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Using the Core-Selective Evaluation Process (C-SEP) With the *Woodcock-Johnson® IV*: From Theory to Practice

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The Core-Selective Evaluation Process (C-SEP) is a pattern of strengths and weaknesses model for identifying a specific learning disability using the core tests of the Woodcock-Johnson IV *(WJ IV™; Schrank, McGrew, & Mather, 2014a) as the foundation of an evaluation, with additional selective testing conducted as needed. The purposes of this Assessment Service Bulletin (ASB) are to (a) present a brief overview of the C-SEP framework and illustrate how the WJ IV fits within that framework; (b) provide guidance around the flexibility of the C-SEP model; and (c) present case studies that illustrate the application of this approach with the* Woodcock-Johnson IV Tests of Cognitive Abilities *(WJ IV COG; Schrank, McGrew, & Mather, 2014b),* Woodcock-Johnson IV Tests of Oral Language *(WJ IV OL; Schrank, Mather, & McGrew, 2014b), and* Woodcock-Johnson IV Tests of Achievement *(WJ IV ACH; Schrank, Mather, & McGrew, 2014a) for an elementary school student, a middle school student, and a college student. Each case study will demonstrate how the WJ IV core tests provide sufficient norm-referenced foundational data and, in some situations, provide the necessary data for a comprehensive evaluation.*

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Using the Core-Selective Evaluation Process (C-SEP) With the *Woodcock-Johnson® IV*: From Theory to Practice

The Core-Selective Evaluation Process (C-SEP) is a third-method approach, rooted in contemporary Cattell-Horn-Carroll (CHC) theory (Stephens-Pisecco & Schultz, 2017), used to identify a specific learning disability (SLD) through the establishment of a pattern of strengths and weaknesses (PSW). The approach requires the application of professional judgment (Schultz & Stephens, 2009), integrated data analysis techniques (McMillian & Schumacher, 2010; Schrank, Stephens-Pisecco, & Schultz, 2017; Schultz, Simpson, & Lynch, 2012), and the use of statistical support to help guide decisions (Schrank et al., 2017). C-SEP comprises a set of sound educational practices (Schrank et al., 2017) logically interwoven to provide a comprehensive, statistically valid, and legally defensible SLD assessment. C-SEP provides an organizational framework for an evaluation; specifically, the foundation of the evaluation consists of "core" norm-referenced tests and, if necessary, additional "selective" testing. C-SEP is an efficient, focused, data-driven, professional judgment process (Schrank, 2017; Schrank et al., 2017; Schultz & Stephens, 2015; Schultz & Stephens-Pisecco, 2017).

The purposes of this Assessment Service Bulletin are to (a) present a brief overview of the C-SEP framework and illustrate how the *Woodcock-Johnson IV* (WJ IV™; Schrank, McGrew, & Mather, 2014a) fits within the C-SEP framework; (b) provide guidance around the flexibility of the C-SEP; and (c) present three case studies that illustrate the application of the C-SEP with the WJ IV for one elementary school student, one middle school student, and one college student. Each case study demonstrates how the WJ IV core tests provide the sufficient norm-referenced foundational data for a comprehensive evaluation.

Core-Selective Evaluation Process (C-SEP) Framework

C-SEP is a third-method PSW approach to SLD identification and is reflective of special education policy (Individuals with Disabilities Education Improvement Act; IDEA, 2004). These conditions must be satisfied to meet SLD eligibility requirements under C-SEP (Schultz & Stephens-Pisecco, 2017):

1. The student received appropriate instruction, either through response-to-intervention (RTI) systems or some other type of supplemental instruction, prior to referral.
2. Multiple measures (e.g., curriculum-based measures [CBMs], grades, work samples, state test scores) indicate that the student does not achieve adequately for his or her age or does not meet state-approved grade-level standards (IDEA, 2004).

3. Pattern-seeking techniques reveal a significant variance among specific areas of cognitive functioning, such as working memory and verbal comprehension, or between specific areas of cognitive functioning and academic achievement (Evans, Floyd, McGrew, & Leforgee, 2001; Flanagan, Fiorello, & Ortiz, 2010; Floyd, Meisinger, Gregg, & Keith, 2012; McGrew & Wendling, 2010; Schultz et al., 2012). Such patterns are identified using norm-referenced tests of cognitive abilities, oral language, and achievement and through the integration and consideration of other data sources.
4. Other factors that may be the primary cause of a student's academic skill weaknesses and learning difficulties have been considered and ruled out (Stephens et al., 2013). These factors include vision, hearing, or motor disabilities; intellectual disability (ID); social-emotional or psychological disturbance; environmental or economic disadvantage; cultural and linguistic factors (e.g., limited English proficiency); and inadequate instruction. The assessment team must rule out any of these factors as being the *primary* cause of a student's academic and learning difficulties; however, the *degree of influence* or *contribution* to the learning problems must also be addressed (Stephens et al., 2013).

Stages of C-SEP: Review, Plan, Assess, and Decide

C-SEP provides the framework for a comprehensive evaluation and consists of the following stages: Review, Plan, Assess, and Decide. Each stage of C-SEP plays an important role in conducting a comprehensive evaluation (Schultz & Stephens, 2015).

Review

The purposes of this stage are to (a) clarify the referral questions, (b) provide a preliminary assessment of exclusionary factors, (c) assess instruction and instructional response, and (d) identify a pattern of academic strengths and weaknesses based on prior educational data. Table 1 lists the steps an evaluator completes during the Review stage and the tool or strategy to be used for each step.

Table 1.
The Review Stage of a Comprehensive Evaluation Using C-SEP

Steps	Tools and Strategies
Step 1: Clarify referral concerns.	If the referral concerns are vague or unclear, clarify by interviewing the referral source(s) or requesting additional information.
Step 2: Review the student's educational records.	Document findings related to referral concerns and exclusionary factors. In addition, document emergence of referral concerns (patterns) if evident from the review. Educational records include: a) cumulative folder b) special education folder (if re-evaluation) c) report cards d) state testing scores e) attendance records f) discipline/behavior information g) Home Language Survey

Table 1. *(cont.)*
The Review Stage of a Comprehensive Evaluation Using C-SEP

Steps	Tools and Strategies
Step 3: Review the student's progress in response to scientific, research-based intervention in the area(s) of suspected disability.	Assess the effectiveness of RTI and describe progress: a) If the student has not made adequate progress as measured by rate of improvement (ROI) over time despite intensive instruction/intervention, investigate a possible specific learning disability (SLD). b) If the student made progress when provided intensive intervention and instruction over time but is still not achieving at the level of peers (e.g., the ROI trend line is low but rising), consider that the student has general low achievement. c) If the student made significant progress under RTI as measured by ROI, consider whether the student is an "instructional casualty" rather than a student with an SLD.
Step 4: Establish the student's failure to meet age- or grade-level state standards, when provided appropriate instruction, in one of eight areas.	Review and consider the following data sources to establish the student's failure to meet age- or grade-level standards: a) RTI data b) in-class test scores c) grade average over time d) other norm- or criterion-referenced test scores (e.g., WJ IV or statewide assessment) e) information from teachers f) information from parents g) work samples h) observations i) any other useful data

Plan

During the Plan stage, the evaluator creates an assessment plan that includes a hypothesis based on the referral question and the data collected during the Review stage. Table 2 lists the steps the evaluator completes during the Plan stage and the tool or strategy to be used for each step.

Table 2.
The Plan Stage of a Comprehensive Evaluation Using C-SEP

Steps	Tools and Strategies
Step 1: Organize and analyze informal data.	Organize informal data into categories and analyze for patterns.
Step 2: Develop a working hypothesis of the referral concern.	Using the reason for referral data and information gathered regarding possible causes for underachievement, create a working hypothesis about the cause of the underachievement.
Step 3: Determine what additional data is needed to answer the referral question.	a) Select norm-referenced tests of cognition, language, and achievement. b) Use observation tools that investigate language demands, classroom demands, and demands of the testing situation.

Assess

Using the data obtained during the first two stages of C-SEP, the evaluator creates an assessment plan. C-SEP provides flexibility for norm-referenced assessment practices. In most cases, the evaluator will begin with the administration of the core tests of the WJ IV COG (Schrank, McGrew, & Mather, 2014b), the WJ IV OL (Schrank, Mather, & McGrew, 2014b), and the WJ IV ACH (Schrank, Mather, & McGrew, 2014a). It is recommended that the core WJ IV COG tests be given first, followed by the WJ IV OL tests, and then the WJ IV ACH tests (Schrank et al., 2017). However, in some cases, the evaluator may decide to *not* begin with the WJ IV COG tests; more in-depth discussion about the choice of tests is provided later in this ASB. Table 3 provides guidance for the Assess stage of C-SEP.

Table 3.
The Assess Stage of a Comprehensive Evaluation Using C-SEP

Steps	Tools and Strategies
Step 1: Measure core psychological processes.	Administer the core set of WJ IV COG tests (Tests 1–7): Test 1: Oral Vocabulary Test 2: Number Series Test 3: Verbal Attention Test 4: Letter-Pattern Matching Test 5: Phonological Processing Test 6: Story Recall Test 7: Visualization
Step 2: Measure core language abilities.	Administer the core set of WJ IV OL tests (Tests 1–4), which include measures of expressive and receptive language: Test 1: Picture Vocabulary Test 2: Oral Comprehension Test 3: Segmentation Test 4: Rapid Picture Naming
Step 3: Measure core achievement.	Administer the core set of WJ IV ACH tests (Tests 1–6): Test 1: Letter-Word Identification Test 2: Applied Problems Test 3: Spelling Test 4: Passage Comprehension Test 5: Calculation Test 6: Writing Samples
Step 4: Analyze norm-referenced test data.	Organize WJ IV test data by construct, task demands, and test publisher scores.
Step 5: "Selectively" administer additional tests.	Selectively administer additional tests in areas that show deficiencies that need further exploration.
Step 6: Observe the student in the classroom setting.	Observe the student in the general education classroom in the subjects related to the areas of concern. a) Describe how the academic areas of concern impact the student's performance in the classroom. b) Note specific behaviors related to the academic areas of concern, including the student's reactions to instruction and feedback from the general education teacher. c) Complete language demands assessment.

Table 3. *(cont.)*
The Assess Stage of a Comprehensive Evaluation Using C-SEP

Steps	Tools and Strategies
Step 7: Administer informal assessments, if needed.	Additional informal tests can include: a) Curriculum-based measures (CBMs) b) Language demands assessment c) Informal reading inventories
Step 8: Document additional information.	Document any other additional information/data collected, such as: a) Testing the limits b) Motivation (can't do/won't do)

Decide

The evaluator moves to this stage after all data are collected. During the Decide stage, the evaluator integrates and analyzes the data and applies them to PSW methodology. Results of the evaluation should be shared with the Individualized Education Program (IEP) committee to determine whether the student has a disability. Table 4 provides guidance regarding the Decide stage of C-SEP.

Table 4.
The Decide Stage of a Comprehensive Evaluation Using C-SEP

Steps	Tools and Strategies
Step 1: Organize, sort, and make visual representation of the data.	Use integrated data analysis and pattern-seeking techniques.
Step 2: Apply data to PSW guidelines to answer these questions:	Does the student exhibit a pattern of strengths and weaknesses in: • cognitive abilities? • achievement? • oral language? If yes, describe the pattern: • compared to same-age peers in the classroom, statewide, and nationally • relative to state-approved grade-level standards (i.e., how far is the student's performance from grade standards?) • in terms of cognitive processes (e.g., how do these compare to each other when using intra-individual variation procedures for COG, OL, and ACH).
Step 3: Apply data to PSW policy to answer these questions:	The pattern of strengths and weaknesses is relevant to the identification of an SLD using appropriate assessments. Does the pattern suggest significant variance: • among specific areas of cognitive function such as working memory and verbal comprehension? If so, which ones? • between specific areas of cognitive function and academic achievement? If so, which ones?
Step 4: Report findings and make recommendations to the IEP committee.	The evaluator should provide the results of the evaluation to the IEP committee. The IEP committee will determine whether the student has a disability and will establish the educational needs of the student.

The *Woodcock-Johnson IV* and C-SEP

The WJ IV (Schrank, McGrew, & Mather, 2014a) is a comprehensive psycho-educational assessment system consisting of 50 tests that are organized into three batteries: the WJ IV COG (Schrank, McGrew, & Mather, 2014b), the WJ IV OL (Schrank, Mather, & McGrew, 2014b), and the WJ IV ACH (Schrank, Mather, & McGrew, 2014a). The WJ IV COG, WJ IV OL, and WJ IV ACH each include a set of four to seven "core" tests that create a foundation for interpretation, including an analysis of relative strengths and weaknesses (Schrank et al., 2017).

The WJ IV core tests consist of the most cognitively complex and ecologically valid tests in each battery (McGrew, LaForte, & Schrank, 2014). Each of the core tests was selected to represent a broad theoretical construct and to be a sensitive and relative indicator of learning problems. For efficiency, the core tests appear at the beginning of each test easel. After an examiner has administered and interpreted the core tests, one or more additional tests can be administered to enable further analysis of relative strengths and weaknesses.

Flexibility of C-SEP

It is recommended that evaluators administer the core tests of the WJ IV COG first, then the core tests of the WJ IV OL, and then the core tests of the WJ IV ACH; however, C-SEP offers flexibility around this process. In some situations, an evaluator might deem it more appropriate to begin core testing with the WJ IV OL or the WJ IV ACH. For instance, if a student is referred for a comprehensive evaluation but is suspected of having limited English proficiency, or if the referral concern involves oral language or listening comprehension, the evaluator should first conduct testing in the oral language area. Evaluators should adhere to the following guidelines when using the WJ IV OL battery as the first step of assessment.

Students With Limited English Proficiency

If an evaluator suspects that a referred student has limited English proficiency, tests from the WJ IV OL battery should be administered first to determine the student's language proficiency. For Spanish-English bilingual students, it is recommended that the evaluator first use the WJ IV OL Broad Oral Language/Amplio lenguaje oral Comparative Language Index (CLI) to determine the student's dominant language (Schrank et al., 2017). This process will help the evaluator determine the most appropriate language for administration of the cognitive tests; for a student whose oral language proficiency is greater in Spanish than in English, cognitive ability assessment should be conducted in Spanish.

The Broad Oral Language/Amplio lenguaje oral cluster CLI is obtained through the administration of six WJ IV OL tests—three tests in Spanish and three tests in English—and provides a summary of oral language proficiency in Spanish and English. The CLI is derived from the relative proficiency index (RPI). The RPI score, which is expressed as a ratio, provides an estimate of an examinee's likelihood of success (the numerator) on tasks that a typical peer will find manageable (the denominator, which is always 90). For example, an examinee with an RPI score of 72/90 will be 72% successful on tasks that typical peers perform with 90% success. The CLI, then, is a ratio of the numerators

from the RPI scores on the corresponding Spanish and English clusters, with the Spanish RPI numerator on the top and the English RPI numerator on the bottom. For example, a student's RPI score on the Spanish Amplio lenguaje oral cluster is 66/90, indicating that he performs with 66% success on oral language tasks that his typical same-age or same-grade Spanish-speaking peers perform with 90% success. The same student obtained an RPI score of 15/90 on the English Broad Oral Language cluster, indicating that he performs with only 15% success on oral language tasks that his typical same-age or same-grade English-speaking peers perform with 90% success. The student's CLI, then, is 66/15—indicating that he performed with 66% proficiency the oral language tasks in Spanish that he performed with only 15% proficiency in English (Schrank et al., 2017). In this case, the CLI suggests that cognitive testing should be conducted in Spanish. For more information regarding the use of the CLI, please refer to the *Woodcock-Johnson IV Tests of Oral Language Examiner's Manual* (Mather & Wendling, 2014).

Suspected Deficit in Oral Expression and/or Listening Comprehension

If an evaluator suspects that the referred student has a deficit in oral expression or listening comprehension, the evaluator should begin testing with the core WJ IV OL tests, Test 1: Picture Vocabulary, Test 2: Oral Comprehension, Test 3: Segmentation, and Test 4: Rapid Picture Naming. If the student performs below average on Picture Vocabulary (a measure of oral expression) and/or Oral Comprehension (a measure of listening comprehension), the evaluator should administer additional oral expression and/or listening comprehension tests to confirm whether the student has a weakness in these areas. If a weakness is identified in either area, the student should be referred to a speech-language pathologist for further in-depth language testing.

Oral Language and Achievement Testing Only

In some situations, an evaluator might not administer the WJ IV COG battery at all (for example, in RTI-only states or in instances where a special education teacher is the evaluator). In such cases, the evaluator should administer the core tests of the WJ IV OL and WJ IV ACH and analyze those results. The evaluator should then follow C-SEP procedures for selective testing.

Case Studies

The following three case studies illustrate the application of the C-SEP with the WJ IV COG, WJ IV OL, and WJ IV ACH batteries for three students—one in elementary school, one in middle school, and one in college. Each case study will demonstrate how the core tests of the WJ IV serve as sufficient norm-referenced data for a comprehensive report.[1]

Case Study 1: Andre, an Elementary School Student

The purpose of this example is to illustrate the application of the C-SEP with a student in elementary school. This example illustrates analysis of the WJ IV core test results, which the evaluator then used to determine whether additional selective testing was needed. A comprehensive list of all the informal and formal data the evaluator collected and used in the analysis is provided. A brief description of the reason for referral, the developmental history, and behavioral observations are provided prior to presenting the norm-referenced assessment data gathered from the WJ IV COG, WJ IV OL, and WJ IV ACH batteries. The presentation of data in this report follows the C-SEP steps. Obtained standard scores and RPIs are included in the case study, followed by recommendations.

[1] The three case studies are presented as reports similar to those that would be produced as part of a comprehensive evaluation. In the score tables within each report, clusters are presented in ALL CAPITAL LETTERS and tests in lowercase letters. Rows containing tests and clusters that are identified as areas of weakness in the report have been shaded gray for the benefit of the reader.

COMPREHENSIVE REPORT

Core-Selective Evaluation Process (C-SEP) Using the WJ IV

Name: Andre Noonan

Age: 10 years, 1 month

Grade: 4

Dates of Testing: 04/05/2017 (COG); 04/07/2017 (OL); 04/06/2017 (ACH Form A)

Reason for Referral

Andre was referred by the school's response-to-intervention (RTI) committee for an evaluation to determine whether he has a specific learning disability (SLD). Andre has a history of struggling with reading. He has received research-based interventions with the RTI program since the fall of third grade; however, weekly progress monitoring indicated that Andre was unresponsive to these interventions. This evaluation is intended to obtain a comprehensive profile of Andre's strengths and weaknesses in cognitive abilities, oral language, and achievement. Results will be used to determine whether Andre has a pattern of strengths and weaknesses that is indicative of an SLD. The Core-Selective Evaluation Process (C-SEP) will be used to collect, organize, and interpret Andre's assessment information.

Evaluation Data/Tests Administered

- Parent, teacher, and student checklists from the *WJ IV Interpretation and Instructional Interventions Program*™ (WIIIP®)
- RTI data (reading and writing curriculum-based measures [CBM]; progress-monitoring charts)
- Direct reading assessment
- District benchmarks (reading, writing, math)
- Classroom grades
- Review of records
- Work samples
- *Woodcock-Johnson IV Tests of Cognitive Abilities* (WJ IV COG)
- *Woodcock-Johnson IV Tests of Oral Language* (WJ IV OL)
- *Woodcock-Johnson IV Tests of Achievement* (WJ IV ACH), Form A

Background Information

Parents' Report

To obtain thorough information regarding Andre's development and functioning, Andre's parents completed a questionnaire on February 15, 2017. Andre lives with both of his parents and his 7-year-old brother. There have been no significant recent changes in his family life.

Andre is usually in good health and is physically fit. His parents reported that Andre's vision and hearing are within normal limits. At night, he typically sleeps soundly for 8 hours. Andre's father struggled with reading and spelling throughout school.

During pregnancy, Andre's mother had no significant health problems. Andre was a full-term baby with normal delivery. Andre's mother remembers him being a colicky infant and toddler. His early motor skills, such as sitting up, crawling, and learning to walk, developed normally. His early language skills, such as speaking his first words, asking simple questions, and talking in sentences, developed earlier than those of other children his age.

According to Andre's parents, he never attended formal preschool but attended an in-home childcare center. He had social interaction, but there was limited focus on academics. When he started kindergarten, he seemed to learn things later, or with more difficulty, than other children. His social skills developed at about the same rate as other children's.

Both parents reported that Andre loves superheroes and can orally describe the features and powers of nearly all of them. He likes to role play and pretend he is Batman. He loves the Dallas Cowboys and will often sit with his dad on Sundays to watch the games. They reported that he's also very good at solving matrix puzzles and building elaborate structures with building blocks. His parents are concerned that he has always showed very little interest in reading. They indicated that he has struggled learning letter sounds and developing early reading skills.

Andre usually attends to details, concentrates while working, maintains attention during tasks and play activities, appears to listen when spoken to directly, and organizes personal tasks and activities similarly to other boys his age. His parents reported that when provided directions, Andre often stares for an extended time before responding. He also often asks questions and then appears to forget the answers. He often avoids, dislikes, or is reluctant to engage in difficult tasks. Homework involving reading has always been a source of great frustration for Andre and his parents. His parents report uncooperative behavior (related to homework involving reading) and anxiousness (regarding school and reading).

Teacher's Report

Mr. Zuma, Andre's teacher, responded to a checklist on March 20, 2017, to provide information based on recent direct observations of Andre's attitude and behaviors around academics.

Mr. Zuma described Andre as intelligent and serious. At school, his mood is typical of others his age, with normal variations. He needs more one-on-one attention and completes less schoolwork than most students his age.

Andre usually attends to details in schoolwork and concentrates while working. He generally persists with difficult tasks. He usually maintains attention during tasks and play activities, listens when spoken to directly, and organizes his tasks and activities. Andre's oral responses to questions are slow and careful. He reacts normally to distractions and adapts to them. Two reported behaviors that affect school performance for Andre are not following through on instructions and failing to finish his homework. Mr. Zuma reported that Andre often needs more time to process information and seems to forget information, often asking questions multiple times. Andre's social interaction skills were described as typical for his age.

Mr. Zuma rated Andre's level of oral language ability and academic achievement based on classroom observations. Mr. Zuma rated his levels of oral language and math reasoning within the advanced range of others at his grade placement. He rated Andre's levels of listening comprehension, math calculation, reading comprehension, and basic writing skills as average to low average. He rated Andre's levels of basic reading skills and reading fluency as limited.

RTI Data

As a result of his continued struggling with reading, Andre was referred to the RTI committee at the beginning of third grade. Universal screener data served as *baseline data* and was collected using CBMs for reading fluency and comprehension. Andre's baseline data were as follows:

Beginning Third Grade (Fall):

- Reading Fluency CBM: 50 words read correctly (WRC)
  - Compared to same-grade peers, Andre's performance fell at the 27th percentile.
- Reading Comprehension CBM (MAZE): 6 words correct
  - Compared to same-grade peers, Andre's performance fell below the 16th percentile.

Andre received Tier II interventions in a small-group setting. In addition to general education core instruction, Andre received the following evidence-based interventions for 6 weeks, 3 times per week for 45 minutes:

- *READ 180®*
- Peer-Assisted Learning Strategies

Weekly progress monitoring indicated that Andre's growth in reading fluency and reading comprehension was extremely limited.

Tier II 6-Week Progress-Monitoring Results:

- Reading Fluency CBM: 51 WRC
- Reading Comprehension CBM (MAZE): 7 words correct

After 6 weeks of Tier II interventions with limited growth, Andre was referred to Tier III interventions. During Tier III, Andre received one-on-one reading interventions with weekly progress monitoring. The following evidence-based interventions were conducted for 6 weeks, 5 times per week for 30 minutes:

- Repeated readings (reading fluency)
- Ask-read-tell strategy (reading comprehension)
- Oral-written retell (reading fluency and reading comprehension)

Tier III 6-Week Progress-Monitoring Results:

- Reading Fluency CBM: 52 WRC
- Reading Comprehension CBM (MAZE): 6 words correct

After 6 weeks of Tier III interventions, Andre's reading performance did not show improvement. Consequently, Andre was referred for a comprehensive evaluation to determine whether he has an SLD that would require special education.

Test Session Observations

Andre came willingly into the testing situation with great enthusiasm and interest. Rapport was established easily. Andre's conversational proficiency seemed very advanced for his age. He engaged in appropriate conversation with the examiner around his favorite topic, superheroes. He was cooperative throughout the examination, and his activity level seemed typical for his age. He appeared confident, self-assured, and unusually absorbed in the tasks throughout the examination. He responded promptly but carefully to test questions, generally persisting with difficult tasks but at times appearing tense and worried (especially during reading and writing testing). When asked to list his favorite academic subjects, he quickly named math. Andre reported that reading and writing are his least favorite subjects.

Classroom Observations

Andre was observed during reading class. The class was engaged in the peer-assisted learning strategy (PALS) in which each student is paired with a classmate for a series of reading activities that included basic reading, fluency, and comprehension practice. Andre and his partner were situated in the back corner of the room. They took turns reading passages and answering questions verbally. When Andre was observed reading aloud, his reading was slow and often laborious. He often stopped to sound out longer words. Many times, the sounds he associated with the letters were incorrect (e.g., he used a short /a/ sound when sounding out *plate*.) When his partner asked comprehension questions about the passage he read, Andre was observably uncomfortable. Often, he would sit for seconds with a blank stare. He would also flip around his paper containing the reading passage, appearing to be searching for the answer. On the day of the observation, he correctly answered five out of the ten comprehension questions. It was apparent that Andre struggled with basic reading skills, reading fluency, and reading comprehension.

Core Psychological Processes

WJ IV Tests of Cognitive Abilities Core Tests

The seven core tests of the WJ IV COG were administered to obtain information regarding Andre's cognitive profile. Results from these tests were used to determine areas of cognitive strengths and weaknesses. Additionally, results obtained on these seven core tests were used to identify areas in which additional, selective cognitive testing was required. Andre's performance on these seven core tests ranged from low to very superior. Results are presented below.

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
GENERAL INTELLECTUAL ABILITY (GIA)	99 (95–102)	AVERAGE	89/90	AVERAGE
Oral Vocabulary (*Gc*)	133 (127–139)	Very Superior	99/90	Advanced
Number Series (*Gf*)	105 (100–111)	Average	94/90	Average
Verbal Attention (*Gwm*)	112 (106–119)	High Average	97/90	Average to Advanced
Letter-Pattern Matching (*Gs*)	77 (70–84)	Low	13/90	Very Limited
Phonological Processing (*Ga*)	77 (72–83)	Low	60/90	Limited
Story Recall (*Glr*)	82 (76–89)	Low Average	73/90	Limited
Visualization (*Gv*)	106 (101–112)	Average	94/90	Average

Areas of Average and Above-Average Cognitive Abilities

Andre's performance indicated intact cognitive abilities in the areas of comprehension-knowledge (*Gc*), fluid reasoning (*Gf*), short-term working memory (*Gwm*), and visual processing (*Gv*). Andre's average to very superior performance on these tests indicates that no further testing was required in these areas.

Oral Vocabulary

This test is made up of two subtests, Synonyms (words with the same definition) and Antonyms (words with opposite definitions), which measured the breadth of Andre's vocabulary knowledge. This test measures comprehension-knowledge (*Gc*), or obtained knowledge and vocabulary ability. Compared to his peers, he obtained a standard score (SS) of 133, which is in the very superior range. Andre's relative proficiency index (RPI) score of 99/90 indicates that he will find grade-level tasks similar to those on the Oral Vocabulary test very easy. Andre's score on the Oral Vocabulary

test indicates a strength in acquired knowledge and vocabulary. Therefore, no further testing was required in this area.

Number Series

This test is a measure of quantitative reasoning, a narrow measure of fluid reasoning (*Gf*). Fluid reasoning is the ability to use prior knowledge to solve new problems, reason, or form new concepts. In this test, Andre was presented with a series of numbers where one number was missing, such as "9, 10, 11, __." Andre obtained a standard score of 105, which is within the average range compared to his peers. His RPI of 94/90 indicates that he performed with 94% (average) proficiency on tasks his same-age peers perform with 90% proficiency. These results indicate intact fluid reasoning abilities.

Verbal Attention

Verbal Attention is a narrow measure of verbal working memory within the short-term working memory (*Gwm*) ability. Short-term working memory tests measure the ability to attend to information, hold the information in immediate awareness, and then perform a mental operation on the information. During this test, Andre listened to series of words containing animal names and digits intermingled. Then Andre was asked a specific question about the series of words. For example, the series might be "7…dog…9," and Andre would be asked to repeat the word that comes between 7 and 9. Andre's standard score of 112 falls within the high average ability range compared to his peers. His RPI of 97/90 indicates average to advanced proficiency on the task. Andre maintained attentional control, held new verbal material in the short term, manipulated verbal stimuli, and provided an appropriate response; no additional tests in the area of short-term working memory were required.

Visualization

This test is a measure of visual processing (*Gv*) ability, which is the ability to perceive, analyze, synthesize, and think with visual patterns, including the ability to store and correctly identify visual images from memory. It has two parts. The first, Spatial Relations, required Andre to identify, from a series of shapes, the pieces needed to form a whole shape. The second, Block Rotation, required him to identify the two block figures that match the target figure. Andre obtained a standard score of 106 and an RPI of 94/90, both of which fall within the average range compared to his peers. Andre adequately completed tasks requiring complex spatial relations, indicating intact visual processing (*Gv*) and visualization skills. Therefore, no additional tests were administered in the area of visual processing.

Areas of Below-Average Cognitive Abilities

Andre's performance indicated low to low average cognitive abilities in the following areas: cognitive processing speed (*Gs*), auditory processing (*Ga*), and long-term storage and retrieval (*Glr*). These areas required additional testing to further investigate and better understand his weaknesses.

Letter-Pattern Matching

Andre had great difficulty on Letter-Pattern Matching, a perceptual speed task measuring the narrow ability of cognitive processing speed (*Gs*). On this test, Andre was asked to locate and circle the two identical letter patterns in a row of six patterns. This task relates to the area of cognitive efficiency, or the speed at which Andre can make visual symbol discriminations and identify common orthographic (spelling) patterns. Andre obtained a standard score of 77, which falls within the low range compared to his peers. He obtained an RPI of 13/90, indicating very limited proficiency.

Because of Andre's low performance on the Letter-Pattern Matching test, he was administered the WJ IV Pair Cancellation test to more fully evaluate the cognitive processing speed weakness. Results are presented below in the section entitled "Selective Testing With the WJ IV Tests of Cognitive Abilities."

Phonological Processing

This test is a measure of Andre's auditory processing (*Ga*) ability, or his ability to analyze, synthesize, and discriminate auditory stimuli and perceive and manipulate speech sounds. It includes three subtests that measure various aspects of phonological processing. In this test, Andre was asked to (a) name a word that has a specific sound in a specific location, (b) name as many items that start with a certain sound in 1 minute as he could, and (c) substitute one sound in a word with another sound to create a new word. Compared to his peers, Andre scored within the low range on Phonological Processing (SS = 77). His proficiency is limited; when average peers would have 90% proficiency on phonological processing tasks, Andre would have only 60% proficiency.

Because of Andre's low performance on the Phonological Processing test, he was administered the WJ IV Nonword Repetition test to more fully evaluate his auditory processing weakness. Results are presented below in the section entitled "Selective Testing With the WJ IV Tests of Cognitive Abilities."

Story Recall

This test is a measure of Andre's long-term retrieval ability (*Glr*), or his ability to learn information and then recall it. In this test, Andre listened to a passage and then was asked to recall the story elements. Compared to his peers, Andre scored in the low average range (SS = 82) on this test. When average peers would have 90% proficiency on story recall tasks, Andre would have 73% (limited) proficiency.

Because of Andre's low performance on the Story Recall test, he was administered the WJ IV Visual-Auditory Learning test to more fully evaluate his long-term storage and retrieval weakness. Results are presented below in the section entitled "Selective Testing With the WJ IV Tests of Cognitive Abilities."

Selective Testing With the WJ IV Tests of Cognitive Abilities

C-SEP calls for further testing to more fully evaluate Andre's relative weaknesses in the areas of cognitive processing speed (*Gs*), auditory processing (*Ga*), and long-term retrieval (*Glr*). Andre was administered the following additional WJ IV tests: Pair Cancellation, Nonword Repetition, and Visual-Auditory Learning. The addition of these tests to the core tests already administered forms three two-test clusters representing the *Gs*, *Ga*, and *Glr* areas of cognitive functioning, respectively. These multiple-test clusters allow more valid and reliable interpretation of Andre's abilities. Results of the additional selective testing appear in this section.

Cognitive Processing Speed (*Gs*)

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
COGNITIVE PROCESSING SPEED (*Gs*)	78 (72–84)	LOW	17/90	VERY LIMITED
Letter-Pattern Matching	77 (70–84)	Low	13/90	Very Limited
Pair Cancellation	72 (66–78)	Low	14/90	Very Limited

Andre's weakness in processing speed was confirmed through the administration of the Pair Cancellation test (SS = 72). This test measured Andre's ability to find and circle patterns of pictures. Together, the Letter-Pattern Matching and Pair Cancellation tests compose the Cognitive Processing Speed (*Gs*) cluster. Compared to his peers, Andre performed in the low range (SS = 78) on this cluster. When average peers would have 90% proficiency on processing speed tasks, Andre would have only 17% (very limited) proficiency. He struggles with simple clerical tasks that use symbols, such as matching letters or numbers.

Auditory Processing (*Ga*)

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
AUDITORY PROCESSING (*Ga*)	68 (64–72)	VERY LOW	43/90	LIMITED
Phonological Processing	77 (72–83)	Low	60/90	Limited
Nonword Repetition	71 (67–76)	Low	28/90	Limited

Andre was administered an additional test of auditory processing, Nonword Repetition (SS = 71). This additional test measured his ability to hear and then repeat phonically regular nonsense words. The Phonological Processing and Nonword Repetition tests together form the Auditory Processing (*Ga*) cluster. Compared to his peers, Andre scored in the very low range (SS = 68) on the Auditory Processing cluster. When average peers would have 90% proficiency on auditory processing tasks, Andre would have 43% (limited) proficiency. This additional evidence shows that Andre's ability to analyze, synthesize, and discriminate auditory stimuli and perceive and manipulate speech sounds is a relative weakness.

Long-Term Retrieval (*Glr*)

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
LONG-TERM RETRIEVAL (*Glr*)	75 (71–79)	LOW	67/90	LIMITED
Story Recall	82 (76–89)	Low Average	73/90	Limited
Visual-Auditory Learning	77 (74–80)	Low	60/90	Limited

Andre was administered the Visual-Auditory Learning test, which measured his ability to learn, store, and retrieve visual stimuli. His standard score on Visual-Auditory Learning was 77 (low). The Story Recall and Visual-Auditory Learning tests together compose the Long-Term Retrieval (*Glr*) cluster. Compared to his peers, Andre's score was in the low range on this cluster (SS = 75). When average peers would have 90% proficiency on long-term retrieval tasks, Andre would have 67% (limited) proficiency. This additional evidence shows that Andre's ability to learn, store, and retrieve visual stimuli is a relative cognitive weakness.

Analysis of the GIA and the *Gf-Gc* Composite

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
Gf-Gc COMPOSITE	118 (115–122)	HIGH AVERAGE	97/90	AVERAGE TO ADVANCED
COMPREHENSION-KNOWLEDGE (*Gc*)	127 (123–131)	SUPERIOR	99/90	ADVANCED
Oral Vocabulary	133 (127–139)	Very Superior	99/90	Advanced
General Information	122 (117–128)	Superior	99/90	Advanced
FLUID REASONING (*Gf*)	104 (99–108)	AVERAGE	93/90	AVERAGE
Number Series	105 (100–111)	Average	94/90	Average
Concept Formation	101 (96–107)	Average	91/90	Average

The General Intellectual Ability (GIA) score is a composite measure of cognitive ability derived from the seven WJ IV COG core tests. Compared to his peers, Andre's GIA score was in the average range (SS = 99), as shown in the first table of this report. The individual test scores comprising his GIA score range from low to very superior. The GIA may not be the most accurate representation of his overall cognitive ability, however, because it includes weaknesses in several lower-level processing areas (phonological processing, processing speed, and long-term retrieval); for this reason, it should be interpreted with caution.

Alternatively, the *Gf-Gc* Composite is a better indicator of Andre's intellectual functioning because it is a measure of higher-level cognitive abilities, including reasoning and language. The *Gf-Gc* Composite comprises two tests of comprehension-knowledge (*Gc*) and two tests of fluid reasoning (*Gf*). To obtain the *Gf-Gc* Composite score, Andre was administered the General Information (*Gc*) and Concept Formation (*Gf*) tests. His standard scores on these two tests were 122 and 101, respectively, suggesting performance in the average to superior range. Andre's *Gf-Gc* Composite score falls within the high average range (SS = 118).

Core Oral Language Abilities

WJ IV Tests of Oral Language Core Tests

When determining whether an SLD exists, it is important to obtain information regarding oral language skills. Language is the mediator between cognition and achievement and is a key component of the SLD definition. Andre was administered the core tests from the WJ IV OL to examine his ability to express his ideas orally and comprehend orally presented material. His Oral Language cluster score (SS = 114), composed of the Picture Vocabulary and Oral Comprehension tests, was in the high average range. Results for all tests administered are presented below.

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
ORAL LANGUAGE	114 (108–119)	HIGH AVERAGE	96/90	AVERAGE TO ADVANCED
Picture Vocabulary	119 (113–125)	High Average	98/90	Advanced
Oral Comprehension	104 (98–111)	Average	93/90	Average
Segmentation	79 (75–84)	Low	34/90	Limited
Rapid Picture Naming	72 (66–78)	Low	14/90	Very Limited

Areas of Average and Above-Average Oral Language Abilities

Andre's performance on the Picture Vocabulary and Oral Comprehension tests indicated intact oral language abilities. These tests are both measures of comprehension-knowledge (*Gc*) and further support the findings from the cognitive testing that this is an area of strength for Andre.

Picture Vocabulary

This test, a measure of oral expression, required Andre to name vocabulary words that were presented in picture format. Andre scored in the high average range when compared to other students his age (SS = 119). When average peers would have 90% proficiency on picture vocabulary tasks, Andre would have 98% (advanced) proficiency. Andre performed adequately on this test, so no additional tests in the area of oral expression were required.

Oral Comprehension

This test is a measure of listening comprehension, or Andre's ability to understand information that he hears. Andre's score falls in the average range when compared to other students his age (SS = 104). When average peers would have 90% proficiency on listening comprehension tasks, Andre would have 93% (average) proficiency. Andre performed adequately on this test, so no additional tests in the area of listening comprehension were required.

Areas of Below-Average Oral Language Abilities

Andre's performance on the Segmentation and Rapid Picture Naming tests indicates low oral language abilities in the auditory processing and processing speed areas and supports weaknesses identified within his cognitive profile. Additional testing in these areas will help to better understand these weaknesses.

Segmentation

Segmentation is a measure of phonological awareness. In this test, Andre was required to break apart the sounds in words by syllables and phonemes. Compared to his peers, he scored in the low range on Segmentation (SS = 79). When average peers would have 90% proficiency on segmentation tasks, Andre would have 34% (limited) proficiency.

Because of Andre's low performance on the Segmentation test, he was administered the WJ IV Sound Blending test to more fully evaluate his phonetic coding weakness. Results are presented below in the section entitled "Selective Testing With the WJ IV Tests of Oral Language."

Rapid Picture Naming

This test required Andre to name pictures quickly under time constraints. It is a measure of Andre's ability to sustain attention while processing and naming symbols. Compared to his peers, Andre scored in the low range on Rapid Picture Naming (SS = 72). When average peers would have 90% proficiency on rapid picture naming tasks, Andre would have 14% (very limited) proficiency.

Because of Andre's low performance on the Rapid Picture Naming test, he was administered the WJ IV OL Retrieval Fluency test to more fully evaluate the weakness in his speed of lexical access. Results are presented below in the section entitled "Selective Testing With the WJ IV Tests of Oral Language."

Selective Testing With the WJ IV Tests of Oral Language

C-SEP calls for further testing to more fully evaluate Andre's relative weaknesses in the areas of auditory processing (*Ga*) and processing speed (*Gc*). Andre was administered the Sound Blending and Retrieval Fluency tests from the WJ IV OL battery. The addition of these tests to the core tests already administered forms the two-test Phonetic Coding (*Ga*) and Speed of Lexical Access (*Glr*/*Gc*/*Gs*) clusters. These multiple-test clusters allow more valid and reliable interpretation of Andre's abilities.

Phonetic Coding (*Ga*)

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
PHONETIC CODING	73 (68–77)	LOW	36/90	LIMITED
Segmentation	79 (75–84)	Low	34/90	Limited
Sound Blending	75 (69–80)	Low	37/90	Limited

Andre was administered the Sound Blending test, which required him to listen to the phonemes of words and then blend the sounds together to identify the word. Compared to his peers, Andre performed in the low range on this test, with a standard score of 75. When average peers would have 90% proficiency on sound blending tasks, Andre would be only 37% proficient. The Sound Blending test and the Segmentation test together compose the Phonetic Coding cluster. On Phonetic Coding, Andre's standard score of 73 was in the low range compared to his peers. Results of this additional testing confirmed Andre's weakness in phonological awareness.

Speed of Lexical Access (*Glr*/*Gc*/*Gs*)

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
SPEED OF LEXICAL ACCESS	66 (60–72)	VERY LOW	28/90	LIMITED
Rapid Picture Naming	72 (66–78)	Low	14/90	Very Limited
Retrieval Fluency	69 (61–76)	Very Low	49/90	Limited

To further explore his relative weakness in the processing speed component of oral language, Andre was administered the Retrieval Fluency test. In this test, Andre was asked to list as many things as he could for the following prompts, each with a 1-minute time limit: (a) foods, (b) people's names, and (c) animals. Compared to his peers, Andre performed in the very low range on this test, with a standard score of 69. When average peers would have 90% proficiency on retrieval fluency tasks, Andre would have 49% (limited) proficiency. The combination of Retrieval Fluency and Rapid Picture Naming forms the Speed of Lexical Access cluster. On Speed of Lexical Access, Andre's standard score (66) falls in the very low range compared to his peers. This additional testing confirmed Andre's weakness in the speed at which he processes oral language.

Core Achievement

WJ IV Tests of Achievement Core Tests

When determining whether a specific learning disability exists, it is important to consider information regarding achievement skills. Andre was administered the core tests from the WJ IV ACH, which includes measures of reading, writing, math, and academic knowledge. Compared to his peers, Andre's Brief Achievement standard score falls within the low range (SS = 79). The Brief Achievement cluster is an overall measure of academic ability composed of one test each of reading (Letter-Word Identification), mathematics (Applied Problems), and writing (Spelling) skills. When average peers would have 90% proficiency on basic academic skills, Andre would have only 29% (limited) proficiency.

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
BRIEF ACHIEVEMENT	79 (77–82)	LOW	29/90	LIMITED
Letter-Word Identification	69 (66–72)	Very Low	3/90	Extremely Limited
Spelling	69 (65–73)	Very Low	6/90	Very Limited
Applied Problems	112 (107–117)	High Average	97/90	Average to Advanced
Calculation	109 (104–113)	Average	96/90	Average to Advanced
Passage Comprehension	88 (84–93)	Low Average	67/90	Limited
Writing Samples	104 (99–109)	Average	93/90	Average

Areas of Average and Above-Average Achievement

Applied Problems

This test measured Andre's math problem solving skills and his ability to analyze and solve word problems. He was required to listen to and read a problem, recognize the math procedure that must be followed, and then perform the appropriate calculations. Compared to his peers, Andre scored in the high average range on Applied Problems (SS = 112). When average peers would have 90% proficiency on applied problem tasks, Andre would have 97% (average to advanced) proficiency. Because Andre performed adequately on this test, no additional tests of math problem solving were required.

Calculation

This test, a measure of math calculation skills, assessed Andre's procedural math knowledge and skills in performing paper-and-pencil math computations. Compared to his peers, Andre scored in the average range (SS = 109) on Calculation. When average peers would have 90% proficiency on calculation tasks, Andre would have 96% (average to advanced) proficiency. Because Andre performed adequately on this test, no additional tests of math calculation skills were required.

Writing Samples

On this test, a measure of written expression, Andre was asked to write sentences based on various prompts. Compared to his peers, Andre scored in the average range (SS = 104) on Writing Samples. When average peers would have 90% proficiency on writing tasks, Andre would have 93% (average) proficiency. Because Andre performed adequately on this test, no additional tests of written expression were required.

Areas of Below-Average Achievement

Letter-Word Identification

This test is a measure of basic reading skills. It required Andre to decode and read real words that gradually increase in difficulty. Andre scored in the very low range when compared to peers on Letter-Word Identification (SS = 69). When average peers would have 90% proficiency reading words, Andre would have only 3% (extremely limited) proficiency.

Because of Andre's history of reading difficulties and low performance on this test, he was administered the WJ IV Word Attack test to more fully evaluate his weakness with basic reading skills. Results are presented below in the section entitled "Selective Testing With the WJ IV Tests of Achievement."

Passage Comprehension

This test is a measure of reading comprehension. It assessed Andre's understanding of written text. Most of the test items required him to supply a missing word to complete sentences and paragraphs of increasing complexity. Compared to his peers, Andre performed in the low average range (SS = 88) on this test. He provided the correct responses on the shorter passages but experienced difficulty with the longer ones. When average peers would have 90% proficiency on passage comprehension tasks, Andre would have 67% (limited) proficiency.

Because of Andre's history of reading difficulties and low performance on this test, he was administered the WJ IV Reading Recall test to more fully evaluate his reading comprehension weakness. Results are presented below in the section entitled "Selective Testing With the WJ IV Tests of Achievement."

Spelling

This test required Andre to spell orally dictated words. Compared to his peers, Andre scored in the very low range on the Spelling test (SS = 69). When average peers would have 90% proficiency on spelling tasks, Andre would have only 6% (very limited) proficiency.

To more fully understand Andre's weakness in spelling, it is useful to consider his performance on multiple measures of written language. Although both tests are measures of his written language, Andre scored much higher on the Writing Samples test than on the Spelling test. This is likely because spelling errors are not penalized on the Writing Samples test. Together, the Spelling and Writing Samples tests compose the Written Language cluster (see table below). Although Andre scored in the low average range on this cluster (SS = 84), it is useful to consider the tasks required for each test when interpreting the cluster score; Andre's written language skills appear much lower when accurate spelling is required.

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
WRITTEN LANGUAGE	84 (81–87)	LOW AVERAGE	49/90	LIMITED
Spelling	69 (65–73)	Very Low	6/90	Very Limited
Writing Samples	104 (99–109)	Average	93/90	Average

Selective Testing With the WJ IV Tests of Achievement

C-SEP calls for further testing to more fully evaluate Andre's relative weaknesses in the areas of basic reading skills and reading comprehension. He was administered one additional test in each of those areas, respectively: Word Attack and Reading Recall. In addition, because Andre has a history of reading difficulties, he was administered two reading fluency tests as part of a comprehensive reading evaluation: Oral Reading and Sentence Reading Fluency. The results of the additional reading tests are presented below, organized by skill clusters, and support the findings from the core WJ IV ACH testing that Andre has weaknesses in his reading abilities.

Basic Reading Skills

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
BASIC READING SKILLS	71 (68–74)	LOW	11/90	VERY LIMITED
Letter-Word Identification	69 (66–72)	Very Low	3/90	Extremely Limited
Word Attack	76 (71–81)	Low	34/90	Limited

Andre was administered the Word Attack test, which required him to read phonically regular nonsense words. His score on this test was in the low range (SS = 76). The Letter-Word Identification and Word Attack tests together compose the Basic Reading Skills cluster. Compared to his peers, Andre performed in the low range on Basic Reading Skills, with a standard score of 71. When average peers would have 90% proficiency on basic reading tasks, Andre would have 11% (very limited) proficiency. His performance on this cluster confirms his weakness in basic reading skills.

Reading Comprehension

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
READING COMPREHENSION	76 (71–79)	LOW	10/90	VERY LIMITED
Passage Comprehension	88 (84–93)	Low Average	67/90	Limited
Reading Recall	75 (70–80)	Low	52/90	Limited

Andre was administered the Reading Recall test, which required him to listen to a short story and then recall the components of the story. Compared to his peers, Andre performed in the low range on this test (SS = 75). The Passage Comprehension and Reading Recall tests together compose the Reading Comprehension cluster. Andre's Reading Comprehension score falls within the low range (SS = 76). When average peers would have 90% proficiency on reading comprehension tasks, Andre would have 10% (very limited) proficiency. His performance on this cluster demonstrates his weakness in reading comprehension skills.

Reading Fluency

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
READING FLUENCY	65 (62–69)	VERY LOW	1/90	EXTREMELY LIMITED
Oral Reading	66 (62–70)	Very Low	9/90	Very Limited
Sentence Reading Fluency	70 (65–74)	Low	0/90	Extremely Limited

In response to the relative weaknesses in reading skills that were identified from the core tests administered, Andre was administered some additional tests to evaluate his reading fluency skills. The Oral Reading test measured Andre's skills in smoothly and proficiently reading passages aloud. Compared to his peers, he scored in the very low range on Oral Reading (SS = 66). The Sentence Reading Fluency test measured his skill in reading simple sentences quickly within a 3-minute time limit. Andre scored in the low range on this test (SS = 70) compared to his peers. The Oral Reading and Sentence Reading Fluency tests together form the Reading Fluency cluster. Compared to his peers, Andre performed in the very low range on this cluster, with a standard score of 65. When average peers would have 90% proficiency on reading fluency tasks, Andre would have only 1% (extremely limited) proficiency. His performance on this cluster demonstrates his slow reading speed.

The results of the WJ IV ACH core and selective testing revealed that Andre has relative weaknesses in the areas of basic reading skills, reading fluency, and reading comprehension. In written language, although Andre can write simple sentences, he exhibits difficulty in spelling.

Integrated Interpretation

All the data collected for Andre's evaluation were analyzed and interpreted to establish a profile. Background information from Andre's parents, interview information from Andre, classroom observation and teacher feedback, grades, state testing data, observation data collected during testing, RTI data, and results of individual standardized testing were used to establish a pattern of strengths and weaknesses in cognitive abilities, oral language, and achievement.

Consideration of Exclusionary Factors

Considerations of the exclusionary factors are required by the federal regulations of the Individuals with Disabilities Education Improvement Act of 2004 (IDEA, 2004) before a diagnosis of an SLD can be made. A review of possible exclusionary factors was conducted as part of Andre's evaluation. The results of that review appear below.

Exclusionary Factors	Documentation or Source of Data	Primary Cause of Academic Difficulties?
Visual, hearing, or motor	Information from parent(s) and teacher(s) Nurse screening Review of educational records	No
Limited English proficiency	Home Language Survey Information from parent(s) and teacher(s) WJ IV OL results	No
Intellectual disability	WJ IV COG results Informal adaptive behavior assessment Information from parent(s) and teacher(s)	No
Emotional disturbance	Information from parent(s) and teacher(s) Review of records Classroom observation	No
Cultural differences or economic disadvantage	Information from parent(s) and teacher(s) Review of records Classroom observation	No
Inadequate instruction	RTI data Review of records Information from parent(s) and teacher(s)	No

Based on a thorough review of Andre's health history obtained from information from his parents, the health screening conducted by the school nurse, and a review of records, Andre does not have visual, hearing, or motor impairments. Additionally, he does not have a history of any type of health issue that might impact his learning.

The Home Language Survey indicates that English is Andre's first and only language; therefore, there are no concerns that limited English language proficiency may be contributing to his academic weaknesses.

Testing data and information obtained from Andre's parents and teacher confirms that Andre has average intellectual functioning and adaptive behaviors. Consequently, an intellectual disability has been ruled out.

According to information obtained through a thorough review of records and information provided by Andre's parents and teachers, there are no behavioral issues or problems with social interactions. A classroom observation conducted by the evaluator corroborated that Andre's behavior and social interactions were appropriate. Consequently, an emotional disturbance has been ruled out.

There were no reported cultural differences or environmental or economic disadvantages reported by Andre's parents or school personnel. Therefore, cultural differences and economic disadvantages have been ruled out as a primary cause of Andre's academic difficulties.

Finally, a review of educational records, information obtained from Andre's parents and teachers, and RTI data indicated that Andre has received adequate instruction in reading and mathematics. A review of attendance records indicates Andre has had almost perfect attendance each year since kindergarten. Therefore, a lack of educational opportunity has been ruled out as a primary cause of Andre's academic difficulties.

Patterns of Strengths and Weaknesses

Andre's cognitive, oral language, and achievement profile clearly shows a pattern of strengths and weaknesses.

Profile Areas Showing Strengths

Results of the data collected indicate that Andre exhibits cognitive strengths in the area of comprehension-knowledge (*Gc*). Andre's performance in the area of *Gc* was in the superior range when compared to other students his age (SS = 127). His performance on the cognitive tests that assessed *Gc* was in the superior (General Information; SS = 122) and very superior (Oral Vocabulary; SS = 133) ranges. RPIs for both tests were 99/90, indicating advanced proficiency. Additionally, Andre scored in the high average range on the Applied Problems test (SS = 112). He scored at average to advanced proficiency with an RPI of 97/90.

These standardized test results were further supported with information provided by Andre (student interview), his parents (background information), and teachers (work samples, interview, grades).

Profile Areas Showing Average Performance

Analysis of the data indicates that Andre's performance is within the average range in the following cognitive areas: fluid reasoning (*Gf*), short-term working memory (*Gwm*), and visual processing (*Gv*).

In the area of achievement, Andre scored within the average range on the Writing Samples test. He wrote meaningful sentences in response to specific instructions when accurate spelling was not required. He also scored in the average range on the Calculation test.

Profile Areas Showing Weaknesses

Data analysis indicates that Andre exhibits cognitive weaknesses in the areas of processing speed (*Gs*), auditory processing (*Ga*), and long-term retrieval (*Glr*). Performance on the WJ IV OL tests supported the weakness in the areas of *Ga* and *Gs*.

On the WJ IV ACH tests, Andre exhibited weaknesses in the areas of basic reading skills, reading comprehension, reading fluency, and spelling.

Multiple data sources were also considered and integrated to determine whether a pattern of strengths and weaknesses exists in Andre's cognitive and academic profile. Again, standardized test results were further supported through information provided by Andre (student interview), his parents (background information), and teachers (work samples, interview, RTI data, and grades). The triangulation of data collected over time supports a pattern of weaknesses over Andre's school history. Multiple sources of data are listed in the table below that support the pattern of weaknesses in Andre's cognitive and academic abilities.

Cognitive Weakness	Data Sources	Relevant Achievement Weakness	Data Sources
Auditory processing (*Ga*)	Parent information Teacher information Classroom observation WJ IV COG Test 5: Phonological Processing WJ IV COG Test 12: Nonword Repetition WJ IV OL Test 3: Segmentation WJ IV OL Test 7: Sound Blending Review of school records	Basic reading skills	CBM letter-word measures Classroom oral reading assignments PALS data Reading benchmarks Grades WJ IV ACH Test 1: Letter-Word Identification WJ IV ACH Test 7: Word Attack Review of school records
Long-term retrieval (*Glr*)	Parent information Teacher information Classroom observation WJ IV COG Test 6: Story Recall WJ IV COG Test 13: Visual-Auditory Learning *READ 180* data WJ IV ACH Test 4: Passage Comprehension WJ IV ACH Test 12: Reading Recall Ask-read-tell strategy data Reading grades Review of school records	Reading comprehension	CBM reading comprehension measures Classroom oral reading assignments Ask-read-tell strategy data PALS data Reading benchmarks State reading test *READ 180* data Grades WJ IV ACH Test 4: Passage Comprehension WJ IV ACH Test 12: Reading Recall Review of school records
Processing speed (*Gs*)	CBM reading fluency measures In-class oral reading opportunities Parent information Teacher information Classroom observation WJ IV COG Test 4: Letter-Pattern Matching WJ IV COG Test 17: Pair Cancellation WJ IV OL Test 4: Rapid Picture Naming WJ IV OL Test 8: Retrieval Fluency Review of school records	Reading fluency	CBM reading fluency measures Direct reading inventory (DRI) Repeated readings *READ 180* data WJ IV COG Test 4: Letter-Pattern Matching WJ IV COG Test 17: Pair Cancellation WJ IV OL Test 4: Rapid Picture Naming WJ IV OL Test 8: Retrieval Fluency WJ IV ACH Test 9: Sentence Reading Fluency WJ IV ACH Test 8: Oral Reading Reading grades Reading benchmarks State reading test Review of school records

Implications

Based on an analysis of Andre's scores from the WJ IV COG, WJ IV ACH, and WJ IV OL tests and clusters, along with multiple other forms of data, the following relationships can be drawn between his cognitive strengths and weaknesses and his academic achievement:

- A relationship exists between Andre's strengths in fluid reasoning (*Gf*) and his strength on calculation and math problem solving tasks.
- A relationship exists between Andre's weakness in auditory processing (*Ga*) and his low performance on basic reading skills and spelling.
- A relationship exists between Andre's weakness in long-term retrieval (*Glr*) and his low performance in reading comprehension.
- Finally, a relationship exists between Andre's weakness in processing speed (*Gs*) and his weakness in reading fluency.

Eligibility Statement

Based on a variety of data collected and the pattern of strengths and weaknesses established through the C-SEP, Andre meets criteria for a specific learning disability in the areas of basic reading skills, reading comprehension, and reading fluency.

Instructional Recommendations

- Andre may benefit most from reading instruction presented within the late-first grade to early-second grade range. Reading interventions should be *explicit* (direct instruction techniques are recommended) and *intense* (a concentrated number of related learning opportunities should be provided), with delivery occurring within a small group (two to seven students).
- Use a *phrase-cued reading technique* to increase Andre's reading fluency. Demonstrate how to group words together to create meaningful phrases when reading sentences. Give Andre a copy of the sentences and show him how to draw a scoop under the phrases or put a slash between the phrases as he reads. This technique will help build a bridge between word-by-word reading and connected reading.
- Andre would benefit from intensive phonics interventions that use an explicit approach to teaching phoneme-grapheme relationships, including (1) matching sounds with letters, (2) blending the sounds to create words, and (3) segmenting words into separate sounds.
- *Word-recognition strategies* may help Andre build automatic sight-word recognition. Such strategies include word walls, word banks, flash cards, and games. Use high-frequency words when implementing these strategies because this may enhance Andre's ability to read independently. For example, a word wall might contain five high-frequency words that Andre needs to learn. Engage him in activities, both planned and unplanned, that use the words on the wall. Word walls help build word recognition, analysis skills, and vocabulary, and they serve as a spelling reference.
- *Repeated reading* may help Andre improve accuracy and automaticity in retrieval of lexical representations. In this intervention, ask Andre to orally read a passage multiple times, each time faster than the last time. Graph the time and number of errors for each reading. As Andre's oral reading becomes more automatic, his word retrieval will require less conscious effort.

Case Study 2: John, a Middle School Student

The purpose of this example is to illustrate the application of the C-SEP with a student in middle school and to demonstrate how the core tests of the WJ IV serve as the necessary norm-referenced data for a comprehensive evaluation. A comprehensive list of all the informal and formal data collected and used in the analysis is provided. A brief description of the reason for referral, the developmental history, and the behavioral observations are provided prior to presenting the norm-referenced assessment data gathered from the WJ IV COG, WJ IV ACH, and WJ IV OL batteries. The presentation of data in this report follows the C-SEP steps. Obtained standard scores and relative proficiency indexes (RPIs) are included in the case study, and recommendations are provided.

COMPREHENSIVE REPORT

Core-Selective Evaluation Process (C-SEP) Using the WJ IV

Name: John Smith

Age: 13 years, 5 months

Grade: 8

Dates of Testing: 10/28/2017 (COG); 10/31/2017 (OL); 10/28/2017 (ACH Form A)

Reason for Referral

John was referred by his mother, Mrs. Smith, and the school's response-to-intervention (RTI) committee for an evaluation to determine whether he has a specific learning disability (SLD). John has a history of struggling with all academics and has received research-based intervention within the RTI program. Daily progress monitoring indicated John was making some progress; however, John's progress was slower than his peers', which prompted the RTI committee to refer him for a comprehensive evaluation. This evaluation is intended to provide a comprehensive profile of John's strengths and weaknesses in cognitive abilities, oral language, and achievement. Results will be used to determine whether John has a pattern of strengths and weaknesses that are indicative of an SLD. The Core-Selective Evaluation Process (C-SEP) will be used to collect, organize, and interpret John's assessment information.

Evaluation Data/Tests Administered

- Parent, teacher, and student checklists from the *WJ IV Interpretation and Instructional Interventions Program* (WIIIP)
- RTI data (math, reading, and writing curriculum-based measures [CBM]; progress-monitoring charts)
- District benchmarks (reading, writing, math)
- State test scores
- *Iowa Test of Basic Skills*® (ITBS®)
- Classroom grades
- Review of records
- *Woodcock-Johnson IV Tests of Cognitive Abilities* (WJ IV COG)
- *Woodcock-Johnson IV Tests of Oral Language* (WJ IV OL)
- *Woodcock-Johnson IV Tests of Achievement* (WJ IV ACH), Form A

Background Information

Parent's Report

To obtain thorough information regarding John's development and functioning, John's mother, Mrs. Smith, completed a questionnaire on October 8, 2017. Findings indicate that John lives with his mother, stepfather, and three younger sisters. Mrs. Smith reported that John gets along well with his father, stepfather, and stepsisters but does not get along with his biological sister. In addition, Mrs. Smith reported that at times he is disrespectful to her. There have been no significant recent changes in his family life.

Mrs. Smith reported that John is usually in good health and is physically fit. She stated that John's vision and hearing are within normal limits, and this was confirmed by the screening conducted by the school nurse. At night, he typically sleeps soundly for 8 hours. There is a reported history of other family members' having learning difficulties, but John's mother did not elaborate when questioned. During pregnancy, John's mother had no significant health problems; however, John was delivered by Cesarean section because the umbilical cord was wrapped around his neck. Mrs. Smith reported no other complications from the delivery. John's early motor skills, such as sitting up, crawling, and learning to walk, developed normally. His early language skills, such as speaking first words, asking simple questions, and talking in sentences, developed somewhat slower than those of other children his age. No atypical behaviors were recalled from John's preschool years.

Mrs. Smith homeschooled John from kindergarten through fifth grade and reported that she was aware he was struggling with his reading and phonics skills at an early age. She knew that John needed help in all areas and reported that she enrolled him in school at the beginning of sixth grade so that he could get more instruction and tutoring. Mrs. Smith also reported that when John worked independently, he needed help and needed reminders to stay on task. She did not feel that he was interested in his schoolwork. John has attended Columbus Middle School since sixth grade. A review of John's grades indicated that he was having more academic success in sixth grade, but as the demands in middle school have increased, his grades have begun to slip. His class grades for the first six weeks in eighth grade were in the low- to mid-70s in all academic classes. In addition, a review of his performance on seventh-grade district benchmark testing and his *Iowa Test of Basic Skills* (ITBS) scores indicated that he was scoring below expected levels when compared to other students in his grade. He also did not meet standards for the state-mandated exams in sixth or seventh grade.

Teacher's Report

Ms. Anderson, John's math teacher, responded to a checklist on October 10, 2017, to provide information based on recent classroom observations. Ms. Anderson described John as smart and serious. She described his mood at school as typical for his age, with normal variations. She reported that he needed more one-on-one attention and completed less schoolwork than other students his age. Ms. Anderson also stated that John needed remediation at the beginning of the school year for skills that he had missed in earlier grades. Further, John frequently relied on his calculator before he used paper and pencil to solve math problems.

John usually attends to details in schoolwork and appears to concentrate while working, but he seldom completes his classwork in the allotted time and frequently does not turn in homework. He generally persists with difficult tasks. He usually maintains attention during direct instruction and listens when spoken to directly, but he has some difficulty organizing his tasks and activities. John's oral responses to questions are slow and careful. He reacts normally to distractions and adapts to them. Ms. Anderson reported that John's math calculation skills are in the average range, but his math reasoning skills are in the low average range. John's greatest difficulties seem to stem from not following through on instructions and failing to finish his homework. John's social interaction skills are described as typical for his age.

Ms. Gardner, John's language arts teacher, rated John's oral language abilities as being within the low average to average range when compared to his same-grade peers. She rated John's levels of listening comprehension, basic reading skills, reading comprehension, written expression, and basic writing skills as average. Ms. Gardner reported splinter skills in the areas of reading and writing. Additionally, Ms. Gardner echoed Ms. Anderson's report that John does not follow through and complete classwork or homework. Consequently, missing assignments have resulted in failing grades.

Test Session Observations

John came willingly into the testing situation and expressed interest in the work he was going to do. Rapport was established easily. John's conversational proficiency seemed appropriate for his age. He shared information about his likes and dislikes at school. During the interview, he reported that he liked school, that his favorite class is art, and that his easiest class is Spanish. He also reported that his hardest class is math because he has difficulty with equations. He said his second-hardest class is English because he does not always understand what he is reading. He also explained that sometimes he does not try as hard as he should. John reported that he began having trouble with math in late fifth grade and with reading in sixth grade. He reported that sometimes he can do his writing assignments, but other times he does not want to finish them or just forgets to finish them. He reported that he prefers computer games and Xbox® to other activities at home and indicated that he frequently forgets or rushes through his homework to have more gaming time.

John was tested over a 2-day period. He was cooperative throughout the examination, and his activity level seemed typical for his age. He responded slowly and carefully to test questions and generally persisted with difficult tasks. However, at times he appeared tense and worried (especially during the achievement testing). On math and writing tasks, he needed some additional reassurance to stay on task.

Core Psychological Processes

WJ IV Tests of Cognitive Abilities Core Tests

The seven core tests of the WJ IV COG were administered to obtain information regarding John's cognitive profile. The General Intellectual Ability (GIA) score is a composite measure of cognitive ability derived from these seven tests. Compared to his peers, John's GIA score was in the average range (SS = 91). Results from the individual tests were used to determine areas of cognitive strengths and weaknesses and to identify areas in which additional, selective cognitive testing was required. John's performance on these seven core tests ranged from low average to average. Results are presented below.

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
GENERAL INTELLECTUAL ABILITY (GIA)	91 (83–99)	AVERAGE	83/90	AVERAGE
Oral Vocabulary (*Gc*)	89 (78–99)	Low Average	77/90	Limited to Average
Number Series (*Gf*)	93 (85–102)	Average	79/90	Limited to Average
Verbal Attention (*Gwm*)	99 (87–110)	Average	89/90	Average
Letter-Pattern Matching (*Gs*)	98 (81–115)	Average	87/90	Average
Phonological Processing (*Ga*)	92 (79–106)	Average	83/90	Average
Story Recall (*Glr*)	91 (81–102)	Average	84/90	Average
Visualization (*Gv*)	94 (83–104)	Average	85/90	Average

Areas of Below-Average to Average Cognitive Abilities

John's performance indicated intact cognitive abilities in all cognitive areas. His scores fell in the low average to average range on all tests, indicating that no further testing was required in these areas.

Oral Vocabulary

This test is made up of two subtests, Synonyms (words with the same definition) and Antonyms (words with opposite definitions), that measured the breadth of John's vocabulary knowledge. This test measures John's comprehension-knowledge (*Gc*), or obtained knowledge and vocabulary ability. Compared to his peers, John scored in the low average range (SS = 89). John's relative proficiency index (RPI) score of 77/90 indicates that he will find grade-level tasks similar to those on the Oral Vocabulary test difficult. John scored adequately on this test; therefore, no further assessment was required in the area of comprehension-knowledge.

Number Series

This test is a measure of quantitative reasoning, a narrow measure of fluid reasoning (*Gf*). Fluid reasoning is the ability to use prior knowledge to solve new problems, reason, or form new concepts. In this test, John was presented with a series of numbers where one was missing, such as "10, 11, 12, __." John obtained a standard score of 93, which is within the average range compared to his peers. His RPI of 79/90 indicates that he performed with 79% proficiency on tasks his same-age peers perform with 90% proficiency. John scored adequately on this test; therefore, no further assessment was required in the area of fluid reasoning.

Verbal Attention

Verbal Attention is a narrow measure of verbal working memory within the short-term working memory (*Gwm*) ability. Short-term working memory tests measure the ability to attend to information, hold the information in immediate awareness, and then perform a mental operation on the information. During this test, John listened to a series of words containing animal names and digits intermingled. Then he was asked a specific question about the series of words. For example, the series might be "7…dog…9," and John would be asked to repeat the word that comes between 7 and 9. John's standard score of 99 falls within the average range compared to his peers. His RPI of 89/90 indicates average proficiency on the tasks. John maintained attentional control, held new verbal material in the short term, manipulated verbal stimuli, and provided an appropriate response; no additional tests in the area of short-term working memory were required.

Letter-Pattern Matching

Letter-Pattern Matching is a perceptual speed task measuring a narrow ability of cognitive processing speed (*Gs*). Performance on these tasks relates to the area of cognitive efficiency—the speed at which John can make visual symbol discriminations and identify common orthographic (spelling) patterns. On this task, John was asked to locate and circle the two identical letter patterns in a row of six patterns. John obtained a standard score of 98, which falls within the average range compared to his peers. He obtained an RPI of 87/90, indicating average proficiency. John performed adequately on this test; therefore, no additional testing was required in the area of cognitive processing speed.

Phonological Processing

This test is a measure of John's auditory processing (*Ga*) ability, or his ability to analyze, synthesize, and discriminate auditory stimuli and perceive and manipulate speech sounds. It includes three subtests that measure various aspects of phonological processing. In this test, John was asked to (a) name a word that has a specific sound in a specific location, (b) name as many items that start with a certain sound in 1 minute as he could, and (c) substitute one part or sound

in a word for another to create a new word. Compared to his peers, John scored within the average range on Phonological Processing (SS = 92). His proficiency is average (83/90); when average peers would have 90% proficiency on phonological processing tasks, John would have 83% proficiency. Compared to other students his age, his abilities in phonological processing appear to be intact. Consequently, there was no need for additional assessment in the area of auditory processing.

Story Recall

This test is measure of John's long-term retrieval ability (*Glr*), or his ability to learn information and then recall it. In this test, John listened to a passage and then was asked to recall the story elements. Compared to his peers, John scored within the average range (SS = 91) on this test. When average peers would have 90% proficiency on story recall tasks, John would have 84% proficiency. John performed adequately on this test; therefore, no additional tests in the area of long-term retrieval were required.

Visualization

This test measures visual processing (*Gv*) ability, which is the ability to perceive, analyze, synthesize, and think with visual patterns, including the ability to store and correctly identify visual images from memory. It has two subtests. The first, Spatial Relations, required John to identify, from a series of shapes, the pieces needed to form a whole shape. The second, Block Rotation, required him to identify the two block figures that match the target figure. Compared to his peers, John scored in the average range (SS = 94). When average peers would have 90% proficiency on visualization tasks, John would have 85% proficiency. John adequately completed tasks requiring complex spatial relations. Therefore, no additional tests needed to be administered in the area of visual processing.

According to the C-SEP model, average performance on each of the seven WJ IV COG core tests indicates intact cognitive processing. Therefore, no additional selective testing from the WJ IV COG was required for John.

Core Oral Language Abilities

WJ IV Tests of Oral Language Core Tests

When determining whether an SLD exists, it is important to obtain information regarding oral language skills. Language is a mediator between cognition and achievement and is a key component of the SLD definition. John was administered the core tests from the WJ IV OL to examine his ability to express his ideas orally and comprehend orally presented material. Compared to his peers, his Oral Language cluster score (SS = 94), comprising the Picture Vocabulary and Oral Comprehension tests, was in the average range. Results for all tests administered are presented below.

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
ORAL LANGUAGE	94 (84–104)	AVERAGE	84/90	AVERAGE
Picture Vocabulary	99 (85–112)	Average	89/90	Average
Oral Comprehension	90 (77–103)	Average	78/90	Limited to Average
Segmentation	103 (93–112)	Average	93/90	Average
Rapid Picture Naming	99 (90–109)	Average	89/90	Average

Areas of Average Oral Language Abilities

Picture Vocabulary

This test, a measure of oral expression, required John to name vocabulary words that were presented in picture format. John scored in the average range compared to other students his age (SS = 99). When average peers would be 90% proficient on picture vocabulary tasks, John would have 89% (average) proficiency. Results of this test are consistent with John's performance on Oral Vocabulary, the WJ IV COG measure of comprehension-knowledge (*Gc*). No further testing was necessary in the area of oral expression.

Oral Comprehension

This test is a measure of listening comprehension, or John's ability to understand information that he hears. John's score was in the average range compared to other students his age (SS = 90). When average peers would have 90% proficiency on listening comprehension tasks, John would have 78% (limited to average) proficiency. Although John's performance on this test does not suggest that further testing is necessary in the area of *Gc*, his limited-to-average RPI of 78/90 suggests a need for some tutoring or remediation.

Segmentation

Segmentation is a measure of phonological awareness. In this test, John was required to break apart the sounds in words by syllables and phonemes. Compared to his peers, he scored in the average range on Segmentation (SS = 103). When average peers would have 90% proficiency on segmentation tasks, John would have 93% (average) proficiency. John's performance on Segmentation supports the finding from the WJ IV COG testing that his auditory processing (*Ga*) abilities are intact. Therefore, no further testing was necessary in this area.

Rapid Picture Naming

This test required John to name pictures quickly under time constraints. It is a measure of John's ability to sustain attention while processing and naming symbols. Compared to his peers, John scored in the average range on Rapid Picture Naming (SS = 99). When average peers would have 90% proficiency on rapid picture naming tasks, John would have 89% (average) proficiency. John's performance on Rapid Picture Naming supports the finding from the WJ IV COG testing that his cognitive processing speed (*Gs*) abilities are intact; no further testing was necessary in this area.

Core Achievement

WJ IV Tests of Achievement Core Tests

When determining whether a specific learning disability exists, it is important to consider information regarding achievement skills. John was administered the core tests from the WJ IV ACH, which includes measures of reading, writing, math, and academic knowledge. Compared to his peers, John's Brief Achievement cluster score was in the average range (SS = 91). The Brief Achievement cluster is an overall measure of academic ability composed of one test each of reading (Letter-Word Identification), mathematics (Applied Problems), and writing (Spelling) skills. When average peers would have 90% proficiency on basic academic skills, John would have 73% proficiency.

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
BRIEF ACHIEVEMENT	91 (86–96)	AVERAGE	73/90	LIMITED TO AVERAGE
Letter-Word Identification	94 (87–102)	Average	79/90	Limited to Average
Spelling	88 (81–95)	Low Average	61/90	Limited
Applied Problems	92 (84–101)	Average	76/90	Limited to Average
Calculation	91 (83–99)	Average	70/90	Limited to Average
Passage Comprehension	89 (79–100)	Low Average	74/90	Limited to Average
Writing Samples	90 (81–99)	Average	75/90	Limited to Average

Areas of Average Achievement

Letter-Word Identification

This test is a measure of basic reading skills. It required John to decode and read real words that gradually increase in difficulty. John scored in the average range when compared to same-age peers on Letter-Word Identification (SS = 94). When average peers would have 90% proficiency reading words, John would have 79% proficiency. Initially John read fluently. Then, as words increased in difficulty, he attempted to sound them out or made substitutions of words that were more familiar to him. He had some difficulty applying phoneme-grapheme relationships to the more difficult items. John's proficiency level suggests a need for some tutoring or remediation, but his weakness in this area was not atypical. John's average standard score on this test indicated that no further testing was necessary in the area of basic reading skills.

Passage Comprehension

This test is a measure of reading comprehension. It assessed John's understanding of written text. Most of the test items required him to supply a missing word to complete sentences and paragraphs of increasing complexity. Compared to his peers, John performed in the low average range (SS = 89) on this test. He provided the correct responses on the shorter passages but experienced some difficulty with the longer ones. When average peers would have 90% proficiency on passage comprehension tasks, John would have 74% proficiency. Although no further testing was necessary in the area of reading comprehension, John's RPI suggests that he might benefit from tutoring or remediation in this area.

Spelling

This test required John to spell orally dictated words. Compared to his peers, John scored in the low average range on the Spelling test (SS = 88). When average peers would have 90% proficiency on spelling tasks, John would have 61% (limited) proficiency. When words increased in difficulty, John made errors and tried to spell words phonetically. He also indicated that he never took a spelling test when he was homeschooled. John's performance on the Spelling test was compared with other sources of data, and it was determined that no additional testing was necessary in the area of spelling.

Writing Samples

On this test, a measure of written expression, John was asked to write sentences based on various prompts. Compared to his peers, John scored within the average range (SS = 90) on Writing Samples. When average peers would have 90% proficiency on writing tasks, John would have 75% (limited to average) proficiency. He wrote clear, complete sentences but did not always use correct spelling, grammar, capitalization, or punctuation. The results suggest a need for additional tutoring or remediation in the area of written language; however, no additional testing is needed in this area.

Applied Problems

This test measured John's math problem solving skills and his ability to analyze and solve word problems. He was required to listen to and read problems, recognize the math procedure that must be followed, and perform the appropriate calculations. Compared to his peers, John scored in the average range on Applied Problems (SS = 92). When average peers would have 90% proficiency on applied problem tasks, John would have 76% (limited to average) proficiency. Test results suggest a need for additional tutoring in the area of math problem solving; however, no additional testing is needed in this area.

Calculation

This test, a measure of math calculation skills, assessed John's procedural math knowledge and skills in performing paper-and-pencil math computations. Compared to his peers, John scored in the average range (SS = 91) on Calculation. When average peers would have 90% proficiency on calculation tasks, John would have 70% (limited to average) proficiency. John was able to solve problems using regrouping, simple fractions, decimals, and single-digit multiplication and division. However, he made errors involving multidigit multiplication and division. His numbers were misaligned as he attempted to solve multidigit multiplication and division problems, causing errors. John stated that he was never sure how to work the problems but that as long as he had a calculator, he had no difficulty with math. Test results indicate a need for additional tutoring in the area of math calculation; however, no additional testing is needed at this time.

Integrated Interpretation

All the data collected for John's evaluation were analyzed and interpreted to establish a profile. Background information provided by John's mother, results of a questionnaire completed by his teacher, interview information from John, observation conducted during testing, RTI data, class grades, work samples, benchmark testing, and results of standardized testing were used to create a comprehensive profile of John's cognitive abilities, oral language abilities, and academic skills.

Consideration of Exclusionary Factors

Considerations of the exclusionary factors are required by the federal regulations of the Individuals with Disabilities Education Improvement Act of 2004 (IDEA, 2004) before a diagnosis of an SLD can be made. A review of possible exclusionary factors was conducted as part of John's evaluation. The results of that review appear below.

Exclusionary Factors	Documentation or Source of Data	Primary Cause of Academic Difficulties?
Visual, hearing, or motor	Information from parent(s) and teacher(s) Nurse screening Review of educational records	No
Limited English proficiency	Home Language Survey Information from parent(s) and teacher(s) WJ IV OL results	No
Intellectual disability	WJ IV COG results Informal adaptive behavior assessment Information from parent(s) and teacher(s)	No
Emotional disturbance	Information from parent(s) and teacher(s) Review of records Classroom observation	No
Cultural differences or economic disadvantage	Information from parent(s) and teacher(s) Review of records	No
Inadequate instruction	RTI data	Yes; John was homeschooled from kindergarten through 5th grade. There is no documentation regarding quality of instruction.

Based on a thorough review of John's health history obtained through an examination of past records and information reported by his parents, John does not have visual or hearing impairments, nor does he have a history of any type of special education services in school. John has no reported motor impairments, and there is no documentation of behavioral difficulties. Test results and information obtained from his mother and teachers support the finding that John has average intelligence. In addition, English was reported as his first and only language, so there were no concerns that limited English language proficiency is contributing to his reading and writing difficulties. Further, there are no cultural differences or economic disadvantages reported by John's mother or by the school.

Lastly, adequate instruction in reading and math must be considered. John was homeschooled from kindergarten through fifth grade and entered public school at the beginning of sixth grade. John's mother reported that she used an approved homeschool curriculum and noticed as early as first grade that he appeared to have difficulty with phonics. Mrs. Smith reported that she purchased and used *Hooked on Phonics*® with John during the first and second grade and that she believed it helped. Since John was homeschooled until sixth grade, there are no grades or curriculum-based measures to review, nor are there educational records for him from kindergarten through fifth grade. Given the lack of data to indicate adequate instruction in reading and math, lack of educational opportunity cannot be ruled out as the primary cause of John's current academic weaknesses.

Patterns of Strengths and Weaknesses

John's overall cognitive ability, as indicated by his General Intellectual Ability (GIA) score, was within the average range (SS = 91). John's cognitive, oral language, and achievement profiles did not show a clear pattern of strengths and weaknesses.

Analysis of the data collected indicates that John exhibits low average to average performance on the core tests of the WJ IV COG. Overall, no significant strengths or weaknesses were identified. His performance on the WJ IV OL core tests further supports the findings from the WJ IV COG core tests. John scored in the average range, with no significant strengths or weaknesses noted. Additionally, John's performance on the WJ IV ACH core tests indicates no significant strengths or weaknesses in the academic areas. John had average performance on the Letter-Word Identification, Applied Problems, Calculation, and Writing Samples tests. He scored in the low average range on the Spelling and Passage Comprehension tests.

Multiple data sources were integrated to determine whether a pattern of strengths and weaknesses exists in John's cognitive and academic profile. Standardized test results were further supported through information provided by John (student interview), his mother (background information), and teachers (work samples, interview, RTI data, and grades). The triangulation of data collected over time did not create and support a pattern of strengths and weaknesses over John's school history. Multiple sources of data are listed below.

Cognitive Ability	Data Sources	Academic Performance	Data Sources
Comprehension-knowledge (*Gc*)	Parent information Teacher information Classroom observation WJ IV COG Test 1: Oral Vocabulary WJ IV OL Test 1: Picture Vocabulary WJ IV OL Test 2: Oral Comprehension Review of school records Class grades	Basic reading skills and reading comprehension	Parent information Teacher information Student information CBM letter-word measures Classroom oral reading assignments CBM reading comprehension measures Direct reading inventory data Reading benchmarks Class grades WJ IV ACH Test 1: Letter-Word Identification WJ IV ACH Test 4: Passage Comprehension Ask-read-tell strategy data State reading test Review of school records
Long-term storage and retrieval (*Glr*)	Parent information Teacher information Classroom observation WJ IV COG Test 6: Story Recall WJ IV ACH Test 4: Passage Comprehension Ask-read-tell strategy data Reading grades Review of school records	Spelling and written language	Spelling tests Writing samples WJ IV ACH Test 3: Spelling WJ IV ACH Test 6: Writing Samples Class writing benchmarks State writing test CBM writing samples Class grades Review of school records

Implications and Summary

Based on a variety of data collected as well as information obtained through the use of C-SEP, John does not appear to demonstrate a significant pattern of strengths and weaknesses. All of John's scores were in the low average to average range. No significant cognitive, oral language, or academic weaknesses were noted. When looking at John's proficiency scores and comparing his work to that of other students his age, however, he does appear to have difficulty with certain areas such as reading comprehension, spelling, written expression, and math problem solving. These findings suggest a need for some tutoring or remediation but do not currently support the diagnosis of a specific learning disability. Another factor that appears to contribute to John's performance is his reported lack of interest in completing his classwork and homework. Additionally, because John was homeschooled from kindergarten through fifth grade, limited data are available regarding the quality of John's early academic instruction. Therefore, inadequate instruction cannot be ruled out as the primary cause of John's present academic weaknesses. Over the next few months, John's teachers should continue to monitor his performance to ensure that he is making adequate progress. This report will be submitted to the Individualized Education Program (IEP) committee for review.

Instructional Recommendations

School Recommendations

- John's homeroom teacher, Ms. Reynolds, should meet with John weekly to monitor the completion of homework assignments for all of his classes.
- To enhance John's ability to comprehend written material, encourage him to engage in prereading activities prior to actually reading the assigned material. These prereading activities might include reviewing new vocabulary and examining section headings, pictures, diagrams, and any summaries at the beginning or end of the assigned reading.
- John needs assistance in proofreading his writing for capitalization, punctuation, and spelling errors. Provide feedback to John and then have him correct his errors. Teach him how to use a spell checker to assist with spelling words correctly.
- Provide John with sample paragraphs to see how they are structured. Teach him to write simple and compound sentences correctly to form a paragraph.
- To aid with organization in note taking, provide John with a study guide to be completed during a lecture. This will help John learn to focus on the important details.

Home Recommendations

- John would benefit from participating in the afterschool mathematics lab 3 days a week. In this setting, John will receive individualized math instruction to reteach basic concepts, such as the operations of multidigit multiplication and division.
- Provide John with the structure he needs at home to complete homework. Identify a place and time that is just for homework. Ensure that his homework is completed before he spends time using his gaming devices.

Case Study 3: Derek, a College Student (Adult)

The purpose of this example is to illustrate the application of the C-SEP with an adult enrolled in a college program and to demonstrate how the results of the core tests can support the need for the administration of additional tests. A brief description of the reason for referral, the developmental history, and behavioral observations are provided prior to presenting the assessment results. Information on the obtained standard scores and relative proficiency indexes (RPIs) is included, and recommendations are provided.

COMPREHENSIVE REPORT

Core-Selective Evaluation Process (C-SEP) Using the WJ IV

Name: Derek Turner

Age: 31 years

Grade: 14

Reason for Referral

Derek is having difficulty in his anatomy and physiology classes in his physical therapy program at Rogers Medical Institute. The purpose of this evaluation is to determine why Derek is struggling and whether or not he has a learning disability. Results may inform specific ways to help him be more successful in his courses. The Core-Selective Evaluation Process (C-SEP) will be used to collect, organize, and interpret Derek's assessment information.

Evaluation Data/Tests Administered

- *Woodcock-Johnson IV Tests of Cognitive Abilities* (WJ IV COG)
- *Woodcock-Johnson IV Tests of Oral Language* (WJ IV OL)
- *Woodcock-Johnson IV Tests of Achievement* (WJ IV ACH)

Background Information

Family History

Derek was not aware of any family history of learning disabilities.

Educational and Vocational History

Derek reported having trouble in school for as long as he could remember. He reported that he has always struggled with reading, writing, and math. He recalled that he had trouble memorizing his multiplication tables in third grade even though he would go over and over them with his mother. He also remembered participating in an afterschool program in fourth grade for students who were behind in their reading skills.

Derek stated that during high school, he usually received low *B*s and *C*s in his classes. Because he was struggling in many of his classes, he skipped them often. He also did not turn in many homework assignments in both middle and high school. Despite his limited attendance and avoidance of academic assignments, he reported that he has always been able to get along with his teachers.

In high school, Derek was involved in athletic extracurricular activities, including both football and basketball. He commented that these activities were his favorite school experiences. He reported that he has always been able to make friends and that he did not experience bullying in school.

Derek never had an evaluation or received any special education services throughout his school years.

Prior to his current job at Redrock Physical Therapy, Derek worked as an EMT for 2 years. After working as a technician at Redrock Physical Therapy for 3 years, he decided to continue his education at Rogers Medical Institute to transition into the position of physical therapist assistant. He is currently

in his second year of this program. Derek reported that he always runs out of time on exams, even when he studies and feels that he really knows the material.

Medical and Developmental History

Derek described himself as balanced in all aspects of his life. He did not have any developmental problems as a child and met all milestones in a timely manner.

Derek does not have any health problems. He has not had any major illnesses, injuries, head injuries, or hospitalizations. As far as mental health, Derek struggled with depression and anxiety, most severely in his mid-20s. During this period, he saw two different psychologists for his anxiety and depression. He currently reports that depression and anxiety are no longer issues.

Test Session Observations

Derek was cooperative and maintained focus throughout testing. His level of conversational proficiency was typical for his age. He appeared tense or worried at times during testing when the items increased in difficulty, particularly on phonological processing and reading tasks. He persisted on all tasks, however, even when he was struggling.

Psychological Processes

WJ IV Tests of Cognitive Abilities Core Tests

The seven core tests of the WJ IV COG were administered to obtain information regarding Derek's cognitive profile. The General Intellectual Ability (GIA) score is a composite measure of cognitive ability derived from these seven tests. Compared to his peers, Derek's GIA score was in the low average range (SS = 87). Results from the individual tests were used to determine areas of cognitive strengths and weaknesses and to identify areas in which additional, selective cognitive testing was required. Derek's performance on these seven core tests ranged from low to average. Results are presented below.

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
GENERAL INTELLECTUAL ABILITY (GIA)	87 (83–90)	LOW AVERAGE	74/90	LIMITED TO AVERAGE
Oral Vocabulary (*Gc*)	103 (98–108)	Average	92/90	Average
Number Series (*Gf*)	102 (97–107)	Average	92/90	Average
Verbal Attention (*Gwm*)	86 (80–91)	Low Average	65/90	Limited
Letter-Pattern Matching (*Gs*)	80 (71–89)	Low Average	20/90	Very Limited
Phonological Processing (*Ga*)	76 (71–80)	Low	43/90	Limited
Story Recall (*Glr*)	101 (96–105)	Average	90/90	Average
Visualization (*Gv*)	79 (74–85)	Low	62/90	Limited

Areas of Average Cognitive Abilities

Derek's performance indicated intact cognitive abilities in the areas of comprehension-knowledge (*Gc*), fluid reasoning (*Gf*), and long-term retrieval (*Glr*). Derek's average performance on tests measuring these abilities indicates that no further testing is required in these areas.

Oral Vocabulary

This test is made up of two subtests, Synonyms (words with the same definition) and Antonyms (words with opposite definitions), that measured the breadth of Derek's vocabulary knowledge. This test measures Derek's comprehension-knowledge (*Gc*), or obtained knowledge and vocabulary ability. Compared to his peers, Derek scored in the average range on Oral Vocabulary (SS = 103). When average peers would have 90% proficiency on oral vocabulary tasks, Derek would have 92% (average) proficiency. Derek performed adequately on this test, so no additional tests in the area of comprehension-knowledge were required.

Number Series

This test is a measure of quantitative reasoning, a narrow measure of fluid reasoning (*Gf*). Fluid reasoning is the ability to use prior knowledge to solve new problems, reason, or form new concepts. In this test, Derek was presented with a series of numbers where one was missing, such as "10, 11, 12, __." Derek obtained a standard score of 102, which is within the average range compared to his peers. When average peers would have 90% proficiency on number series tasks, Derek would have 92% (average) proficiency. Derek performed adequately on this test, so no additional tests in the area of fluid reasoning were required.

Story Recall

This is a measure of Derek's long-term retrieval (*Glr*) ability, or his ability to learn information and then recall it. On this test, Derek listened to a passage and then was asked to recall the story elements. Compared to his peers, Derek scored in the average range (SS = 101) on Story Recall. When average peers would have 90% proficiency on story recall tasks, Derek would have 90% (average) proficiency. Because Derek performed adequately on this test, no additional tests in the area of long-term retrieval were required.

Areas of Low to Below-Average Cognitive Abilities

Verbal Attention

Verbal Attention is a narrow measure of verbal working memory within the short-term working memory (*Gwm*) ability. Short-term working memory tests measure the ability to attend to information, hold the information in immediate awareness, and then perform a mental operation on the information. During this test, Derek listened to series of words containing animal names and digits intermingled. Then Derek was asked a specific question about the series of words. For example, the series may be "8…horse…cow…2" and Derek would be asked to repeat the last number in the series. Compared to his peers, Derek's standard score falls within the low average range (SS = 86). When average peers would have 90% proficiency on verbal attention tasks, Derek would have only 65% (limited) proficiency.

Because of Derek's low performance on the Verbal Attention test, he was administered the WJ IV Numbers Reversed, Object-Number Sequencing, Memory for Words, and Sentence Repetition tests to more fully evaluate the short-term working memory weakness. Results are presented below in the section entitled "Selective Testing With the WJ IV Tests of Cognitive Abilities."

Letter-Pattern Matching

Letter-Pattern Matching is a perceptual speed task and a narrow measure of cognitive processing speed (*Gs*). On this test, Derek was asked to locate and circle the two identical letter patterns in a row of six patterns. This task relates to the area of cognitive efficiency, or the speed at which Derek can make visual symbol discriminations and identify common orthographic (spelling) patterns. Compared to his peers, Derek scored within the low average range with a standard score

of 80. When average peers would have 90% proficiency on letter-pattern matching tasks, Derek would have only 20% (very limited) proficiency.

Because of Derek's low performance on the Letter-Pattern Matching test, he was administered the WJ IV Number-Pattern Matching and Pair Cancellation tests to more fully evaluate the cognitive processing speed weakness. Results are presented below in the section entitled "Selective Testing With the WJ IV Tests of Cognitive Abilities."

Phonological Processing

This test is a measure of Derek's auditory processing (*Ga*) ability, or his ability to analyze, synthesize, and discriminate auditory stimuli and perceive and manipulate speech sounds. It includes three parts that measure various aspects of phonological processing. In this test, Derek was asked to (a) name a word that has a specific sound in a specific location, (b) name as many items in 1 minute that start with a certain sound, and (c) substitute one sound in a word with another sound to create a new word. Derek scored within the low range on Phonological Processing (SS = 76). When average peers would have 90% proficiency on phonological processing tasks, Derek would have only 43% (limited) proficiency.

Because of Derek's low performance on the Phonological Processing test, he was administered the WJ IV Nonword Repetition test to more fully evaluate the auditory processing weakness. Results are below in the section entitled "Selective Testing With the WJ IV Tests of Cognitive Abilities."

Visualization

This test falls under the visual processing (*Gv*) ability, which is the ability to perceive, analyze, synthesize, and think with visual patterns, including the ability to store and correctly identify visual images from memory. This test has two parts. The first, Spatial Relations, required Derek to identify, from a series of shapes, the pieces needed to form a whole shape. The second, Block Rotation, required him to identify the two block figures that match the target figure. Derek obtained a standard score of 79, which falls within the low range compared to his peers. When average peers would have 90% proficiency on visualization tasks, Derek would have only 62% (limited) proficiency.

Because of his low performance on the Visualization test, Derek was administered the WJ IV Picture Recognition test to more fully evaluate the visual processing weakness. Results are below in the section entitled "Selective Testing With the WJ IV Tests of Cognitive Abilities."

Selective Testing With the WJ IV Tests of Cognitive Abilities

The C-SEP model calls for further testing to more fully evaluate Derek's relative weaknesses in the areas of short-term working memory (*Gwm*), cognitive processing speed (*Gs*), auditory processing (*Ga*), and visual processing (*Gv*). Derek was administered the following additional WJ IV tests: Numbers Reversed, Memory for Words, Sentence Repetition, Pair Cancellation, Number-Pattern Matching, Nonword Repetition, and Picture Recognition. The addition of these tests to the core tests already administered forms four two-test clusters representing short-term working memory, cognitive processing speed, auditory processing, and visual processing. These multiple-test clusters allow more valid and reliable interpretation of Derek's abilities. Results of the additional selective testing appear in this section.

Short-Term Working Memory (*Gwm*)

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
SHORT-TERM WORKING MEMORY (*Gwm*)	81 (77–86)	LOW AVERAGE	52/90	LIMITED
Verbal Attention	86 (80–91)	Low Average	65/90	Limited
Numbers Reversed	82 (76–87)	Low Average	39/90	Limited

Derek's weakness in short-term working memory was confirmed through the administration of the Numbers Reversed test (SS = 82). This test measured Derek's ability to listen to a sequence of numbers and then repeat them in reverse order. Together, the Verbal Attention and Numbers Reversed tests compose the Short-Term Working Memory (*Gwm*) cluster. Compared to his peers, Derek performed in the low average range on this cluster (SS = 81). When average peers would have 90% proficiency on short-term working memory tasks, Derek would have 52% (limited) proficiency. This additional testing confirmed that Derek has difficulty holding information in the short-term for immediate use.

Auditory Memory Span

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
AUDITORY MEMORY SPAN	82 (78–86)	LOW AVERAGE	40/90	LIMITED
Memory for Words	82 (77–87)	Low Average	36/90	Limited
Sentence Repetition (WJ IV OL)	85 (80–90)	Low Average	45/90	Limited

Because of Derek's weakness in the area of short-term working memory, additional testing was conducted to assess how this weakness may affect his ability to remember and repeat information he hears auditorily. On the Memory for Words test, Derek listened to series of words and then was asked to repeat them back in the same order. Compared to his peers, he scored in the low average range (SS = 82) on this test. On the Sentence Repetition test (from the WJ IV OL), Derek listened to phrases and was asked to repeat them. He scored in the low average range (SS = 85) compared to his peers. Together, the Memory for Words and Sentence Repetition tests compose the Auditory Memory Span cluster. On this cluster, Derek performed in the low average range (SS = 82) compared to his peers. When average peers would have 90% proficiency on auditory memory span tasks, Derek would have only 40% (limited) proficiency. His performance on this cluster demonstrates a weakness in his ability to hold auditory information in immediate awareness and then repeat the information in the correct sequence.

Cognitive Processing Speed (*Gs*)

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
COGNITIVE PROCESSING SPEED (*Gs*)	85 (78–91)	LOW AVERAGE	47/90	LIMITED
Letter-Pattern Matching	80 (71–89)	Low Average	20/90	Very Limited
Pair Cancellation	95 (90–100)	Average	76/90	Limited to Average

Derek's weakness in cognitive processing speed was confirmed through the administration of the Pair Cancellation test, a measure of attention and concentration. Pair Cancellation required Derek to locate and mark a repeated pattern as quickly as possible. Compared to his peers, Derek performed in the average range (SS = 95) on this test. Together, the Letter-Pattern Matching and Pair Cancellation tests compose the Cognitive Processing Speed (*Gs*) cluster. Compared to his peers, Derek performed in the low average range (SS = 85) on this cluster. When average peers would have 90% proficiency on processing speed tasks, Derek would have 47% (limited) proficiency. He struggles with simple clerical tasks that use symbols, such as matching letters or numbers.

Perceptual Speed

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
PERCEPTUAL SPEED	79 (72–87)	LOW	35/90	LIMITED
Letter-Pattern Matching	80 (71–89)	Low Average	20/90	Very Limited
Number-Pattern Matching	86 (77–94)	Low Average	53/90	Limited

To further describe Derek's weakness in the area of processing speed, additional testing was conducted to assess his perceptual speed. The Number-Pattern Matching test measured Derek's ability to identify sets of numbers that were alike in a row of numbers as quickly as possible. Together, the Letter-Pattern Matching and Number-Pattern Matching tests compose the Perceptual Speed cluster. Compared to his peers, Derek performed in the low range (SS = 79) on the Perceptual Speed cluster. When average peers would have 90% proficiency on perceptual speed tasks, Derek would have only 35% (limited) proficiency. This suggests that Derek has difficulty working under time constraints. Indeed, at several times during the testing session he acknowledged how difficult it is for him to work quickly and efficiently.

Auditory Processing (*Ga*)

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
AUDITORY PROCESSING (*Ga*)	75 (72–79)	LOW	47/90	LIMITED
Phonological Processing	76 (71–80)	Low	43/90	Limited
Nonword Repetition	81 (77–86)	Low Average	52/90	Limited

To further investigate Derek's weakness in auditory processing, he was administered the Nonword Repetition test. This additional auditory processing test measured his ability to hear and then repeat phonically regular nonsense words. Compared to his peers, Derek performed in the low average range (SS = 81) on this test. The Phonological Processing and Nonword Repetition tests together form the Auditory Processing (*Ga*) cluster. Derek scored in the low range (SS = 75) on Auditory Processing compared to his peers. When average peers would have 90% proficiency on auditory processing tasks, Derek would have 47% (limited) proficiency. This additional evidence shows that Derek's ability to analyze, synthesize, and discriminate auditory stimuli and perceive and manipulate speech sounds is a weakness.

Visual Processing (*Gv*)

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
VISUAL PROCESSING (*Gv*)	84 (79–89)	LOW AVERAGE	75/90	LIMITED TO AVERAGE
Visualization	79 (74–85)	Low	62/90	Limited
Picture Recognition	94 (86–101)	Average	84/90	Average

Derek was administered the Picture Recognition test, an additional measure of visual processing. This test measured his ability to recognize a subset of previously presented pictures within a field of distracting pictures. Compared to his peers, Derek scored in the average range (SS = 94) on this test. The Visualization and Picture Recognition tests together form the Visual Processing (*Gv*) cluster. Compared to his peers, Derek scored in the low average range (SS = 84) on Visual Processing. When average peers would have 90% proficiency on visual processing tasks, Derek would have 75% (limited to average) proficiency. Derek's ability to perceive, analyze, synthesize, and think with visual patterns, including the ability to store and correctly identify visual images from memory, is a relative weakness.

Cognitive Efficiency

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
COGNITIVE EFFICIENCY–EXT	78 (73–83)	LOW	43/90	LIMITED
Letter-Pattern Matching	80 (71–89)	Low Average	20/90	Very Limited
Numbers Reversed	82 (76–87)	Low Average	39/90	Limited
Number-Pattern Matching	86 (77–94)	Low Average	53/90	Limited
Verbal Attention	86 (80–91)	Low Average	65/90	Limited

Because Derek exhibited weaknesses in cognitive processing speed and short-term working memory, further investigation was warranted to determine the impact of these weaknesses on his overall cognitive functioning. *Cognitive efficiency* refers to the combination of speed and attention that affects an individual's ability to maintain focus, hold information in conscious awareness, perform automatic tasks rapidly and accurately, and mentally manipulate information to solve tasks. One additional measure of short-term working memory, Verbal Attention, was administered. On this test, Derek listened to an intermingled series of animals and digits and was then asked to answer a specific question about the series. Compared to his peers, Derek scored in the low average range (SS = 86) on this test. The addition of Verbal Attention to the other measures of speed and working memory already administered allows the calculation of the Cognitive Efficiency–Extended cluster score. Derek performed in the low range (SS = 78) on this cluster. When average peers would have 90% proficiency on cognitive efficiency tasks, Derek would have 43% (limited) proficiency. Derek's weakness in this area may constrain his performance on more complex cognitive operations.

Case Study 3, Table 9—Number Facility

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
NUMBER FACILITY	81 (76–87)	LOW AVERAGE	46/90	LIMITED
Numbers Reversed	82 (76–87)	Low Average	39/90	Limited
Number-Pattern Matching	86 (77–94)	Low Average	53/90	Limited

The Number Facility cluster score describes Derek's ability to manipulate numbers in working memory and speed of number pattern comparison. This cluster score was calculated from the Numbers Reversed and Number-Pattern Matching tests. Derek performed in the low average range (SS = 81) compared to his peers. When average peers would have 90% proficiency on number facility tasks, Derek would have 46% (limited) proficiency.

Analysis of the GIA and the *Gf-Gc* Composite

The General Intellectual Ability (GIA) score, presented earlier in this report, is a composite measure of cognitive ability derived from the seven WJ IV COG core tests. Compared to his peers, Derek's GIA score was in the low average range (SS = 87). The individual test scores composing his GIA score range from low to average. The GIA may not be the most accurate representation of his overall cognitive ability, however, because it includes weaknesses in several lower-level processing areas (phonological processing, processing speed, visual processing, and short-term working memory); consequently, his GIA score should be interpreted with caution.

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
Gf-Gc COMPOSITE	102 (98–105)	AVERAGE	91/90	AVERAGE
COMPREHENSION-KNOWLEDGE (*Gc*)	91 (87–94)	AVERAGE	76/90	LIMITED TO AVERAGE
Oral Vocabulary	103 (98–108)	Average	92/90	Average
General Information	81 (76–85)	Low Average	45/90	Limited
FLUID REASONING (*Gf*)	113 (107–118)	HIGH AVERAGE	97/90	AVERAGE TO ADVANCED
Number Series	102 (97–107)	Average	92/90	Average
Concept Formation	119 (111–127)	High Average	99/90	Advanced

Alternatively, the *Gf-Gc* Composite is a better indicator of Derek's intellectual functioning because it is a measure of higher-level cognitive abilities, including reasoning and language. The *Gf-Gc* Composite is composed of two tests of comprehension-knowledge (*Gc*) and two tests of fluid reasoning (*Gf*). To calculate the *Gf-Gc* Composite score, Derek was administered General Information (SS = 81) and Concept Formation (SS = 119). Compared to his peers, Derek's *Gf-Gc* Composite score was in the average range (SS = 102).

Core Oral Language Abilities

WJ IV Tests of Oral Language Core Tests

When determining whether a specific learning disability exists, it is important to obtain information regarding oral language skills. Language is a mediator between cognition and achievement and is a key component of the SLD definition. Derek was administered the core tests from the WJ IV OL to examine his ability to express his ideas orally and comprehend orally presented material. His Oral Language cluster score, composed of the Picture Vocabulary and Oral Comprehension tests, was in the average range (SS = 97). Results for all tests administered are presented below.

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
ORAL LANGUAGE	97 (92–101)	AVERAGE	87/90	AVERAGE
Picture Vocabulary	96 (90–101)	Average	85/90	Average
Oral Comprehension	98 (92–104)	Average	88/90	Average
Segmentation	83 (78–87)	Low Average	39/90	Limited
Rapid Picture Naming	93 (88–97)	Average	75/90	Limited to Average

Areas of Average Oral Language Abilities

Picture Vocabulary

This test, a measure of oral expression, required Derek to name vocabulary words that were presented in picture format. Derek scored in the average range when compared to his peers (SS = 96). When average peers would have 90% proficiency on picture vocabulary tasks, Derek would have 85% (average) proficiency. Derek performed adequately on this test, so no additional tests in the area of oral expression were required.

Oral Comprehension

This test is a measure of listening comprehension, or Derek's ability to understand information that he hears. Derek scored in the average range (SS = 98) when compared to his peers. When average peers would have 90% proficiency on oral comprehension tasks, Derek would have 88% (average) proficiency. Derek performed adequately on this test, so no additional tests in the area of listening comprehension were required.

Rapid Picture Naming

This test required Derek to name pictures quickly under time constraints. It is a measure of Derek's ability to sustain attention while processing and naming symbols. He scored in the average range (SS = 93) when compared to his peers. When average peers would have 90% proficiency on rapid picture naming tasks, Derek would have 75% (average) proficiency. Derek performed adequately on this test, so no additional tests in the area of speed of lexical access were required.

Areas of Below-Average Oral Language Abilities

Segmentation

Segmentation is a measure of phonological awareness. In this test, Derek was required to break apart the sounds in words by syllables and phonemes. Compared to his peers, Derek scored in the low average range (SS = 83). When average peers would have 90% proficiency on segmentation tasks, Derek would have 39% (limited) proficiency.

Because of Derek's low performance on the Segmentation test, he was administered the WJ IV Sound Blending test to more fully evaluate the phonetic coding weakness. Results are below.

Selective Testing With the WJ IV Tests of Oral Language

C-SEP calls for further testing to more fully evaluate Derek's relative weakness in the area of auditory processing (*Ga*), specifically in the area of phonetic coding. Derek was administered two additional tests from the WJ IV OL battery. Results are presented below.

Phonetic Coding (*Ga*)

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
PHONETIC CODING	83 (79–87)	LOW AVERAGE	53/90	LIMITED
Segmentation	83 (78–87)	Low Average	39/90	Limited
Sound Blending	88 (83–93)	Low Average	68/90	Limited to Average
Sound Awareness	86 (79–92)	Low Average	70/90	Limited to Average

Derek was administered the Sound Blending test, which required him to listen to the phonemes of words and then blend the sounds together to identify the word. Compared to his peers, Derek performed in the low average range (SS = 88). When average peers would have 90% proficiency on sound blending tasks, Derek would have 68% (limited to average) proficiency. The Sound Blending and Segmentation tests together compose the Phonetic Coding cluster, an aggregate measure of auditory processing (*Ga*). On the Phonetic Coding cluster, Derek's standard score of 83 was in the low average range compared to his peers. Results of this additional testing confirmed Derek's weakness in phonological awareness.

Because of his weakness in phonological awareness, the Sound Awareness test was also administered. The Sound Awareness test, a screening for phonetic coding ability, required Derek to rhyme words and delete sounds from words. Compared to his peers, he scored in the low average range (SS = 86). When average peers would have 90% proficiency on these tasks, Derek would have 70% (limited to average) proficiency.

Core Achievement

WJ IV Tests of Achievement Core Tests

When determining whether a specific learning disability exists, it is important to obtain information regarding achievement skills. Derek was administered the WJ IV ACH, which includes measures of reading, writing, math, and academic knowledge. Compared to his peers, Derek's Brief Achievement cluster score was in the average range (SS = 90). The Brief Achievement cluster is an overall measure of academic ability composed of one test each of reading (Letter-Word Identification), mathematics (Applied Problems), and writing (Spelling) skills. When average peers would have 90% proficiency on basic academic skills, Derek would have 70% (limited to average) proficiency. Results for all tests administered are presented below.

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
BRIEF ACHIEVEMENT	90 (88–93)	AVERAGE	70/90	LIMITED TO AVERAGE
Letter-Word Identification	86 (82–89)	Low Average	48/90	Limited
Spelling	79 (75–83)	Low	28/90	Limited
Applied Problems	109 (105–113)	Average	97/90	Average to Advanced
Calculation	99 (95–103)	Average	89/90	Average
Passage Comprehension	98 (94–102)	Average	86/90	Average
Writing Samples	113 (108–119)	High Average	98/90	Average to Advanced

Areas of Average and Above-Average Achievement

Passage Comprehension

Passage comprehension, a test of reading comprehension, measured Derek's understanding of written text. This test required him to supply a missing word to complete paragraphs of increasing complexity. Compared to his peers, Derek performed in the average range (SS = 98). When typical peers would have 90% proficiency on passage comprehension tasks, Derek would have 86% (average) proficiency. Because Derek performed adequately on this test, no additional tests in the area of reading comprehension were required.

Applied Problems

Applied Problems measured Derek's math problem solving skills and his ability to analyze and solve word problems. On this test, he was required to listen to a problem, recognize the math procedure that must be followed, and then perform the appropriate calculations. Compared to his peers, Derek scored in the average range (SS = 109). When average peers would have 90% proficiency on applied problem tasks, Derek would have 97% (average to advanced) proficiency. Because Derek performed adequately on this test, no additional tests in the area of math problem solving were required.

Calculation

The Calculation test assessed Derek's procedural math knowledge and skills in performing paper-and-pencil math computations. Compared to his peers, Derek scored in the average range on this test (SS = 99). When his peers would have 90% proficiency on math calculation tasks, Derek would have 89% (average) proficiency. Because Derek performed adequately on this test, no additional tests in the area of math calculation skills were required.

Writing Samples

On the Writing Samples test, a measure of written expression, Derek was asked to write sentences based on various prompts. Derek scored in the high average range (SS = 113) when compared to his peers. When average peers would have 90% proficiency on writing tasks, Derek would have 98% (average to advanced) proficiency. Because Derek performed adequately on this test, no additional tests in the area of written expression were administered.

Areas of Below-Average Achievement

Letter-Word Identification

The Letter-Word Identification test measured Derek's basic reading skills. It required Derek to decode and read real words that gradually increased in difficulty. Derek scored in the low average range (SS = 86) when compared to his peers. When average peers would have 90% proficiency reading words, Derek would have only 48% (limited) proficiency.

Because of Derek's low performance on this test and his history of reading difficulties, a number of additional tests were administered. Derek was administered the WJ IV Word Attack, Oral Reading, Sentence Reading Fluency, and Word Reading Fluency tests to fully evaluate his weakness in reading. Results are below in the section entitled "Selective Testing With the WJ IV Tests of Achievement."

Spelling

This test required Derek to spell orally dictated words. Compared to his peers, Derek scored in the low range (SS = 79) on Spelling. When average peers would have 90% proficiency on spelling tasks, Derek would have only 28% (limited) proficiency.

Because of Derek's low performance on this test, he was administered two additional tests to further explore his difficulty with spelling: Word Attack and Spelling of Sounds. Results are below in the section entitled "Selective Testing With the WJ IV Tests of Achievement."

Selective Testing With the WJ IV Tests of Achievement

C-SEP calls for further testing to more fully evaluate Derek's relative weaknesses in the areas of reading and spelling. He was administered five additional tests: Word Attack, Oral Reading, Sentence Reading Fluency, Word Reading Fluency, and Spelling of Sounds. Along with tests already administered, these additional tests form several clusters that are relevant to Derek's academic weaknesses: Basic Reading Skills, Reading Fluency, Reading Rate, and Phoneme-Grapheme Knowledge. His performance on these additional tests and clusters is reported below and supports the findings from the core WJ IV ACH testing that Derek has weaknesses in his reading and spelling abilities.

Basic Reading Skills

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
BASIC READING SKILLS	82 (78–85)	LOW AVERAGE	45/90	LIMITED
Letter-Word Identification	86 (82–89)	Low Average	48/90	Limited
Word Attack	79 (74–84)	Low	41/90	Limited

Derek was administered the Word Attack test, a measure of his ability to apply phonic and structural analysis skills to the pronunciation of unfamiliar words. This test required him to read phonically regular nonsense words. His score on Word Attack was in the low range (SS = 79). The Letter-Word Identification and Word Attack tests together compose the Basic Reading Skills cluster. Derek performed

in the low average range (SS = 82) on the Basic Reading Skills cluster. When average peers would have 90% proficiency on basic reading tasks, Derek would have 45% (limited) proficiency. His performance on this cluster confirms his weakness in basic reading skills.

Reading Fluency

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
READING FLUENCY	88 (85–91)	LOW AVERAGE	53/90	LIMITED
Oral Reading	85 (82–88)	Low Average	50/90	Limited
Sentence Reading Fluency	92 (87–96)	Average	56/90	Limited

Derek was administered the Oral Reading and Sentence Reading Fluency tests to further investigate his weakness in reading. The Oral Reading test measured his ability to smoothly and proficiently read passages aloud. His score on Oral Reading was in the low average range (SS = 85). The Sentence Reading Fluency test measured his skill in reading simple sentences quickly in a 3-minute timeframe. Derek performed in the average range on Sentence Reading Fluency (SS = 92).The Oral Reading and Sentence Reading Fluency tests together compose the Reading Fluency cluster. Compared to peers, Derek scored in the low average range (SS = 88) on the Reading Fluency cluster. When average peers would have 90% proficiency on reading fluency skills, Derek would have 53% (limited) proficiency. His performance on this cluster demonstrates his difficulty with reading fluently.

Reading Rate

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
READING RATE	87 (83–91)	LOW AVERAGE	35/90	LIMITED
Sentence Reading Fluency	92 (87–96)	Average	56/90	Limited
Word Reading Fluency	84 (78–90)	Low Average	18/90	Very Limited

Derek was administered the Word Reading Fluency test, which required him to read rows of words quickly and mark the two words that go together in each row. His score on Word Reading Fluency was in the low average range (SS = 84). The Sentence Reading Fluency and Word Reading Fluency tests together compose the Reading Rate cluster. Derek performed in the low average range (SS = 87) on Reading Rate. When average peers would have 90% proficiency on reading rate tasks, Derek would have only 35% (limited) proficiency. Results of this additional testing confirm Derek's difficulties with reading automaticity.

Phoneme-Grapheme Knowledge

CLUSTER/Test	Standard Score (SS) (68% Confidence Band)	SS Classification	RPI	Proficiency
PHONEME-GRAPHEME KNOWLEDGE	83 (80–87)	LOW AVERAGE	62/90	LIMITED
Word Attack	79 (74–84)	Low	41/90	Limited
Spelling of Sounds	92 (87–97)	Average	80/90	Limited to Average

To further investigate Derek's weakness in the area of spelling, he was administered the Spelling of Sounds test. This test required Derek to spell nonsense words by using his knowledge of phoneme-grapheme relationships. Compared to his peers, his score on Spelling of Sounds was in the average range (SS = 92). The Word Attack and Spelling of Sounds tests together compose the Phoneme-Grapheme Knowledge cluster, a measure of Derek's decoding and encoding ability. Compared to his

peers, Derek performed in the low average range (SS = 83) on the Phoneme-Grapheme Knowledge cluster. When average peers would have 90% proficiency on tasks requiring phoneme-grapheme knowledge, Derek would have 62% (limited) proficiency. His performance on this cluster demonstrates his weakness in understanding and applying phoneme-grapheme relationships to both reading and spelling.

Integrated Interpretation

All the data collected for Derek's evaluation were analyzed and interpreted to establish a profile. Background information from Derek, including information about his educational, vocational, medical, and developmental history was considered. Together with this background information, the results of Derek's individual standardized testing were used to establish a pattern of strengths and weaknesses in cognitive abilities, oral language, and achievement.

Consideration of Exclusionary Factors

Although many of the factors are still relevant, consideration of the exclusionary factors is somewhat different for an adult than for a student who is enrolled in school and covered by the federal regulations of the Individuals with Disabilities Education Improvement Act of 2004 (IDEA, 2004). Derek does not have visual or hearing impairments; he also never received any type of special education services in school. In addition, English was his first and only language, so there were no concerns that limited English language proficiency was contributing to his low reading and writing scores. Although Derek did have poor attendance in high school, this seemed to be an attempt to escape from his academic difficulties and limited school success, rather than being attributable to illness or behavioral concerns.

Patterns of Strengths and Weaknesses

The pattern of strengths and weaknesses for Derek, as well as his academic history, all support the diagnosis of a specific reading disability that has impacted the development of his basic reading skills, reading rate, and spelling. Cognitively, Derek has acquired adequate knowledge, can solve novel problems, can remember what he has learned in the long term, and can work with numbers and patterns. However, he struggles with remembering information in the short term, processing information quickly and efficiently, processing and remembering auditory stimuli, working quickly with numbers, and rapidly processing visual stimuli. These cognitive weaknesses impact his ability to read and spell and are characteristic of a specific reading disability. Derek should therefore qualify for specific accommodations in his community college classes.

Instructional Recommendations

- Derek should take this psychoeducational report to the disability office at Rogers Medical Institute to support the need for accommodations in classes.
- Derek can improve his reading skills by using an online reading intervention, *MindPlay Virtual Reading Coach*™, for 30 minutes a day, 5 days a week (www.mindplay.com).
- Derek should record lectures and relisten to lectures to expand upon his notes after class and to help him retain the information.
- He should request testing accommodations for the National Physical Therapy Exam (NPTE) under the Americans with Disabilities Act (ADA) by contacting the Arizona State Board of Physical Therapy at the time of registration: Charles.brown@ptboard.az.gov and (602) 274-0236.
- Prior to taking the exam, Derek should register for and take a practice test for the National Physical Therapy Exam (NPTE). This will help him know how to prepare for this test.

For Rogers Medical Institute:

- Provide Derek with more time to complete exams.
- When possible, provide lecture slides or guided notes for Derek to use during lectures.
- Do not penalize Derek for misspellings in written work.
- Provide Derek with access to and training in using a computer with a screen reading program and voice synthesizer, if available.

Summary and Discussion

This ASB provides a brief overview of the Core-Selective Evaluation Process (C-SEP) framework and illustrates how the WJ IV (Schrank, McGrew, & Mather, 2014a) fits within the C-SEP framework. C-SEP is a third-method approach used to identify a specific learning disability through the establishment of a PSW, rooted in contemporary CHC theory (Stephens-Pisecco & Schultz, 2017). In this approach, an evaluator first administers a set of "core" norm-referenced tests, and if necessary, "selective" additional tests can be administered to further investigate areas of relative weakness. The process requires the application of professional judgment (Schultz & Stephens, 2009), integrated data-analysis techniques (McMillian & Schumacher, 2010; Schrank et al., 2017; Schultz et al., 2012), and the use of statistical evidence to help guide decisions (Schrank et al., 2017).

Guidance around the flexibility of the C-SEP model was presented for cases where limited language proficiency and/or a language disorder are suspected and for evaluators who use only the WJ IV OL or WJ IV ACH (e.g., schools using RTI). Case studies were presented to illustrate the application of the C-SEP with the WJ IV for one student in elementary school, one student in middle school, and one adult. These case studies demonstrate how the WJ IV core test scores serve as the norm-referenced data for the foundation of a comprehensive report.

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