



Psychological Assessment Rounds Presented by PAR, December Session— ADHD, LD, or Both?

Questions & Answers

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Q: If a child is medicated and functioning very well, to the point that the ADHD is not affecting them educationally, would the child still be considered as a child with disability? Would the decision be different if it is an initial evaluation (no history of educational impact) or a reevaluation (history of ADHD affecting education)?

If a student with ADHD is functioning well academically, they may not qualify for an IEP. Instead, a 504 plan is of recommended. It is often the case that students with a clinical diagnosis of ADHD do not show educational impact, thus do not qualify for an IEP under IDEA.

In our case, the student is well treated for ADHD symptoms. He has a mildly elevated score on the [BRIEF2](#) Working Memory scale, a good predictor of the presence of ADHD overall. The mild elevation attests to the impact of his treatment. It is not clear that his symptoms have an impact on school performance. Were it not for the clear learning disability, he might be more appropriately served via a 504 plan.

Q: What are your thoughts on using continuous performance tests when looking at ADHD?

A continuous performance test (CPT) is a performance measure and should be complemented with behavior measures. Behavior ratings from multiple settings are very much needed to truly capture the symptoms and functional impact of ADHD. Like any performance measure, CPTs can add useful information in the context of a comprehensive evaluation. It is important to recognize, however, that they are not particularly helpful in identifying individuals with ADHD diagnoses. Numerous studies have shown that CPTs have an overall accuracy of 50% or less (area under the curve) and detect less than half of cases that are diagnosed with ADHD of either type. CPTs are not specific to ADHD, but can reveal problems with response time consistency, inattention, or response inhibition that could contribute to ADHD but also could reflect numerous other diagnoses. If someone does poorly on a CPT, then they might indeed be having trouble sustaining attention and inhibiting impulse. However, doing well on a CPT does not at all rule out the possibility of these problems in everyday real life.

This is a challenge with most performance measures—when someone does poorly, this may indicate cognitive regulation issues. That does not translate well, however, into the diagnostic world, which is based on behaviors for ADHD. Combining performance measures with behavior measures is important in detecting or ruling out ADHD.

For more on CPTs, check out this book:

Riccio, C. A., Reynolds, C. R., & Lowe, P. A. (2001). *Clinical applications of continuous performance tests: Measuring attention and impulsive responding in children and adults*. John Wiley & Sons Inc.

Q: Would you diagnose LD using only the [Feifer Assessment of Reading \(FAR\)](#) and not the Kaufman Test of Educational Achievement, 3rd Ed. (KTEA-3) or the Wechsler Individual Achievement Test-4 (WIAT-4)?

Absolutely! The FAR is a comprehensive measure of the processes that contribute to reading. Academic batteries are good at measuring what they were designed to measure—reading, writing, and math skills relative to expectations. The FAR does not attempt to measure the same outcomes but provides a detailed examination of the components that go into reading. For my assessments, I rely on an academic battery to measure current skills and then a processing measure such as the FAR to take a closer look at the underlying processes that contribute to reading problems. This addresses two of the IDEA methods for identifying SLD: discrepancy from expectations and processing strengths and weaknesses.

Q: What recommendations to the school would you propose for this child?

We discussed using a litany of “top down” and more balanced reading strategies, including the Wilson program and Read 180.

Q: Is there research to suggest that medication affects reading or learning disorder measures (separate from ADHD symptoms)?

We included students with ADHD in our clinical sample for the FAR. They had difficulty on some of the subtests that placed more emphasis on attention. This suggests that ADHD can interfere with performance on some processing measures in the absence of reading disorders.

A short review of the very small literature examining effects of stimulant treatment on reading in students with ADHD found mixed results. There is little-to-no evidence that stimulant treatment improves reading directly. There is evidence to suggest, however, that by managing the ADHD symptoms with treatment, students are able to make better progress with appropriate reading interventions. The following article may be helpful:

Gray, C., & Climie, E. A. (2016). Children with attention deficit/hyperactivity disorder and reading disability: A review of the efficacy of medication treatments. *Frontiers in Psychology*, 7, 988.

Q: With regards to the graphomotor deficits, would you consider a clinical developmental coordination disorder diagnosis?

Yes. I would also want an occupational therapist to evaluate any motor concerns.

Q: Before diagnosing, don't we have to take into account that there was a lack of access to education during the pandemic? A huge number of students would be classified.

Yes, we do. As Peter indicated in the webinar, there was a significant decrease in reading and math scores last year. However, this was a reevaluation and the student was diagnosed with ADHD and LD in second grade, prior to the pandemic. However, the FAR is likely less susceptible to reduced education (e.g., the pandemic) because it is a diagnostic measure that looks at the underlying processes. This contrasts with a traditional achievement test that compares a child's reading skill development with like-aged peers. Traditional achievement tests measure *where* the student is functioning and are more susceptible to academic interruptions than are processing deficits as measured by diagnostic assessments like the FAR.

Q: Should you assess a student when they are medicated if they are medicated in school?

Testing a student with and/or without medication on board depends on a few things. First, it is important to make sure the parent has checked with the child's physician to make sure it is okay to withhold medication if that is the plan. Second, if the question is whether or not medication appears useful and is effective, then evaluating the student with medication on board and again without can sometimes be helpful in seeing the effects. Just as importantly, however, would be to measure whether parents and teachers notice a difference at home and in school via repeat administration of a measure that is sensitive to treatment effects in ADHD. If the purpose is to measure cognitive or academic functioning and the child is already known to benefit from medication, then it is likely more appropriate to assess those functions while the child is treated. This helps see functions such as reading, phonological processing, and rapid naming under optimal conditions and without interference of inattention and impulsivity.

Q: How is the FAR different from the Process Assessment of the Learner 2 (PAL-II)?

Both tests are diagnostic achievement tests. However, the FAR is more contemporary (the PAL-II was normed in 2007) and is based on a 4-factor subtype model of reading disorders. It also has an interpretive score report linked to scores of interventions.

Q: I understand the FAR to operate on end-of-year norms. How do we apply this assessment in line with the knowledge that the student missed significant instructional time during COVID or even in normal times when we are examining a student's performance at the beginning of the school year?

Good question. The FAR is not a traditional achievement test, but rather a diagnostic achievement test. Traditional achievement tests measure *where* the student is functioning and are much susceptible to academic interruptions due to the pandemic. The FAR measures *why* a student is struggling and is therefore tied into neurocognitive processing, which is not impacted as much by loss of instruction. The norms are not necessarily based upon end of the year. It would be helpful to have spring and fall norms to address time of year assessed.

Q: How long do the FAR and [Feifer Assessment of Writing \(FAW\)](#) take to administer?

I would allow 1 hour for each. The screening measures take about 15 minutes each.

Q: I have had a case with average phonographic processing but significant deficits in orthographic processing. What, beside the FAR, can be used to measure orthographic processing?

Both the KTEA-3 and WIAT-4 measure aspects of orthographic processing. Also, Nancy Mather has a test called the Test of Orthographic Competence.

Q: Would you rule out the math computation as an SLD given that this was chalked up to be working memory and possible pandemic impact? Or would math be on the table too, given that significant difficulty with computation?

I felt the math was more a reflection of working memory issues and the pandemic rather than a stand-alone math disability. Many kids are really struggling with math due to academic loss last year. Regardless, we made sure to include math goals on the IEP.

Q: What is the processing deficit for the SLD in reading eligibility?

We look for deficits in phonological processing, orthographic processing, and verbal fluency, including naming speed, working memory, and executive dysfunction as the primary processes involved in reading.

Q: For kids with an overall IQ in the 80s who achieve standard scores in academic areas in the 70s–80s, is that considered LD?

This is where we can get into trouble when translating from functional diagnoses, such as problems with phonological processing and rapid naming, to educational handicapping conditions, specifically specific learning disability. How you make that translation depends very much on your state or district rules and their adopted model. IDEA currently states that:

1. A discrepancy between intellectual functioning and academic scores cannot be required for identification.
2. A response-to-intervention approach must be allowed.
3. A processing strengths and weaknesses approach may be permitted.

In essence, states are not supposed to be using a discrepancy model in isolation to determine the presence of a learning disability. That said, many states rely on this method. As much as we like to dismiss this model, it offers reasonable statistical prediction for detecting the presence of SLD. Regression models using a discrepancy formula would likely expect academic scores in the low end of the average range (i.e., 85–95) for a student with an IQ score in the 80s. Thus, lower academic scores in the 70s and 80s might be significantly discrepant.

This is where adding or examining the underlying processing issues, namely phonological awareness, orthographic processing, and rapid naming, adds certainty to our prediction. Additionally, tracking a student's response to intervention, that is, whether or not they have made progress with appropriate intervention, also adds certainty to the model.

It is important to keep in mind that identification of educationally handicapping condition such as a specific learning disability is not a diagnosis but is an educational administrative decision-making tool. Though we are offering one of 13 educational "diagnoses," in reality we are determining the allocation of resources. There are limited resources for individualized education, or special education, and school administrative units must determine which students require these additional resources. Without some

tool for determining eligibility, who would get these additional resources? They would likely vary widely from district to district, and might vary within the district between schools, and even in the school from classroom to classroom. Thus, we must have a set of rules to promote fairness. However, any decision point that allocates these resources will have false positives, or children who don't really need the services but are mistakenly identified and receive the services. More importantly, there will be false negatives. This latter category, children who do need services but don't receive them because they did not meet our cutoff criteria, are the cases we need to be very careful not to miss. The long-term damage emotionally, vocationally, financially, and socially to a child with a disability who is not appropriately treated can be substantial (for example, Larry P.). In my work with children who are deaf or hard of hearing, I see this quite frequently—children who are identified with hearing loss, but whose learning disabilities, autism spectrum disorders, or even intellectual disabilities are not noted and addressed. The long-term implications are substantial.

Though we each must follow our state rules, I prefer considering all three sources of information. In most cases, they should converge. That is, children with an SLD in reading should have a deficit in reading skill that is below expectation based on age, grade, experience, and cognitive function. They should also have an underlying processing deficit that explains the problem with reading, and appropriate intervention, such as evidence-based reading instruction, should not have improved the reading skills to within the expected range. In this way, all three approaches within IDEA converge to help us be more sure of our decision making about allocating resources.

Q: Why again are rapid automatic naming difficulties related to reading, spelling, and math deficits?

Rapid automatic naming is associated with the ventral stream of the brain and allows a student to quickly assign a verbal tag to a visual stimulus. It is a good predictor of reading fluency and math fact automaticity.

Rapid naming tasks are quick, easy, and typically fun for students. I often start with a quick interview, for example, asking the child's name and how to spell their last name. I often learn right away that spelling is a problem. I ask about their birthday, the current date (often to check myself), and then have them say the alphabet as fast as they can, the days of the week, and months of the year (third grade and up). If any of these are weak, I ask them to write their alphabet, in small letters across the page, as if it were one word, and just as they start to write, ask them to close their eyes. This removes the visual feedback and stresses both their knowledge of the alphabet in order and the graphomotor letter making component, which also should be automatic. It places a double demand for automaticity with a simple task. This is qualitative, but there are plenty of quantitative measures.

The FAR has rapid naming tasks built in, and I often use the [screening form](#) to check rapid naming and quickly check phonological processing. You can also see rapid naming on some executive function tasks, most clearly on the [Stroop](#) task. The first task within a Stroop is to name colors as quickly as possible, and then read printed words of colors as quickly as possible. If either of these or both of these are lower than expected, then the Stroop task is no longer an executive task but suggests weaknesses in rapid naming.

In order to read, write, and calculate fluently, children must make basic facts and skills automatic. They have to move beyond looking at a letter, thinking about what sound goes with that letter, looking at the letter next to it and thinking about what sound goes with that letter and if the two together change the sound (e.g., p + h = f), and eventually figure out the word. In other words, letter–sound association have to become automatic in order for children to move on to word reading. Reading whole words, and even phrases, also becomes automatic. When we as mature readers approach text, we are often glancing across the first few lines of a paragraph, scanning down the left column, reading a few lines partway across the middle of the paragraph, then continuing to the end, down the leftmost column. We do not read individual words and we don't usually read all sentences in a paragraph unless the material is demanding and we need to understand it in detail. When we write, we write at a whole-word level, not thinking about the letters that go into words and how to form them. This is because so many processes have become automatic.

For math, number recognition and math fact learning also has to become automatic. When you see a third grader who is adding numbers on their fingers, this suggests a problem with automaticity. They will have difficulty moving beyond simple addition and subtraction because they have to stop and calculate basic addition facts. One of the later-developing automatic skills is multiplication. Children have to make the multiplication tables automatic in order to focus on math problem solving rather than simple calculations. I often ask children, after having them say the alphabet quickly, how much is 5×5 (because it is easy) and then how much is 8×7 (because it is more difficult). This helps quickly screen for automaticity in a qualitative way.

We all rely on automatic skills, knowledge, and routines. By the time we are finished with our psychology internships, administration of our basic toolkit should be approaching automaticity. After a year or two of between 30 and 80 assessments during the school year, we should be automatic. This allows us to use our attentional resources to pay close attention to what the child is doing, their mood, and other clinical information while simultaneously, and quite automatically, administering a measure accurately.

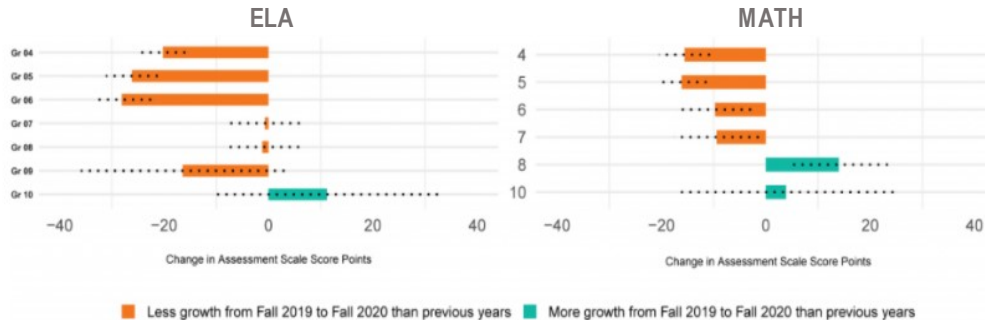
Q: Peter, of the 30 percent loss you mentioned due to the pandemic, is it broken down if reading, math, or writing was more impacted? Or is it across the board?

Below is a slide from our previous discussion on learning disabilities. Although a 30% loss of education is a global estimate with a lot of variability, it aligns with what educational researchers predicted at the start of the pandemic. You can do a deeper dive into this data from Libby Pier and colleagues at the CORE collaborative:

Pier, L., Hough, H. J., Christian, M., Bookman, N., Wilkenfeld, B., & Miller, R. (2021, January 25). *COVID-19 and the educational equity crisis: Evidence on learning loss from the CORE Data Collaborative [Commentary]*. Policy Analysis for California Education. <https://edpolicyinca.org/newsroom/covid-19-and-educational-equity-crisis>

PANDEMIC ASSOCIATED WITH LOSS IN ELA AND MATH

Figure 2b. Learning change on the STAR assessment



Typical yearly growth in ELA is 100 points. Math varies by grade.

(Pier et al., 2021)



Q: Can you send intervention resources for cases?

Please refer to our new book released last week, [*The Neuropsychology of Reading Disorders: A Compendium of Research-Based Interventions*](#).

Q: Does the [BRIEF-A](#) have similar explanation of variance as the BRIEF2?

Behavior ratings of ADHD characteristics will naturally explain much more variance between groups with ADHD versus typically developing simply because both are behavioral. That is, ADHD is based on behaviors and the BRIEF-A measures behaviors. Performance tests do not explain much variance in ADHD compared with a measure like the BRIEF-A.

Profiles are similar in adults with ADHD on the BRIEF-A as well. The table below from a study by Biederman et al. (2011) looked at BRIEF-A profiles in treatment-naive adults who showed evidence of ADHD and executive function performance deficits on tests and in ADHD without performance deficits. The mean *T* scores are elevated on the Inhibit scale and markedly so on the Working Memory scale followed by the Plan/Organize and Task Monitor scales. This profile is very much like that seen in children diagnosed with [ADHD on the BRIEF2](#).

Biederman, J., Mick, E., Fried, R., Wilner, N., Spencer, T. J., & Faraone, S. V. (2011). Are stimulants effective in the treatment of executive function deficits? Results from a randomized double blind study of OROS-methylphenidate in adults with ADHD. *European Neuropsychopharmacology*, 21(7), 508–515.

Table 1 Definition of executive function deficit (EFD) in adults with ADHD.

		ADHD+ EFD (N= 35)	ADHD (N=52)	p-value
<i>BRIEF-A</i>				
Inhibition	<i>T</i> -score	65.6±8.3	69.9±9.8	0.0328
	>65	18 (51)	41 (79)	0.007
Shift	<i>T</i> -score	62.0±12.1	60.5±11.7	0.565
	>65	16 (46)	19 (37)	0.433
Emotional Control	<i>T</i> -score	52.3±9.3	57.4±12.2	0.0415
	>65	3 (9)	15 (29)	0.022
Self-Monitor	<i>T</i> -score	56.9±10.8	61.6±11.7	0.0642
	>65	6 (17)	20 (39)	0.033
Initiate	<i>T</i> -score	63.9±10.6	66.8±10.8	0.2186
	>65	15 (43)	33 (63)	0.058
Working Memory	<i>T</i> -score	78.2±8.5	78.9±8.3	0.7021
	>65	33 (94)	50 (96)	0.683
Plan/Organize	<i>T</i> -score	71.3±11.4	73.7±11.7	0.3497
	>65	25 (71)	41 (79)	0.428
Task Monitor	<i>T</i> -score	73.8±10.2	75.5±10.7	0.4639
	>65	29 (83)	44 (86)	0.664
Organization of Materials	<i>T</i> -score	65.1±10.3	67.4±12.1	0.3471
	>65	20 (57)	30 (58)	0.959

Q: I am curious about how you understand the notable deficit in auditory working memory and the normal learning and memory. How do you explain low working memory on all other measures, but then all average scores on the [Child and Adolescent Memory Profile \(ChAMP\)](#)?

The ChAMP takes a unique approach to assessing memory. It specifically excludes measures of working memory and focuses on learning and memory for textures, location, words, and sentences, in keeping with the authors’ review of the literature on memory. It is useful to examine both learning/memory and working memory.

Q: What do you recommend for strategies or interventions to address deficits in working memory/reading?

I have numerous strategies in my book, but here is a good one—stop and start technique. Have the student read for 30 seconds and say “STOP.” Ask a couple of questions, and when the student can consistently answer them, increase the time interval by 30 second increments.

Q: What are your recommendations for supporting this student, knowing that they have received common special education services already? More phonological processing or orthographic mapping training?

We discussed using a litany of “top down” and more balanced reading strategies including the Wilson program and Read 180.

Q: What are the best reading programs you are now recommending for dyslexia (for 7-to-12-year-olds)?

Please refer to our new book released last week, [*The Neuropsychology of Reading Disorders: A Compendium of Research-Based Interventions*](#).

Q: How do you address ocular motor dysfunction in reading? Just refer out before the final diagnosis?

This is a very common diagnosis we see given to kids by ophthalmologists, which unfortunately leads to visual therapy training for reading. Visual therapy is not an intervention supported in the literature to improve reading, though it does assist with eye tracking.

Remember, dyslexia is a linguistic issue, not a visual–spatial one. Vision only addresses the input of information that eventually needs to be processed and coded linguistically by the brain. I like the low-tech solutions that my SPED teachers use—simply read with a 3x5 card with a picture window cut out in the center to prevent eye gaze from wandering.