the "Measure of Mindset" checklist shown in Figure 5.2. Next, it is important to help Nelson know that his PASS strengths can be used to manage the PASS weakness in Simultaneous processing. This can be accomplished with the aid of the handouts that are intended for students in *Helping Children Learn* (Naglieri & Pickering, 2010) and that describe each of the four PASS abilities. The overarching goal is to change Nelson's view of himself by providing reassurance that with knowledge of strengths and needs, success is possible. Therefore, the clinician and his parents should engage in a demystification process whereby the reason for academic failure is described and, most important, how PASS strengths can be used to overcome the weaknesses. The following discussion illustrates how this might happen:

> Nelson, it was such a pleasure to work with you and discover all of your learning strengths. Believe me … there were a ton. You have a remarkable ability to approach learning with a plan in mind, and you stay attentive and focused to your assignment until the very end. I did notice that when you read, you sometimes focus a little too much on decoding the words and not letting your natural reading skills take over. You do a great job pronouncing each word, so we want to work with you on increasing your speed and fluency just a bit. One of the ways we are going to do this is by having you read a little more frequently at home each day. I also noticed that you give such a great effort when writing, but sometimes it can be hard to spell new words. One of the tricks to being a good speller is to close your eyes and see if you can see the word in your head. We have a few activities that should help you see words in your mind a little more clearly and that should really help with spelling. Nelson, the rest of your academic skills look really good, and given your wonderful attitude and great effort you put forth each day, you will be a very successful student. It was really great to work with you.

Suggestions for Case #3 of Clark

Cognitive Assessment System - 2			Difference from PASS Mean of:	Significantly Different (.05) from PASS Mean?	Strength (S) or Weakness (W)
PASS Scales	Standard Score	Percentile	89.3		
Planning	98	45	8.8	No	
Simultaneous	89	24	-0.3	No	
Attention	79	8	-10.3	Yes	W
Successive	91	27	1.8	No	



Summary

The results of this analysis suggest that Clark has a disorder in the basic psychological process of Attention as measured by the CAS2, which is consistent with a low Attention scale score on the CEFI and corresponds to specific areas of academic failure. His struggles with reading comprehension (especially literal recall); spelling and its impact on

written language are also related to his difficulty with focus of attention and resistance to distraction. The Attention weakness is in contrast to his strength in Planning, which is associated with high scores in math concepts and applications, reading words aloud from a list, and math computation. These finding suggest that teachers should use Clark's strength in Planning, that is, the use of strategies, to overcome difficulties related to Attention. The following recommendations are offered.

Interventions

It is very important that Clark be informed of his strength in using strategies (Planning) and how his good ability to think about how to do things can help him overcome his challenges when focus of thinking and resisting distractions (Attention) is required. This will be especially important when he is reading (particularly literal questions) and writing. The informational handouts "How to Be Smart: Attention" and "How to Be Smart: Planning" from *Helping Children Learn* (Naglieri & Pickering, 2010) should be given to Clark when the results of this evaluation are explained to him. Special attention should be given to his mind-set about his own abilities, and emphasis should be placed on the view that he can do better if he thinks smart. The method described in the "Overcoming Problems with Inattention" sheet from that book should be used to guide his thinking about attending so that he can feel empowered to manage his attention. These same recommendations should be shared with his parents and teachers.

Practical Instructional Modifications

Improving Attention

- Break lessons and assignments into segments so that Clark can complete them.
- Simplify instructions and present them in segments that Clark can manage.
- Establish a cue that the teacher or parent always uses to help Clark recognize when attention is lost.
- Teach Clark to systematically and carefully look at materials before responding (e.g., look at all the options before choosing an answer).
- Decrease the amount of distracting information in the environment.
- Use materials that are interesting to Clark.
- Teach Clark to check work using calculators, spell checkers, and other helpful items.
- Encourage Clark to slow down and look carefully at how words are spelled, for example.

Making Instructions Easier to Process

- Make sure you have Clark's attention.
- Provide oral and written instructions.
- Give one instruction at a time and then repeat the instructions to Clark, if necessary.
- Have Clark repeat back the instructions to confirm that he understands what to do.

Structuring the Environment to Improve Attention

- Be clear and concise when discussing behavior changes with Clark. Avoid lengthy discussions of problematic behaviors.
- Develop a strategy and an action plan for how Clark can increase positive attention from others.
- Seat Clark at the front of the class near the teacher.
- Avoid open concept classroom layouts. A more enclosed, traditional classroom environment reduces distractions.
- Modify Clark's schedule so that more demanding classes are taught earlier in the day.
- Schedule activities and courses in a way that maximizes Clark's attention by alternating tasks that require a lot of attention (instruction classes) with other activities (physical activity) and breaks. It is best if the schedule is predictable so that Clark has consistency.
- Suggest strategies for reducing distractions and sensory stimulation, such as using headphones or earplugs.
- Provide only those materials that are necessary for the task and model this practice so that Clark will learn to focus and use only what is needed to complete his work.
- Assign a job or task during large-group activities or when Clark needs to be patient for his turn to keep him engaged throughout the activity.
- Decrease workload (e.g., break tasks up into smaller, more manageable parts) so that it aligns with Clark's attention level and abilities. Increase workload as Clark gains a greater attention span.
- Reduce the length of assignments to emphasize quality over quantity of work.
- Accommodate regular breaks during tasks that allow Clark to get out of his seat and move around.
- Allow extra time on assignments, quizzes, and tests.
- Consider restructuring tests to a format that best suits Clark's abilities (e.g., multiple-choice will reduce writing demand; some children do better giving answers orally, whereas other children like to use a word processor to type out their responses).
- Provide an unlimited amount of time to finish tests and provide breaks as necessary.
- Teach meditation, yoga, martial arts, or tai-chi, all of which require Clark to focus his attention.

Help Classroom Focus

- Have a peer assist in note-taking.
- Have the teacher ask questions to encourage participation.
- Enlist Clark to help present the lesson.
- Cue Clark to stay on task with a private signal—a gentle tap on the shoulder.
- Schedule a 5-minute period for Clark to check over work before turning in assignments.

When Observed to Day Dream in class

- Have the teacher use clear verbal signals, such as “Freeze,” “This is important,” or “One, two, three … eyes on me.”
- Allow Clark to earn the right to daydream for 5 to 10 minutes by completing the assignment
- Use a flashlight or a laser pointer to illuminate objects or words to pay attention to.
- Illustrate vocabulary words and science concepts with small drawings or stick figures.

Settle Fidgety, Restless Behaviors

- If Clark taps his foot or pencil nervously in class or gets up out of his seat a lot, offer these suggestions:
- Allow him to run errands, to hand out papers to other students, clean off bookshelves, or to stand at times while working.
- Give Clark a fidget toy in class to increase concentration.
- Slot in short exercise breaks between assignments.
- Give Clark a standing desk or an air-filled rubber disk to sit on so he can wiggle around.

Suggestions for Case #4 - Anthony

PASS Scale Comparisons

	Index Score	d value	Sig/ NS	Strength Weakness	% in sample
Planning	79	-14	Sig	W	12.9
Simultaneous	108	15	Sig		13.6
Attention	76	-17	Sig	W	8.1
Successive	109	16	Sig		15.2
PASS Mean	93				

The first step is to help Anthony understand the nature of his Attention problems (from Naglieri & Pickering, 2010):

1. Concepts such as Attention, resistance to distraction, and control of Attention
2. Recognition of how attention affects daily functioning
3. Recognition that the deficit can be overcome

The second step, teachers and parents can help Anthony improve his motivation and persistence:

1. Promote success via small steps.
2. Ensure success at school and at home
   a. Allow oral responses to tests.

   b. Circumvent reading whenever possible.
3. Teach rules for approaching tasks.
   a. Help Anthony to define tasks accurately.
   b. Assess Anthony's knowledge of problems.
   c. Encourage Anthony to consider all possible solutions.
   d. Teach Anthony to use a correct test strategy.
4. Discourage passivity and encourage independence.
   a. Provide only as much assistance as is needed.
   b. Reduce the use of teacher solutions only.
   c. Require Anthony to take responsibility for correcting his own work.
   d. Help Anthony to become more self-reliant.
5. Encourage Anthony to avoid the following:
   a. Excessive talking
   b. Working fast with little accuracy
   c. Giving up too easily
   d. Turning in sloppy disorganized papers

Third, teachers and parents should give Anthony specific problem-solving strategies.

1. Model and teach strategies that improve attention and concentration.
2. Help Anthony to recognize when he is under- or over attentive.

This instruction benefits students who have problems maintaining attention or who are overactive. These strategies may be particularly helpful for children who demonstrate low scores in Attention and children who show weaknesses in Attention along with problems with Planning. Because a student who has a Planning weakness may have a particularly difficult time monitoring and controlling his or her actions, these strategies may be useful to provide structure and help the student follow specific plans to increase his or her self-control and focus of attention.

To encouraging positive self-control, Anthony can be directly taught to pay attention to and think about his behavior, followed by a sequential plan to determine his best options for responding given the context. Detailed information for this intervention can be found in Naglieri and Pickering (2010).

Additional Suggestions

- Anthony may benefit from participating in social groups that focus on appropriate conversational skills, recalling the events from a story, and staying on-topic.
- Consider social work services or counseling within the school to target anxiety and worrisome thoughts and behavior.
- Practice coping skills when faced with challenging tasks or provided with constructive criticism.
- Consider peer buddy group or "lunch bunch" group to practice social skills (i.e., initiating conversation, cooperative play) and help Anthony build friendships despite being a new student this school year.
- Provide preferential seating next to a model peer to whom Anthony can ask questions or watch to know exactly how to follow instructions.
- Provide written instructions simultaneously with visual instructions.

- Provide verbal reminders and checks for understanding.
- Provide a model or example of work expectations.
- Use peer buddies or a small group within classroom to enhance Anthony's understanding of material gone over and social cooperation.
- Provide a schedule on Anthony's desk to help with daily routines and expected activities.
- To help with negative self-statements or frustration, emphasize what Anthony does well and provide specific praise.
- Allow Anthony to reflect on his strengths and have him write down three things he did well at the end of each day; allow his mother to reinforce these strengths with positive feedback or rewards.
- Consider a class-wide activity of providing compliments from peer to peer at the end of each day.

Correspondence of PASS with FAR and FAM included in CAS2, FAR, FAM Analyzer

Feifer Assessment of Reading

Feifer Assessment of Reading	Planning	Attention	Simultaneous	Successive
Phonological Index				X
Phonemic Awareness				X
Nonsense Word Decoding				X
Isolated Word Reading Fluency			X	X
Oral Reading Fluency			X	X
Positioning Sounds				X
Fluency Index			X	
Rapid Automatic Naming			X	
Verbal Fluency	X			
Visual Perception		X		
Irregular Word Reading Fluency			X	
Orthographical Processing		X	X	
Comprehension Index	X	X		
Semantic Concepts	X		X	
Word Recall	X	X		
Print Knowledge		X		
Morphological Processing				X
Silent Reading Fluency: Comprehension	X	X	X	

Feifer Assessment of Mathematics

Feifer Assessment of Mathematics	Planning	Attention	Simultaneous	Successive
Procedural Index				X
Forward Number Count		X		X
Backward Number Count		X		X
Numeric Capacity		X		X
Sequences	X			X
Object Counting		X		X
Verbal Index			X	
Rapid Number Naming			X	
Addition Fluency		X	X	
Subtraction Fluency		X	X	
Multiplication Fluency		X	X	
Division Fluency		X	X	
Linguistic Math Concepts	X		X	
Semantic Index	X		X	
Spatial Memory		X	X	
Equation Building	X		X	X
Perceptual Estimation	X		X	
Number Comparison		X	X	
Addition Knowledge	X	X		
Subtraction Knowledge	X	X		
Multiplication Knowledge	X	X		
Division Knowledge	X	X		