



HOW DO YOU SCREEN FOR DYSLEXIA?

Dyslexia is a specific learning disability that is neurological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction.

Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge.

Adopted by the IDA Board of Directors, November 12, 2002. This definition is also used by the National Institute of Child Health and Human Development (NICHD).

It is important to identify the potential indicators for dyslexia before reading problems develop in young children.

Recent legislation in NJ has mandated screening for any student who has exhibited one or more potential indicators of dyslexia or other reading disabilities no later than the student's completion of the first semester of the second grade. While this law does not indicate a specific schedule for assessment, current best practice in identifying these potential indicators is the use of a universal screener developed by researchers for the purpose of locating students who are "at risk" for reading difficulty with all children in a school, beginning in kindergarten.

For information about appropriate reading screening and dyslexia, please refer to the attached documents in the appendix:

Appendix A: Potential Indicators of Dyslexia – Learning Ally Checklist

Appendix B: Testing and Evaluation – International Dyslexia Association Fact Sheet

Appendix C: Selecting Screening Instruments – Literate Nation White Paper

Appendix D: Chapter 210 – New Jersey Legislation

The purpose of screening is to identify students who are not mastering the specific skills which correlate with broader reading achievement. The screening tools chosen must be sensitive to a student's current level of reading development. For example, the skills which are valid for assessment in kindergarten will be different than those valid in second grade. It is important to ensure that the individuals responsible for delivering these screening measures are trained in the protocols for the tool's implementation as well as knowledgeable about the current research on reading development.

Any student identified as "at risk" should be placed into an appropriate evidence-based intervention which matches to their specific areas of need immediately. The National Reading Panel report recommends reading programs that include direct explicit instruction in phonemic awareness, phonics, fluency, vocabulary and comprehension. For students showing difficulty in accurate and/or fluent word recognition, decoding, spelling, and phonological, rapid automatized naming (RAN), and orthographic processing, it will be important to choose an intervention that meets the requirements of a multisensory structured language program.

Appendix E: Multisensory Structured Language Teaching – International Dyslexia Association Fact Sheet

Any student that does not show a timely, appropriate response to this intervention should be referred for a full comprehensive educational evaluation.



Pre-K to Grade 2

What Are the Potential Indicators of Dyslexia?

Dyslexia runs in families. Is there a family history of reading or learning struggles?

If the student displays several of these potential indicators, check off the warning signs that apply and schedule a parent/teacher meeting to discuss the student’s early reading skill development. Dyslexia does not come and go and it persists over time but with proper identification and support, the student will learn to read and be better able to succeed in school and in life. The sooner a student’s dyslexia is identified, the better the results will be, so trust your observations and move forward with a reading screening to gain additional information if needed.

LANGUAGE

- ☐ Delayed speech
- ☐ Trouble learning the alphabet, numbers, and days of the week
- ☐ Difficulty rapidly naming people and objects
- ☐ Lack of interest in stories and books
- ☐ Mispronouncing words
- ☐ Difficulty using new vocabulary words correctly
- ☐ Trouble distinguishing words from other words that sound similar
- ☐ Struggles to identify or produce words that rhyme

READING

- ☐ Difficulty naming and recognizing the letters of the alphabet
- ☐ Problems matching letters to their correct sounds
- ☐ Below expected reading level for his/her age
- ☐ Trouble understanding the difference between sounds in words
- ☐ Difficulty blending letter sounds within words
- ☐ Trouble recognizing and remembering sight words
- ☐ Confusing letters and words that look similar
- ☐ Loses his/her place—and skips over words—while reading
- ☐ Avoids reading tasks

WRITING

- ☐ Problems copying and writing at an age-appropriate level
- ☐ Confusing the order or direction of letters, numbers and symbols
- ☐ Spelling words incorrectly and inconsistently most of the time
- ☐ Tendency to spell phonetically
- ☐ Poor ability to proofread and correct written work
- ☐ Handwriting shows poor letter formation and placement

SOCIAL/EMOTIONAL

- ☐ Lack of motivation about school or learning
- ☐ Lack of confidence in learning
- ☐ Negative self-image compared to grade-level peers
- ☐ Expresses dislike for reading and other academic tasks
- ☐ Exhibits anxiety or frustration

OTHER

- ☐ Poor sense of direction/spatial concepts, such as left and right
- ☐ Performs inconsistently on daily tasks
- ☐ Appears distracted and unfocused

To speak with an experienced parent about these early warning signs, contact a Learning Ally Parent Support Specialist at 800.635.1403



Grade 3 – 8

What Are the Potential Indicators of Dyslexia?

Dyslexia runs in families. Is there a family history of reading or learning struggles?

If the student displays several of these potential indicators, check off the warning signs that apply and schedule a parent/teacher meeting to discuss the student's early reading skill development. Dyslexia does not come and go and it persists over time but with proper identification and support, the student will learn to read and be better able to succeed in school and in life. The sooner a student's dyslexia is identified, the better the results will be, so trust your observations and move forward with a reading screening to gain additional information if needed.

LANGUAGE

- ☐ Speech is choppy and disfluent
- ☐ Makes grammar or vocabulary errors when speaking
- ☐ Difficulty rapidly naming people and objects
- ☐ Lack of interest in stories and books
- ☐ Mispronouncing words
- ☐ Difficulty using new vocabulary words correctly
- ☐ Trouble distinguishing words from other words that sound similar
- ☐ Struggles to identify or produce words that rhyme

READING

- ☐ Poor decoding and word identification skills
- ☐ Tends to guess at words
- ☐ Poor oral reading fluency skills
- ☐ Difficulty understanding what he/she read
- ☐ Trouble recognizing and remembering sight words
- ☐ Slow growth in vocabulary and background knowledge
- ☐ Confusing letters and words that look similar
- ☐ Skips over or transposes words while reading
- ☐ Avoids reading tasks
- ☐ Problems reading the word problems in math

WRITING

- ☐ Problems copying or taking notes
- ☐ Confusing the order or direction of letters, numbers and symbols
- ☐ Spelling words incorrectly and inconsistently most of the time
- ☐ Tendency to spell phonetically without applying spelling rules
- ☐ Poor ability to proofread and correct written work
- ☐ Poor handwriting
- ☐ Difficulty organizing writing assignments
- ☐ Uses less complex vocabulary, grammar and sentence structure

SOCIAL/EMOTIONAL

- ☐ Lack of motivation about school or learning
- ☐ Lack of confidence within peer group
- ☐ Feels embarrassed or shame over academic struggles
- ☐ Expresses dislike for reading and other academic tasks
- ☐ Exhibits anxiety or frustration

OTHER

- ☐ Poor sense of direction/spatial concepts, such as left and right
- ☐ Performs inconsistently on daily tasks
- ☐ Appears distracted and unfocused
- ☐ Poor memory for facts, numbers or sequences

To speak with an experienced parent about these early warning signs, contact a Learning Ally Parent Support Specialist at 800.635.1403

TESTING AND EVALUATION

When a child is struggling to read, someone will probably suggest that he or she be tested for dyslexia. What does it mean to be tested? You might think that of a test as something you take in an afternoon. Someone scores it and tells you how you did. *Evaluation* is a more accurate word to describe the process of determining if someone has dyslexia. The word *evaluation* encompasses identification, screening, testing, diagnosis, and all the other information gathering involved when the student, his or her family, and a team of professionals work together to determine why the student is having difficulty and what can be done to help.

Why is evaluation important?

An evaluation is the process of gathering information to identify the factors contributing to a student's difficulty with learning to read and spell. First, information is gathered from parents and teachers to understand development and the educational opportunities that have been provided. Then, tests are given to identify strengths and weaknesses that lead to a diagnosis and a tentative road map for intervention. Conclusions and recommendations are developed and reported.

When a student is having difficulties with reading and spelling, an evaluation is important for **three reasons**.

1. **Diagnosis** An effective evaluation identifies the likely source of the problem. It rules out other common causes of reading difficulties and determines if the student profile of strengths and weaknesses fit the definition of dyslexia.
2. **Intervention planning** An effective evaluation develops a focused remedial

program. Students who have a specific learning disability in reading (dyslexia) need a specialized approach to reading instruction to make progress. It is crucial that this specialized instruction begin at the student's current level of reading skill development, rather than at the student's grade level. An effective evaluation helps parents and teachers see which specific skills are weak and where reading and spelling instruction should begin.

3. **Documentation** An effective evaluation documents the history of a student's learning disability. One purpose of this documentation is to determine eligibility for special services, including special education. Documentation is also important for obtaining accommodations on college entrance exams (ACT, SAT), in college, or in the workplace.

When should a child be evaluated?

It is possible to identify potential reading problems in young children even before the problems turn into reading failure. Screening tests, such as Predictive Assessment of Reading (PAR); Dynamic Indicators of Basic Early Literacy Skills (DIBELS); Texas Primary Reading Inventory (TPRI); and AIMSweb screening assessments, developed by researchers for those purposes should be used with all children in a school, beginning in kindergarten, to locate those students who are "at risk" for reading difficulty. Preventive intervention should begin immediately, even if dyslexia is suspected. How the child responds to supplementary instruction will help determine if special education services are justified and necessary.

Before second grade, it is more important to focus an evaluation on the precursors of reading

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development. Measures of language skills, phonological awareness, memory, and rapid naming are more suggestive of being at-risk for dyslexia among young children than are measures of word reading, decoding, and spelling. Therefore, measures of phonological awareness, memory, and rapid naming are typically included in Kindergarten and beginning first grade screening tests that can identify children who need targeted intervention to improve these critical skills so these children can meet grade-level benchmarks. Although there are many tests that may be used early (in Kindergarten and beginning of first grade) to assess beginning skills in reading and spelling, the standards for average achievement are generous. A child in late kindergarten or early first grade may only need to read a few letters and two or three common words to score well enough to reach a score of “average.” Compared to other young learners, students with dyslexia may not seem to be “behind.” Further, even if achievement is found to be low or poor it does not explain why the child may not be learning as expected.

By January or February of first grade, tests of early word reading, decoding, and spelling begin to be useful in providing information about what the student has learned and what gaps in knowledge exist. This information may be used to plan instruction and guide ongoing assessment.

What should be included in the evaluation?

The following areas should be considered when carrying out an evaluation.

Background information

Information from parents and teachers tells us a lot about a student’s overall development and pattern of strengths and weaknesses. Because dyslexia is genetically linked, a family history of dyslexia indicates that a student is more likely to have dyslexia. A history of delayed speech or language also puts a child at-risk for reading difficulties. It is important to know the types and length of time of any interventions the student has

received at school, home, or through tutoring, as well as the student’s response to the intervention. School attendance problems should be ruled out. A history of poor attendance, alone, can explain an identified weakness in skill development.

Intelligence

Until recently, an intelligence test was considered to be a necessary part of the evaluation because the diagnosis of a learning disability was based on finding a significant difference between IQ and reading skill. Poor achievement despite average or better intelligence was considered a key indicator. Current regulations no longer require that such a discrepancy be present when making a diagnosis. This change in the regulations came about because many studies have shown that intelligence is not the best predictor of how easily a student will develop written language (reading and spelling) skills. Instead, oral language abilities (listening and speaking) are considered the best predictors of reading and spelling.

A formal measure of intelligence is not always needed to document average intellectual abilities. For younger children, parent information about language development and teacher information about the child’s ability to learn orally may indicate average intellectual abilities. For older students or adults, past achievement in school or work may indicate at least average intelligence.

Oral language skills

Oral language, simply stated, refers to our ability to listen to and understand speech as well as to express our thoughts through speech. Oral language is made up of low-level skills, such as recognizing and making the sounds within our speech, and higher-level skills, such as getting meaning by listening to someone speak or creating sentences to express thoughts. Students with dyslexia typically have adequate higher-level language skills. Indicators of higher-level oral language skills include being able to understand an age-appropriate story and spoken directions, to carry on a conversation, and to

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understand and use words that are age appropriate. If a student has average higher-level oral language skills but much difficulty developing written language (reading and spelling) skills, the need for evaluation for dyslexia is recommended.

Although students with dyslexia usually have strong higher-level language skills, they typically have problems (a deficit) in low-level language skills (see following section “Phonological processing”). This deficit limits the ability to learn to read and spell using the sounds of the language. Young children with dyslexia often have delays in language development, but their higher-level language skills are usually age-appropriate by the time they enter school. Difficulties with higher-level language skills suggest a need for a language evaluation by a speech-language pathologist to rule out language impairment.

Word recognition

Word recognition is the ability to read single printed words. It is also called word reading or word identification. Tests of word recognition require that students read individual words printed in a list. The student is not able to use cues, such as the meaning of a sentence, to help them figure out the word. Tests of word recognition that score both accuracy and the time it takes for the student to read the words (fluency) are particularly useful. Students with dyslexia often become accurate but are still very slow when reading words. Both accuracy and the speed of word reading can affect understanding what is read.

Decoding

Decoding is the ability to read unfamiliar words by using letter-sound knowledge, spelling patterns and chunking the word into smaller parts, such as syllables. Decoding is also called “word attack”. Decoding tests should use nonsense words (words that look like real words but have no meaning, such as *frut* or *crin*) to force the

student to rely on these decoding skills rather than on memory for a word already learned.

Spelling

Tests of spelling measure the student’s ability to spell individual words from memory using their knowledge of, for example, letter-sound pairings, patterns of letters that cluster together to spell one sound (*igh* in high; *oa* in boat), the way plurals may be spelled (s, es, ies) and so on. Spelling is the opposite of word attack but is even more difficult. It requires separating out the individual sounds in a spoken word, remembering the different ways each sound might be spelled, choosing one way, writing the letter(s) for that sound and doing the same, again, for the next sound in the word. Spelling stresses a child’s short and long-term memory and is complicated by the ease or difficulty the child has in writing the letters, legibly and in the proper order. Spelling is usually the most severe weakness among students with dyslexia and the most difficult to remedy.

Phonological processing

Phonology is one small part of overall language ability. It is a low-level language skill in that it does not involve meaning. Phonology is the “sound system” of our language. Our spoken language is made up of words, word parts (such as syllables), and individual sounds (phonemes). We must be able to think about, remember, and correctly sequence the sounds in words in order to learn to link letters to sounds for reading and spelling. Good readers do this automatically without conscious effort. However, students with dyslexia have difficulty with identifying, pronouncing, or recalling sounds. Tests of phonological processing focus on these skills.

Automaticity/fluency skills

Students with dyslexia often have a slow speed of processing information (visual or auditory). Tasks measure Naming Speed (also called Rapid Automatic Naming). Sets of objects, colors, letters, and numbers are often used. These items are presented in rows on a card, and the student is

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asked to name each as quickly as possible. Naming speed, particularly letter naming, is one of the best early predictors of reading difficulties. Therefore, it is often used as part of screening measures for young children. Slow naming speed results in problems with developing reading fluency. It also makes it difficult for students to do well on timed tests. Students with both the naming speed deficit and the phonological processing deficit are considered to have a “double deficit.” Students with the double deficit have more severe difficulties than those with only one of the two.

Reading comprehension

Typically, students with dyslexia score lower on tests of reading comprehension than on listening comprehension because they have difficulty with decoding and accurately or fluently reading words. It is important, however, to be aware that students with dyslexia often have strong higher-level oral language skills and are able to get the main idea of a passage despite difficulty with the words. Further, reading comprehension tasks usually require the student to read only a short passage to which they may refer when finding the answers to questions. For these reasons, students with dyslexia may earn an average score on reading comprehension tests but still have much difficulty reading and understanding long reading assignments in their grade-level textbooks.

Vocabulary knowledge

It is important to test vocabulary knowledge, because vocabulary greatly affects understanding when listening or reading. Difficulties students with dyslexia might have had in learning language or with memory can affect the ability to learn the meanings of words (vocabulary). Independent reading is also an important means for developing new vocabulary. Poor readers, who usually read less, are likely to have delays in vocabulary development. It is important to note, however, that students with dyslexia may perform poorly on reading vocabulary tests because of their decoding problems and not because they don't know the meaning of some words. For this

reason, it is best to administer both a reading and listening vocabulary task to get a true measure of vocabulary knowledge.

The profile of strengths and weaknesses of an individual with dyslexia varies with age, educational opportunity and the influence of co-occurring factors such as emotional adjustment, ability to pay attention in learning situations, difficulties with health or motivation. Nevertheless, clusters of distinguishing characteristics are frequently noted.

Family History and Early Development

- Reports of reading/spelling difficulties across generations in the family
- Normal prenatal and birth history
- Delays/difficulties acquiring speech/language

Early Childhood/Primary Grades

- Difficulty with rhyming, blending sounds, learning the alphabet, linking letters with sounds
- Difficulty learning rules for spelling—spell words the way they sound (e.g., lik for like); use the letter name to code a sound (lafunt for elephant)
- Difficulty remembering “little” words—the, of, said—that cannot be “sounded out”
- Listening comprehension is usually better than reading comprehension—may understand a story when read to him but struggles when reading the story independently.

Middle and Secondary School

- Reluctant readers
- Slow, word-by-word readers; great difficulty with words in lists, nonsense words and words not in their listening vocabulary

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- Very poor spellers—miscode sounds, leave out sounds, add or leave out letters or whole syllables
- Non-fluent writers—slow, poor quality and quantity of the product
- When speaking, may have a tendency to mispronounce common words (floormat for format); difficulty using or comprehending more complex grammatical structures
- Listening comprehension is usually superior to performance on timed measures of reading comprehension (may be equivalent when reading comprehension measures are untimed)
- Weak vocabulary knowledge and use

Outcomes of an evaluation

An evaluation should result in a written report. This report should detail the kinds of information collected. This includes information related to the family literacy history, any significant medical issues the child may have, prenatal and birth conditions, and preschool development, including language learning. The education history should include information on school attendance, tests administered and test scores. These scores should be stated as standard scores. Standard scores compare the learner to others of the same age or grade. This material should provide the framework for the detailed evaluation of relative strengths and weaknesses across the various skill areas assessed as well as the overall fit of all information with the typical profile of dyslexia for the child's age. This should lead to a tentative diagnosis that states that the child's ability to learn to read, write and spell does or does not appear to be related to dyslexia. The specific evidence that supports the diagnosis should be explained in the report.

Diagnosis

A diagnosis of dyslexia begins with the gathering of information gained from interviews,

observations and testing. This information may be collected by various members of a team that includes including the classroom teacher(s), speech/language pathologist, educational assessment specialist(s), and medical personnel (if co-occurring difficulties related to development, health or attention are suspected).

The task of relating and interpreting the information collected should be the responsibility of a professional who is thoroughly familiar with the important characteristics of dyslexia at different stages in the development of literacy skills. This professional should also have knowledge of the influence of language development and behavior on literacy learning. Often, school psychologists and/or speech-language pathologists are responsible for this task.

CAUTION: An initial diagnosis of dyslexia should be offered only as a tentative conclusion based on the data available. A poor reader may appear to “fit the profile” of dyslexia. However, if the learner responds quickly to appropriate intervention, the source of the reading problem is more likely related to earlier educational opportunity than to problems in the child's physical makeup that limit the ability to learn from the instruction provided. The ability of the learner to benefit from instruction that is focused on the basic skills that support reading and spelling provides valuable information necessary to support or reject the initial diagnosis.

Intervention planning

Finally, the report should identify instructional programs that appear to be appropriate in meeting the specific skill(s) gaps and weaknesses identified through the evaluation process. Many children have already mastered some beginning reading skills. Thus, it is not always necessary or reasonable for a child to be placed in the very beginning lessons of a program. Although some programs have a placement test which helps the teacher to know where instruction should begin, many do not. For this reason, information about

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the child's specific skill needs should be detailed in the report to assist in identifying the starting point for instruction. Recommended programs or intervention strategies should be consistent with the types of content and methods that research has shown to be effective for students with dyslexia and other poor readers. If warranted, a recommendation for further testing—vision, hearing, fine motor control (occupational therapy), attention, emotional adjustment—might also be included.

Documentation

The evaluation report should provide the documentation necessary to determine eligibility for special services, including special education. The specific guidelines for determining eligibility

are based on federal regulations set forth by IDEA. It is important to note, however, that the specific criteria, such as cutoff scores for eligibility vary from state to state.

The parent or guardian of a child with dyslexia must advocate for the best possible educational opportunities for that child. Effective advocacy requires understanding the diagnostic report and knowing the child's rights under the law. Information on related topics, such as teaching methodologies, accommodations, and instructional modifications are available in other IDA fact sheets.

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A LITERATE NATION WHITE PAPER

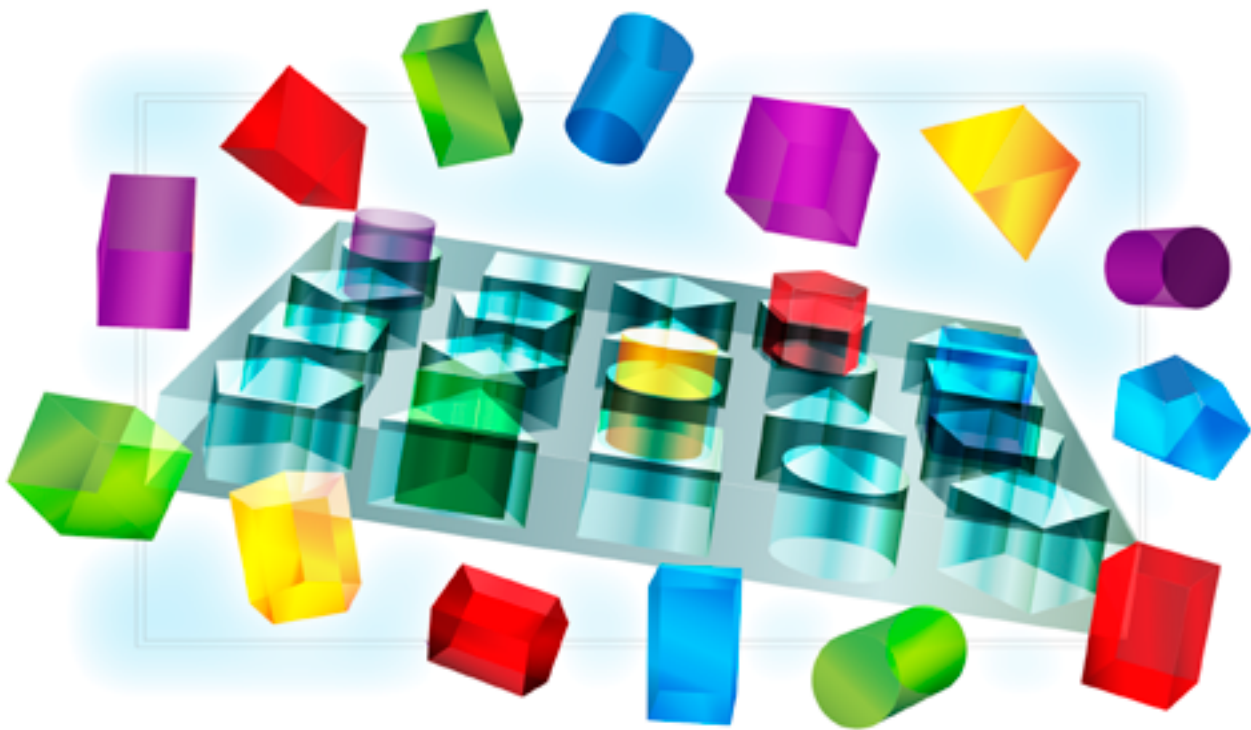


LITERATE NATION SCIENCE CORE GROUP—On the Reading Wars

Fall 2013

Selecting Screening Instruments:

Focus on Predictive Validity, Classification Accuracy, and Norm-Referenced Scoring



by Steven P. Dykstra, Ph.D.

Literate Nation Science Core Group and Board of Advisors

Selecting Screening Instruments:

Focus on Predictive Validity, Classification Accuracy, and Norm-Referenced Scoring

by Steve K. Dykstra, Ph.D.

The goal of universal, early reading screening is to identify children at risk of future failure before that failure actually occurs. By doing so, we create the opportunity to intervene early when we are most likely to be more effective and efficient. Therefore, the key to effective screening is maximizing the ability to predict future difficulties.

Distinguishing Features: Predictive Validity, Classification Accuracy, Normative Scoring

Two qualities of a screening tool relate most directly to the ability to make useful and accurate predictions: *predictive validity* and *classification accuracy*. Predictive validity is a measure of how well the prediction of future performance matches actual performance along the entire range of performance from highest to lowest, not just at or near the cut score. It answers the question, “If we used this screener to predict how every child will perform at some point in the future, how good would those predictions be?” Classification accuracy answers the question, “If we used this screener to divide our students into those considered at risk and those considered not to be at risk, how well would we do based on the outcome of their future performance?” Classification accuracy is a measure of predicting into categories while predictive validity measures predictive accuracy over a continuous range of performance. Screeners with good predictive validity will almost always have good classification accuracy, but it is possible to have good classification accuracy with less robust predictive validity.

When comparing levels of predictive validity it is important to understand how the numbers work. Validity almost always is reported as a correlation coefficient, or *r* value. When comparing these values, it is helpful to square the values, yielding an *r*² value, also known as variance. This gives a more direct comparison of the magnitude of the predictive power of the assessment. For example, a predictive validity coefficient of .8 appears to be twice as powerful as a value of .4. In fact, if we square the values

(.8 becomes .64, and .4 becomes .16) we see that the first assessment is actually four times more powerful in terms of its ability to predict future performance (64:16 = 4:1).

When comparing predictive validity it is important also to know what the screener predicted. Therefore, some assessment must be used as the benchmark of future performance. A screener that effectively predicts broad reading on a measure like the Woodcock Johnson is meeting a higher standard than a measure that predicts future performance on a brief, less comprehensive assessment. It also is true that valid predictions farther into the future are more difficult and can be evidence of a superior assessment.

Assuming a screener has good predictive validity and classification accuracy, it also is desirable for the assessment to report norm-referenced scores. Norm-referenced scores have been developed on large samples of diverse subjects and allow us to know how

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common or rare a score is. Norm-referenced scores allow us to compare scores on multiple assessments to properly judge whether we have a consistent picture of performance, or whether some of the scores are aberrant and may need special

consideration. *Normative scoring* also gives us better ability to track performance over time. Without normative scoring we only know if a child scored above or below the cut score for being considered at risk. We do not know how far they may be above or below the cut score, how much that performance may have changed over time, or how it compares to other assessment data we may have on that child. Assuming the screener has good predictive validity and classification accuracy, normative scoring always is desirable.

Reliability often is considered an important measure of the quality of an assessment. Reliability is a measure of the likelihood that if we gave the same assessment to the same child twice, under identical conditions, we would get the same results. It is certainly true that reliability is essential, but primarily in how it supports validity. All valid measures are inherently reliable, so we have assured ourselves of adequate reliability by demanding high predictive validity. Surplus reliability beyond what contributes to validity is desirable for progress monitoring, but does not make screening more effective. Predictive validity, including how far the screener predicts into the future as well as the quality of the measure being predicted; classification accuracy; and normative scoring are the major features that distinguish a superior reading screener.

We can review the quality of any screener by examining the features named above: predictive validity, classification accuracy, and normative scoring. Any screener worth considering will clearly report this data in a technical manual and should go into some detail about how the statistics were calculated. Data on many well-known and popular screeners have been collected by the National RTI center (<http://www.rti4success.org/screeningTools>). Unfortunately, much of the data is reported categorically rather than numerically, but it is possible to use this data to identify potential candidates for a screener then gather more precise data from technical manuals and other sources. Two screeners within the same category in the NRTIC table may still be very different from each other.

Review Options & Compare Screeners Without Emotion or Prejudice

Any group or individual choosing a screener is urged to make a complete review of their options and compare different screeners without emotion or prejudice. That process often is confounded by pre-existing notions of what a screener should look like or what it should include. Options are often rejected for no better reason than they do not look like what we are accustomed to or do not include some feature we may think is vital, even though the screener is measurably superior in every important way. For instance, some may prefer a screener that is timed while others may prefer a screener that is not timed. These are arbitrary preferences based on our personal impressions of what works best. We should rely on objective measures of what works best and make a careful comparison of the statistical details and qualities of our screening options, not our natural human biases and desire to use something familiar.

The most comprehensive evaluation of screening tools will consider the independence of their various subscales. It takes time to administer 5 different subscales that all yield different scores. That only is worth doing if the scales assess different skills. Ideally, all the subscales would have high correlations (e.g., around .5 or higher) with broad reading ability but relatively low correlations (e.g., .3 or lower) with other subscales. Regardless of the actual values, any comparison of different screening options should favor higher correlations with broad reading, and lower correlations between subscales. That would show that they measure vital but relatively unique aspects of reading, meaning each subscale tells you something important you did not know from the other subscales. That level of independence between subscales is very difficult to achieve and generally leads to very high predictive validity when it is accomplished.

Predictive Assessment of Reading (PAR): An Excellent Screener

As mentioned, any group or individual choosing a screener is strongly urged to investigate all of their options before making any final choice. They should consider the available data, as well as the robustness of the reported predictive validity: What does the screener predict and how far into the future can it make that prediction? Applying those principles, the science team at Literate Nation has been unable to identify a screener as good as or superior to the Predictive Assessment of Reading (PAR). PAR has superior predictive validity and classification accuracy, is norm referenced, and predicts performance farther into the future than is reported for any other screener.

Unlike other screeners, PAR uses a complex algorithm to make superior predictions of future performance. Composite scores made up of multiple subskills should have greater predictive power than individual scores. Most screeners form composite scores simply by adding subscores together, giving each subscore equal weight in the final calculation, if they form composite scores at all. PAR gives different weight to each subscore in their algorithm and changes the weights in the algorithm depending on age and level of reading development. This allows PAR to predict 1st grade performance from a kindergarten screening by giving different weight to the various subskills than would be used to predict performance in 3rd grade or 8th grade.

PAR also uses the same data used to produce the flexible algorithm to make instructional recommendations. PAR can accurately identify which of several deficient skills is most important right now, and give guidance on the intensity and duration of intervention that will be necessary to remediate it.

As a norm referenced assessment, data from PAR can be usefully compared to other assessments, and student performance can be tracked along the entire continuum of scores. This allows PAR to accurately identify gifted students and make instructional recommendations for them as well.

Other Screeners Also Are Worth Considering

Other screeners that should be considered include DIBELS (DIBLESNext), AIMSweb, and PALS, and the RAN/RAS, the classic naming speed tests. AIMsweb and DIBELS include the ability to progress monitor with very frequent probes of specific skills that assist teachers to direct instruction toward targeted areas of weakness in a student’s profile. PALS also includes a progress monitoring tool known as a quick check. Progress monitoring is a critical function when implementing multitier system supports in general

education classrooms. Only certain types of assessments can be given as often as progress monitoring sometimes requires. Any assessment plan must include progress monitoring and screeners that include a progress-monitoring component have that advantage. Users of PAR or other screeners may still opt for DIBELS or AIMSweb as a probe for progress monitoring. PALS may be a more comprehensive set of assessments, while DIBELS and AIMSweb are norm referenced and PALS is not.

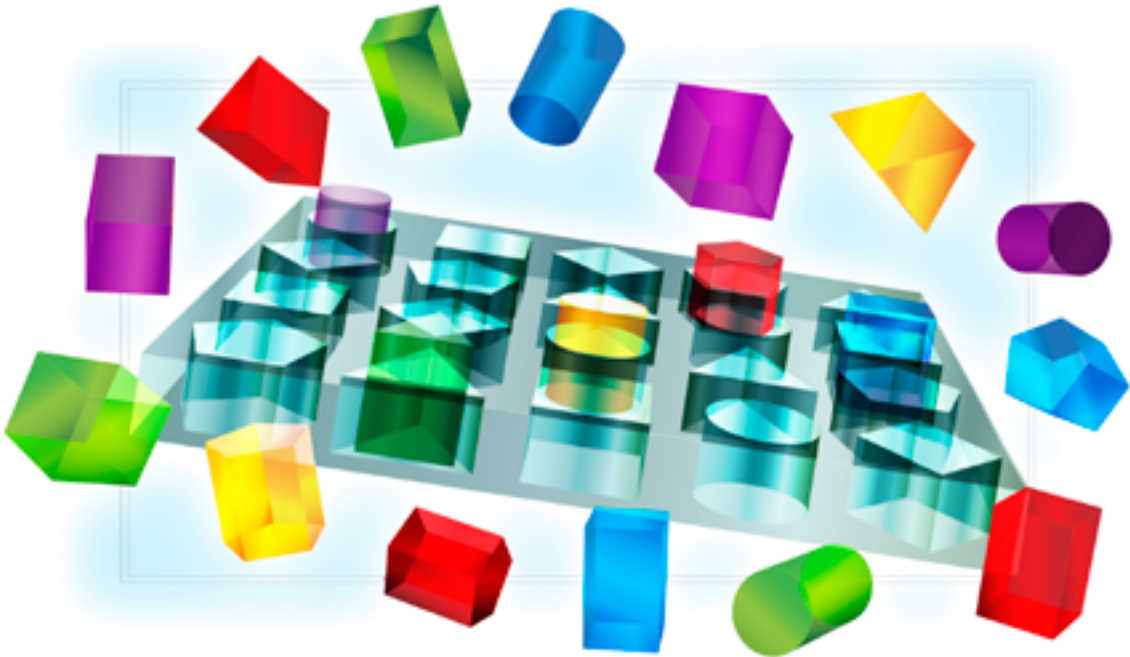
The RAN/RAS tests represent one of the most important predictors of reading ability across every writing system tested in the last three decades. Naming speed tests provide a quick, easily administered measure of the brain’s underlying ability to connect visual and verbal processes. As such, they give a very basic index of present and future issues related to word-retrieval processes and the development of fluency in reading. RAN/RAS is also an excellent example of a skill that both predicts broad reading and is independent of each other subskills. It contributes unique information to the screening data, not available through any other assessment. Many screeners use some version of the original RAN, including PAR, but often differ on: the nature and number of stimuli to name; the administrative procedures with which the norms were collected; or, the added dimension of retrieving names from different categories in the RAS. The extensive data collected on the 2005 version of the classic RAN/RAS, which now includes genetic and brain imaging studies, assures that these three dimensions are incorporated in this screener

PALS, DIBELS, RAN/RAS, and AIMSweb all have a longer track record than PAR. They have been used in more schools for more years and all of them generate useful data. How that data compares to PAR is a question that deserves careful consideration. Depending on past practices, some teachers or schools may be better prepared to make use of some data while requiring additional training to make full use of other assessments. Schools and districts with an established relationship to another screener may consider adding the RAN/RAS to other measure of phonologic processing and decoding in order to improve the range of critical skills including in screening. They could also add a simple picture vocabulary screening. The balance will always be between more information and the time it takes to gather it. However, it is good to note that in practice many schools are currently conducting assessments of multiple subskills that have very large correlations. They might do better to drop one or more of these assessments in favor of RAN/RAS, or picture vocabulary, which contribute important, unique data. At the very least, comparing all these screening assessment options puts each in useful context, and other assessments should not be dismissed simply because they are not mentioned here. Some may require more time or training to administer. Others may be statistically superior

or less expensive. Some publishers may be better equipped to provide support and help plan implementation and new assessments worthy of consideration could appear on the market at any time. There are many issues to consider. However the basic advice to gather broad, useful information which improves our ability to identify who will struggle and why, and to do so as efficiently as possible, avoiding repetitive assessment which don’t improve on what we already have, is rock solid.

Any individual, group or state education authority choosing a screener must gather their own data and make their own decision. They should ask hard questions of publishers and demand the best answers. An answer or marketing pitch that relies on emotion or suggests that some less significant feature of the test makes up for inferior statistical quality should be duly noted. Every claim for an assessment should be carefully investigated. Initial issues of training, support and familiarity may be solvable over time, but a statistically inferior assessment plan always will be so. While pragmatic concerns are real and must be considered, the first and greatest concern should be the quality of the screener in terms of predictive validity, classification accuracy, and norm referenced scoring.

Prepared for Literate Nation’s State Coalitions
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CHAPTER 210

AN ACT concerning reading disabilities among public school students and supplementing chapter 40 of Title 18A of the New Jersey Statutes.

BE IT ENACTED *by the Senate and General Assembly of the State of New Jersey:*

C.18A:40-5.1 Definitions relative to reading disabilities.

1. As used in this act:

“Potential indicators of dyslexia or other reading disabilities” means indicators that include, but shall not be limited to, difficulty in acquiring language skills; inability to comprehend oral or written language; difficulty in rhyming words; difficulty in naming letters, recognizing letters, matching letters to sounds, and blending sounds when speaking and reading words; difficulty recognizing and remembering sight words; consistent transposition of number sequences, letter reversals, inversions, and substitutions; and trouble in replication of content.

C.18A:40-5.2 Distribution of information on screening instruments.

2. a. The Commissioner of Education shall distribute to each board of education information on screening instruments available to identify students who possess one or more potential indicators of dyslexia or other reading disabilities pursuant to section 3 of this act. The commissioner shall provide information on the screening instruments appropriate for kindergarten through second grade students and on screening instruments that may be suitably used for older students. A board of education shall select and implement age-appropriate screening instruments for the early diagnosis of dyslexia and other reading disabilities.

b. The commissioner shall develop and distribute to each board of education guidance on appropriate intervention strategies for students diagnosed with dyslexia or other reading disabilities.

C.18A:40-5.3 Screening for dyslexia, other reading disabilities.

3. a. A board of education shall ensure that each student enrolled in the school district who has exhibited one or more potential indicators of dyslexia or other reading disabilities is screened for dyslexia and other reading disabilities using a screening instrument selected pursuant to section 2 of this act no later than the student’s completion of the first semester of the second grade.

b. In the event that a student who would have been enrolled in kindergarten or grade one or two during or after the 2014-2015 school year enrolls in the district in kindergarten or grades one through six during or after the 2015-2016 school year and has no record of being previously screened for dyslexia or other reading disabilities pursuant to this act, the board of education shall ensure that the newly-enrolled student is screened for dyslexia and other reading disabilities using a screening instrument selected pursuant to section 2 of this act at the same time other students enrolled in the student’s grade are screened for dyslexia and other reading disabilities or, if other students enrolled in the student’s grade have previously been screened, within 90 calendar days of the date the student is enrolled in the district.

c. The screening shall be administered by a teacher or other teaching staff member properly trained in the screening process for dyslexia and other reading disabilities.

C.18A:40-5.4 Comprehensive assessment for the learning disorder.

4. In the event that a student is determined through the screening conducted pursuant to section 3 of this act to possess one or more potential indicators of dyslexia or other reading disabilities, the board of education shall ensure that the student receives a comprehensive assessment for the learning disorder. In the event that a diagnosis of dyslexia or other reading disability is confirmed by the comprehensive assessment, the board of education shall provide appropriate evidence-based intervention strategies to the student, including intense instruction on phonemic awareness, phonics and fluency, vocabulary, and reading comprehension.

5. This act shall take effect immediately and shall first apply to the 2014-2015 school year; provided, however, that the Commissioner of Education shall take any anticipatory actions that the commissioner determines to be necessary and appropriate to effectuate the purposes of this act prior to the 2014-2015 school year.

Approved January 17, 2014.

MULTISENSORY STRUCTURED LANGUAGE TEACHING

What is meant by multisensory teaching?

Multisensory teaching is one important aspect of instruction for dyslexic students that is used by clinically trained teachers. Effective instruction for students with dyslexia is also explicit, direct, cumulative, intensive, and focused on the structure of language. Multisensory learning involves the use of visual, auditory, and kinesthetic-tactile pathways simultaneously to enhance memory and learning of written language. Links are consistently made between the visual (*language we see*), auditory (*language we hear*), and kinesthetic-tactile (*language symbols we feel*) pathways in learning to read and spell.

Margaret Byrd Rawson, a former President of the International Dyslexia Association (IDA), said it well:

“Dyslexic students need a different approach to learning language from that employed in most classrooms. They need to be taught, slowly and thoroughly, the basic elements of their language—the sounds and the letters which represent them—and how to put these together and take them apart. They have to have lots of practice in having their writing hands, eyes, ears, and voices working together for conscious organization and retention of their learning.”

Teachers who use this approach help students perceive the speech sounds in words (phonemes) by looking in the mirror when they speak or exaggerating the movements of their mouths. Students learn to link speech sounds (phonemes) to letters or letter patterns by saying sounds for letters they see, or writing letters for sounds they hear. As students learn a new letter or pattern (such as *s* or *th*), they may repeat five to seven

words that are dictated by the teacher and contain the sound of the new letter or pattern; the students discover the sound that is the same in all the words. Next, they may look at the words written on a piece of paper or the chalkboard and discover the new letter or pattern. Finally, they carefully trace, copy, and write the letter(s) while saying the corresponding sound. The sound may be dictated by the teacher, and the letter name(s) given by the student. Students then read and spell words, phrases, and sentences using these patterns to build their reading fluency. Teachers and their students rely on all three pathways for learning rather than focusing on a “whole word memory method,” a “tracing method,” or a “phonetic method” alone.

The principle of combining movement with speech and reading is applied at other levels of language learning as well. Students may learn hand gestures to help them memorize the definition of a noun. Students may manipulate word cards to create sentences or classify the words in sentences by physically moving them into categories. They might move sentences around to make paragraphs. The elements of a story may be taught with reference to a three-dimensional, tactile aid. In all, the hand, body, and/or movement are used to support comprehension or production of language.

What is the rationale behind multisensory, structured language teaching?

Students with dyslexia often exhibit weaknesses in underlying language skills involving speech sound (phonological) and print (orthographic) processing and in building brain pathways that connect speech with print. The brain pathways used for reading and spelling must develop to

connect many brain areas and must transmit information with sufficient speed and accuracy. Most students with dyslexia have weak phonemic awareness, meaning they are unaware of the role sounds play in words. These students may also have difficulty rhyming words, blending sounds to make words, or segmenting words into sounds. Because of their trouble establishing associations between sounds and symbols, they also have trouble learning to recognize words automatically (“by sight”) or fast enough to allow comprehension. If they are not accurate with sounds or symbols, they will have trouble forming memories for common words, even the “little” words in students’ books. They need specialized instruction to master the alphabetic code and to form those memories.

When taught by a multisensory approach, students have the advantage of learning alphabetic patterns and words with engagement of all learning modalities. Dr. Samuel Torrey Orton, one of the first to recognize the syndrome of dyslexia in students, suggested that teaching the “fundamentals of phonic association with letter forms, both visually presented and reproduced in writing until the correct associations were built up,” would benefit students of all ages.

What is the Orton-Gillingham Approach?

Dr. Orton and his colleagues began using multisensory techniques in the mid-1920’s at the mobile mental health clinic he directed in Iowa. Dr. Orton was influenced by the kinesthetic method described by Grace Fernald and Helen Keller. He suggested that kinesthetic-tactile reinforcement of visual and auditory associations could correct the tendency of confusing similar letters and transposing the sequence of letters while reading and writing. For example, students who confuse **b** and **d** are taught to use consistent, different strokes in forming each letter. Students make the vertical line before drawing the circle in printing the letter **b**; they form the circle before drawing the vertical line in printing the letter **d**.

Anna Gillingham and Bessie Stillman based their original 1936 teaching manual for the “alphabetic method” on Dr. Orton’s theories. They combined multisensory techniques with teaching the structure of written English, including the sounds (phonemes), meaning units (morphemes such as prefixes, suffixes, and roots) and common spelling rules. The phrase “Orton-Gillingham approach” refers to the structured, sequential, multisensory techniques established by Dr. Orton, Ms. Gillingham, and their colleagues. Many programs today incorporate methods and principles first described in this foundational work, as well as other practices supported by research.

Is there solid evidence that multisensory teaching is effective for students with dyslexia?

Current research, much of it supported by the National Institute of Child Health and Human Development (NICHD), has demonstrated the value of explicit, structured language teaching for all students, especially those with dyslexia. Programs that work differ in their techniques but have many principles in common. The multisensory principle that is so valued by experienced clinicians has not yet been isolated in controlled, comparison studies of reading instruction, but most programs that work do include multisensory practice for symbol learning. Instructional approaches that are effective use direct, explicit teaching of letter-sound relationships, syllable patterns, and meaningful word parts, and provide a great deal of successful practice of skills that have been taught. Fluency-building exercises, vocabulary instruction, language comprehension and writing are also included in comprehensive programs of instruction and intervention. Word recognition and spelling skills are applied in meaningful reading and writing of sentences and text passages, and students receive immediate feedback if they make mistakes. Guessing at words and skipping words are discouraged and replaced by knowledge of how to analyze and

read unknown words. Other key principles of instruction are listed below.

Summary: What are the principles of a multisensory, structured language approach?

Effective multisensory instruction is based on the following key principles:

- **Simultaneous, Multisensory (VAKT):** Teaching uses all learning pathways in the brain (i.e., visual, auditory, kinesthetic-tactile) simultaneously or sequentially in order to enhance memory and learning.
- **Systematic and Cumulative:** Multisensory language instruction requires that the organization of material follows the logical order of the language. The sequence must begin with the easiest and most basic concepts and progress methodically to more difficult material. Each concept must also be based on those already learned. Concepts taught must be systematically reviewed to strengthen memory.
- **Direct Instruction:** The inferential learning of any concept cannot be taken for granted. Multisensory language instruction requires direct teaching of all concepts with continuous student-teacher interaction.
- **Diagnostic Teaching:** The teacher must be adept at flexible or individualized teaching. The teaching plan is based on careful and continuous assessment of the individual's needs. The content presented must be mastered step by step for the student to progress.
- **Synthetic and Analytic Instruction:** Multisensory, structured language programs include both synthetic and analytic instruction. Synthetic instruction presents the parts of the language and then teaches how the parts work together to form a whole. Analytic instruction presents the whole and teaches how this

can be broken down into its component parts.

- **Comprehensive and Inclusive:** All levels of language are addressed, often in parallel, including sounds (phonemes), symbols (graphemes), meaningful word parts (morphemes), word and phrase meanings (semantics), sentences (syntax), longer passages (discourse), and the social uses of language (pragmatics).

IDA has supported the development of a matrix of multisensory, structured language (MSL) programs to enable consumers to see the similarities and differences among various programs. The programs were chosen for inclusion in the matrix because they have a long history of use in clinics and classrooms where the programs have been refined over time. These programs included in the matrix are those used at every “tier” of student ability. Some are designed for whole class instruction to prevent academic failure. Some are designed for small group instruction. And some are designed for the intensive instruction needed for students with severe reading disabilities. This Matrix of Multisensory Structured Language Programs is posted on the IDA website for downloading or can be obtained in print form from the IDA bookstore.

Related Readings:

- Birsh, J. R. (Ed.). (2011). *Multisensory teaching of basic language skills*. Baltimore: Paul H. Brookes Publishing Co.
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- Fletcher, J. M., Lyon, G. R., Fuchs, L. S., & Barnes, M. A. (2007). *Learning disabilities: From identification to intervention*. New York: The Guilford Press.

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Schupack, H., & Wilson, B., (1997). *The “R” book, reading, writing & spelling: The multisensory structured language approach*. Baltimore: The International Dyslexia Association.

Shaywitz, S. E. (2003). *Overcoming dyslexia: A new and complete science-based program for reading problems at any level*. New York: Knopf.

Wolf, M. (2007). *Proust and the squid: The story and science of the reading brain*. New York: Harper Collins Publishers.

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