Translating the Science of Reading Screening into Practice: Policies and Their Implications

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Translating the Science of Reading Screening into Practice: Policies and Their Implications

The purpose of screening in word reading skills is not to identify students with a disability (i.e., dyslexia, also known as a Specific Learning Disability [SLD] in Basic Reading Skills). Instead, the purpose of screening is to identify students who are at risk for a disability—in other words, to identify students who perform below benchmark goals in reading-related skills *so that* early intervention may be provided. Early intervention can help to "catch [students] before they fall," (Torgesen, 1998) and to potentially prevent many students from being identified with a reading disability in the future. In the past decade, two developments have occurred that likely impacted how teachers think about screening: First, many states have adopted a Multi-Tiered Systems of Support (MTSS) framework that relies on screening to identify and monitor at-risk students; second, many states have passed a variety of reading and dyslexia-specific screening laws (Gearin et al., 2021). Because of those two changes, accurately screening students in reading has rightly become a priority.

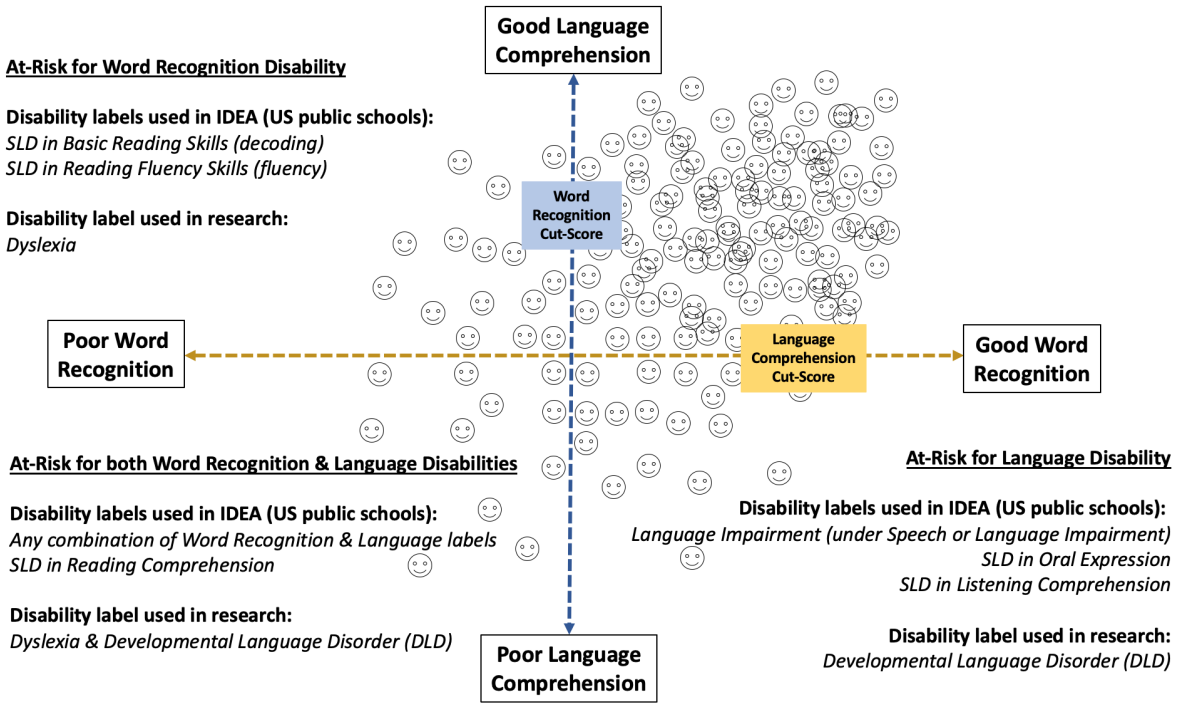
As of 2021, it is accepted that elementary schools should be implementing universal reading screenings multiple times throughout the school year (National Center on Improving Literacy, 2019). However, the mechanism of screening in an individual school is partially determined by the state's MTSS policies, screening regulations, and curriculum adoptions. As there is a considerable amount of variability among states on these policies (Gearin et al., 2021), it is important to identify states with positive outcomes, which may serve as a model for others. This article builds on others in this issue that discuss screening in the context of Response to Intervention (RTI) and MTSS by providing an overview of evidence-based screening— or the Science of Reading Screening (SORS)—and then focusing on the current state of screening policies in the U.S., including recommendations to evaluate and support policies that are rooted

in the SORS. Misalignment between science and policy can result in poorer early intervention practices, flawed identification procedures, and lower student reading achievement.

Types of Reading Screening

Considering the multitude of screening instruments available (see https://charts.intensiveintervention.org/ascreening for a review), the Simple View of Reading (Gough & Tunmer, 1986) offers a useful lens to help choose appropriate options and interpret screening data. Results from screeners that measure students' decoding achievement (e.g., nonsense word fluency, oral reading fluency) can be represented on a continuum of low word recognition achievement to high word recognition. The skills that many screeners measure are referred to as word recognition and are shown on the X axis of Figure 1. Other screeners that are read aloud to the student measure a student's listening comprehension (e.g., vocabulary, narrative language measures). Results from these can also be represented on a continuum of low language comprehension to high language comprehension, as shown on the Y axis of Figure 1. Students who are at risk for a word recognition disability but have adequate language comprehension (i.e., SLD in Basic Reading Skills, including those diagnosed with dyslexia) would fall into the upper left quadrant (poor decoding but adequate language comprehension).

Figure 1: Screening Results Through the Lens of the Simple View of Reading



Students who are at-risk for a language disability (i.e., Language Impairment, also known as Developmental Language Disorder [DLD]) have adequate decoding skills but poor language comprehension and would fall into the lower right quadrant. If a screening measures students' overall reading comprehension achievement (i.e., the screener asks students to read text and answer comprehension questions), it may be helpful for schools identifying students who are at risk for reading failure; however, it does not provide information on their specific area(s) of need—whether their decoding, language comprehension, or both, are having an impact on their overall screening score. Further diagnostic assessments would be necessary to determine areas in which to target intervention (viz., decoding, language comprehension, or both).

Some early reading skills are more predictive of later reading ability than others. For example, letter-naming fluency and letter-sound fluency in kindergarten are highly predictive of later reading ability, more so than phoneme segmentation or a computer adaptive test like STAR

(Clemens et al., 2021). Both letter-naming fluency and letter-sound fluency in kindergarten were found to significantly predict later reading achievement. Screening in these subskills also makes it easier to identify certain profiles of student achievement (e.g., struggling, on track). Therefore, these foundational skills should be key elements of a kindergarten screening program. Table 1 displays these brief, yet highly predictive, screeners by time point administered, identified by Clemens et al. (2021).

Table 1: Brief, Predictive Screeners by Time Point Administered

Screening Measure	**Time Point Administered**	**Intervention need**	**Research-based Label**	**School- based Label**
Letter-sound fluency (e.g., *AIMSweb*)	Kindergarten (fall, winter)	Decoding	At-risk for dyslexia	At-risk for SLD in basic reading skills
Word reading fluency (e.g., *DIBELS*)	Kindergarten (spring) First (fall)	Decoding	At-risk for dyslexia	At-risk for SLD in basic reading skills
Oral reading fluency (e.g., *DIBELS*)	First (winter, spring) Second (all) Third (all)	Decoding	At-risk for dyslexia	At-risk for SLD in basic reading skills
Narrative Language Measures (e.g. *CUBED*)	PreK through 3rd	Language	At-risk for DLD	At-risk for Language Impairment

Note: DIBELS = Dynamic Indicators of Basic Early Literacy Skills; DLD = Developmental Language Disorder; SLD = Specific Learning Disability

Some school districts may have adopted a benchmark assessment system (e.g., Developmental Reading Assessment, Fountas and Pinnell) to screen for student reading growth by identifying a student's Guided Reading level two to three times a year. In these systems, a student reads a leveled reader aloud to the teacher as the teacher documents student reading errors, self-corrections, and other behaviors. The teacher uses the student's accuracy, fluency, and comprehension scores during each reading to determine the student's "instructional" and "independent" reading levels. If this type of system is used to screen students for reading difficulty, this may be problematic for two reasons: 1) these screening systems do not give data on the student's specific area of need (decoding, language, or both) and 2) these fine-grained leveling systems have not been shown to be reliable or valid measures of students' reading ability. A student's performance may be highly variable based on the text type (i.e., fiction, nonfiction) and content knowledge necessary to access the text through predictions and illustrations (e.g., baseball, gardening tools). Although assessments that are based on leveled texts are often called screeners, they do not fit the curriculum-based measures (CBM) criteria.

Research-Based vs. School-Based Terminology

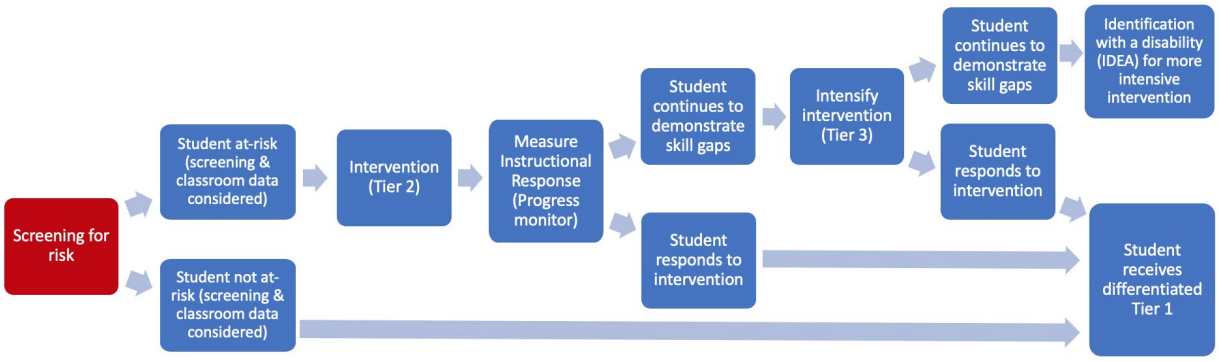
In the United States, federal special education law (Individuals with Disabilities Education Act; IDEA, 2004) uses the category SLD in Basic Reading Skills or SLD in Reading Fluency Skills to describe a student with difficulty in word-level reading skills (i.e., a significant difficulty with decoding). IDEA also includes explicit reference to the term dyslexia within the category of SLD; therefore, there is nothing preventing schools from also using the term dyslexia to describe an SLD in Basic Reading Skills or Reading Fluency Skills. Researchers use the label dyslexia to describe the same—students with an SLD in Basic Reading Skills or Reading Fluency Skills. For example, the definition adopted by the International Dyslexia Association

(IDA) states, “Dyslexia is a specific learning disability (*SLD*)… characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities” (Lyon et al., 2003, p. 2). Therefore, if a screener measuring decoding indicates a student is at risk, in research-based terms, we would say that student is at-risk for dyslexia; in school-based terms, we would say that student is at-risk for an SLD in Basic Reading Skills. Although the term SLD is used mainly by federal special education law and the term dyslexia is used by researchers, they are synonymous by definition. We recognize many educational stakeholders have misconceptions about the term dyslexia (e.g., Gonzalez, 2021; Washburn et al., 2017) and recommend school-based teams help to communicate that these labels are merely like using the terms H2O and water; they can and should be used interchangeably (Peltier et al., 2020).

The Science of Reading and Dyslexia Screening Policy in Practice

In order to determine if a student has an SLD, such as an SLD in Basic Reading Skills (i.e., dyslexia), a three-pronged approach is recommended (Miciak & Fletcher, 2020). This approach to identification includes: 1) low achievement, 2) low instructional response to intervention, and 3) a lack of other exclusionary criteria such as an intellectual disability accounting for the previous two requirements. How screening relates to best practices in the early intervention and identification process is depicted in Figure 2 (see Miciak & Fletcher [2020] for more information).

Figure 2: The Role of Screening in Schools



The widely adopted view is that universal screening should take place multiple times a year. In practice, schools typically screen during the fall, winter, and spring. This allows the school to monitor the growth of all students throughout the school year. For example, a student may not be identified at risk in the fall, but by winter, their scores indicate that they are at risk on the screener. In the early grades, schools should be screening a number of foundational reading skills that are both instructionally appropriate and closely related to later reading achievement. Once the data are collected, data teams should review the screening scores to determine students in need of targeted intervention, considering borderline scores and school-based contexts to make a more-informed decision.

Teachers report that they feel knowledgeable about the implementation of screening, but they do not feel prepared to make important data-based decisions (Al Otaiba et al., 2019). Decisions can be difficult because reading skills exist on a continuum, with some students scoring just above or just below the screener's identified cut-score. For example, in a kindergarten class in the spring, if Student A receives a score of 10 correct words on a word reading fluency screener and Student B receives a score of 9 correct words, Student A may be classified as "Meeting the Benchmark Goal" while Student B is classified as "Below

Benchmark." If schools only use these categorical labels to make the decision to provide students with an intervention, Student B may receive intervention in decoding while Student A may not, even though on another day or at another time, these students may have received different scores, as illustrated by the screener's standard error of measure. In addition, Student A, having scored merely one or two more correct words per minute, is not practically different than Student B.

Therefore, the categorical labels provided by the screening instrument at predetermined cut-points should be used with caution. We advise school-based teams to think about student risk and needed support along a continuum. The cut-points for risk on a screening instrument merely provide a "dotted line" on an otherwise uninterrupted measurement of achievement. States should consider policies that screen for both decoding difficulties and language difficulties, as both may later influence a student's reading comprehension achievement. These brief screening measures, implemented three times a year, can help to identify students at risk for dyslexia, DLD, or both—in order to provide early intervention in their specific area(s) of difficulty.

Universal screenings are the first line of defense; however, schools should be on the lookout for additional indicators that might contribute to the identification of students who are at-risk for future reading difficulties (e.g., Catts & Petscher, 2021; Compton, 2021). For example, as noted in Figure 3, there are numerous factors that increase a student's risk of a reading disability. Although some of these factors might be considered "protective," educators must be able to screen students to gain a better understanding of a child's current level of reading knowledge. A brief screener can provide a good deal of information about a student's reading ability, but schools may not have the authority to choose the screener to use because this decision may be limited by the state or district regulations.

Figure 3: Example Risk and Protective Factors for Reading Disabilities

The State of Screening Policy in the United States

The legislative landscape for reading screening has been rapidly changing. As of 2018, over 47 states have passed laws targeting dyslexia (National Center on Improving Literacy, 2019). Although it is encouraging that many states now have laws concerning dyslexia, not all dyslexia laws are the same. In a recent analysis of all 50 states, Gearin and colleagues (2021) found that there is considerable variability between states when it comes to both screening and dyslexia policies. For instance, they found that only 33 states require universal screening for reading. Within those 33 states, only 13 require it for all students between grades K–3, only five states require screening for K–2 students, six states require screening for K–1 students, one state for first grade, and two states for kindergarten only.

Even more variability is noted for skills that are assessed within universal screening. For example, Gearin and colleagues found that most states included measures of phonological and phonemic awareness, decoding, rapid automatized naming (RAN), phonics, letter sounds, and letter knowledge. But some states also required measures of nonword reading, written expression, comprehension, and family history. They also found that many of the dyslexia laws

require that specific assessment tools be used to screen, with AIMSweb and Dynamic Indicators of Basic Early Literacy Skills (DIBELS) being the most common.

The differences between states are striking, and the state of screening in the United States is disjointed and in need of a realignment. Creating legislation is difficult, time consuming, and shaped by elected officials and those who may not be well versed in the research. But as Gearin et al. (2021) note, the latest waves of dyslexia policy do not clearly define screening processes for schools. To add to the confusion, states have also been passing reading-specific legislation that calls for universal screening and the specific content of that screening. As mentioned previously, there are misconceptions regarding the nature of the label dyslexia, its relation to public school processes, and its equivalence with the label SLD in Basic Reading Skills. Unfortunately, these misconceptions have led to policies within states that target screening for risk of both 1) dyslexia, by name, and 2) word-level reading disability, generally. These overlapping policies within some state laws may contribute to proliferating misunderstandings of the relationship of these synonymous terms (viz., dyslexia and SLD in Basic Reading Skills) among teachers and other stakeholders.

For example, Tennessee's "Say Dyslexia" law requires schools to universally screen students for characteristics of dyslexia through the existing RTI/MTSS framework. That framework already has universal screeners mandated three times a year to measure basic reading skills. In January of 2021, Tennessee passed a reading bill that, in part, would require universal screening to take place with approved screeners. The Tennessee Literacy Success Act requires all K–3 students to receive foundational reading skill instruction and that all schools universally screen K–3 students three times a year, which is already required under the state's MTSS plan, and a second requirement under the dyslexia law. Tennessee school leadership must now

examine multiple laws to make sure what they are doing is consistent with multiple requirements around reading screening, which becomes more challenging with each additional law passed.

Another approach to mandating processes in schools that may be less cumbersome is one taken by Texas. In Texas, dyslexia legislation mandates that schools follow the Dyslexia Handbook developed by the Texas Education Agency. This allows the handbook to be changed and updated as needed without legislative action, with all processes for screening, identification, and instruction housed in one place. However, the Texas Dyslexia Handbook currently contains misconceptions around terms (viz., dyslexia and SLD in Basic Reading Skills, 504 and Individualized Education Program procedures) which may have negative implications for students throughout the state. Each approach has benefits and pitfalls, so examining these in each legislative context is advised.

The next important part of the screening process that cannot be overlooked is collaborative, data-based decision making. After the screening data have been collected, effective screening programs will have procedures to decide how to identify students in need of interventions. Although teachers should use data-based decision making during this stage, many have reported they feel unprepared for this step (Al Otaiba et al., 2019). One reason that teachers mention for their feelings of unpreparedness is that they do not receive enough training regarding this process in their preparation programs and through in-service professional development (Oslund et al., 2021). While screening policies should be effective for collecting data, they do not always translate into identifying students who are most in need of intervention. For example, Odegard and colleagues (2020) examined reading screening data for approximately 8,000 second-grade students. They found that students of color were less likely to be identified as having dyslexia compared to their White peers, even after controlling for certain reading skills

and free/reduced lunch status. School-level factors also played a role in who was identified. As the percentage of students below benchmark in reading within a school increased, students with similar levels of decoding difficulties were less likely to be identified with dyslexia.

Moving Forward: Bridging the Gap from Science to Policy

As policy continues to move forward in reading screening, there are areas where the bridge between research and practice can be strengthened. First, it is paramount that the top priority be a preventative approach. All students need high-quality reading instruction. Teachers, principals, and policy makers should be focused on this core issue. Odegard and colleagues (2020) also found that the majority of the 8,000 students in their sample had deficits in at least one foundational reading skill. We cannot forget that we must continue to train teachers and administrators through high-quality, research-informed teacher preparation programs and professional development programs. Educators must advocate for more effective methods of instruction along with research-informed assessment tools. See Figure 4 for a checklist of questions to determine if the screening policy followed in your school or state is aligned with scientific findings. One way to work toward a better screening process is to train administrators in the SORS. The checklist includes the recommendation that administrators devise a system to interpret screening data. In order to do so, administrators must first understand the SORS and draw on teacher expertise for input on how school-specific context may affect these procedures. Because deep knowledge is needed to apply the SORS to various contexts, some states have begun to require administrator training in the Science of Reading. As mentioned earlier, Tennessee recently passed a new reading bill that required leadership preparation programs in Tennessee to teach about the administration of universal screening and interpretation of screening data. As the work of Gearin et al. (2021) found, the screening process between states is

highly variable. We recommend the consideration of federal legislation that requires all states to employ universal screening in early elementary school. As universal screening identifies risk for disabilities affecting reading achievement, requiring universal screening under IDEA may also assist schools in fulfilling IDEA's Child Find requirements, which mandate schools identify, locate, and evaluate any student suspected of having a disability in the state. We bring this to your attention because we have become increasingly concerned about the clarity of reading and dyslexia laws passed across the country. For example, when the terms dyslexia and SLD in Basic Reading Skills are not used interchangeably in law, but rather as distinct disabilities, this may cause further confusion among educational stakeholders. We recommend their relation be clarified in these laws. Also, how reading and dyslexia screening laws align with existing federal special education law (IDEA, 2004) should be examined.

If the screening practices in Figure 4 are not in place, educational stakeholders can engage in advocacy work. Stakeholders can work with school administrators, local school boards, state legislatures, state boards of education, and the federal government to propagate the SORS. Many of the screening policies happen at the state level before being translated to school contexts, so learning who your state representatives and senators are is an important first step in enacting change. There are many educational organizations (e.g., IDA, teachers' unions, Council for Exceptional Children) that can assist in how to best approach elected officials. Both practitioners and researchers must collaborate to enact reading screening policies based on science. Together, we can align policies with the SORS to benefit students and empower teachers.

Figure 4: School Screening Checklist

Does Screening Practice Align with Screening Science?

- ❑ Are the screener's scores reliable and valid?
  - ✓ *The screener should provide cut-scores that have been shown to have predictive validity with a diverse sample of students.*
  - × *Are the scores only tied to a broad "reading level" or grade range? (This screener may not be reliable/valid)*
- ❑ Is the screener given 2-3 times a year to all students PreK-3rd grade?
  - ✓ *Screeners should be given throughout a school year (typically in the fall, winter, and spring) to determine if students are falling behind.*
  - ✓ *This is most important in the earliest grades (PreK-1st) so that high quality intervention can be given to those who need it.*
- ❑ Is the screener brief?
  - ✓ *See Table 1 for examples of highly predictive screeners at each time point)*
  - ✓ *A universal screener should not be a burden to complete. Screeners should be brief. Once a student has been identified as needing intervention, then diagnostic assessments (e.g., phonics surveys) should be collected to help target a starting point.*
- ❑ Does the screener measure decoding skills and language comprehension skills separately?
  - ✓ *If the screener instead measures Reading Comprehension (score is based on students reading a passage and answering questions), are there processes in which students are further diagnostically assessed to determine if the underlying difficulty is decoding or language (or both) in order to provide targeted intervention?*
- ❑ Is there a system in place for entering screening data, data team meetings, and consideration of borderline screening scores?
  - ✓ *School leaders should have a developed plan for the screening process before the first screening takes place.*
  - ✓ *This plan should be communicated to all involved stakeholders (principals, school psychologists, special education and general education teachers, reading specialists).*
  - ✓ *Schools should provide yearly training and/or coaching in screening and data-based decision making.*
- ❑ Is the screening policy tied to targeted, tiered intervention and progress monitoring (e.g., an RTI/MTSS framework)?

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