DYSLEXIA

Finding the signal in the noise

Educators and parents alike find themselves in an echo chamber that creates a massive amount of noise. People talk about lots of different things when it comes to reading and reading instruction. Much of it doesn't matter. It is a distraction that takes our gaze away from the "signal" of what we know works at this point based on what we have learned thus far—the settled science.

Educators and parents need easy access to resources that allow them to consume settled science. In this newsletter and others, we strive to cut through the noise to bring you that signal. It is a laborious process to do this work, but here is the thing: Much of the work has already been done for us. It has been and continues to be done by consensus groups composed of deeply knowledgeable people who often volunteer their time. They do it because they want to see hard-earned knowledge translated into classrooms across the nation for the betterment of students. Their efforts generate resources that synthesize what we know to work, and we strive to share them with you.

These resources come in many forms. The most reliable are practice guides. These guides take what worked in controlled studies run in real schools and place these practices into easily digestible nuggets for educators. Yet this still leaves a lot of work to be done. Educators and parents alike want these practices translated into curricula. Just as important, literacy leaders need implementation models that work at scale to drive empirically validated reading instruction in classrooms. So even though we may have reliable sources where we can find the signal, there is a lot of hard work left to be done in support of schools' translating this work into classrooms.

contents

Recent Findings

Practice guides present settled science about reading instruction

As a reading researcher, I repeatedly cite certain classic studies that are part of the foundational bedrock of our field. When it comes to studies about reading instruction, there is one classic that stands out. It is the report from the National Reading Panel (NRP) in 2000. The report contains results based on consistent findings across thousands of studies. Meta-analyses were conducted for separate topic areas. A meta-analysis is a way to quantify results obtained across several studies.

It is mentioned in about half the publications on our research lab's webpage (https://mtsu.edu/dyslexia/research/publications.php). We reference the five components of effective reading instruction based on the NRP. These five components are phonemic awareness, phonics skills, vocabulary, fluency, and reading comprehension. These components are also referenced in our center's student evaluations. They appear in the recommendations section. Many
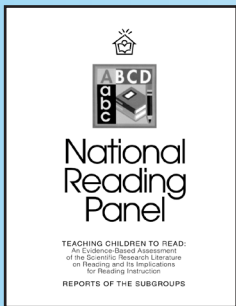
presentations from our center also name these five components or pillars. The NRP is everywhere in our world of producers, consumers, and translators of reading science.
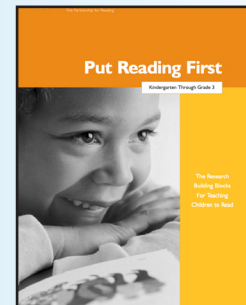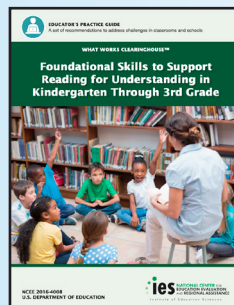
Yet people may be less aware that a practice guide came out shortly after the original NRP report. That booklet provided examples of activities teachers could incorporate into their instructional practices. In 2016, Barbara Foorman, Ph.D., now a director emeritus of the Florida Center for Reading Research, spearheaded more guides. The Institute of Education Sciences (IES) published those documents. One IES practice guide focuses on evidence-based recommendations for teaching foundational reading skills. That guide is for instruction in kindergarten through third grade.
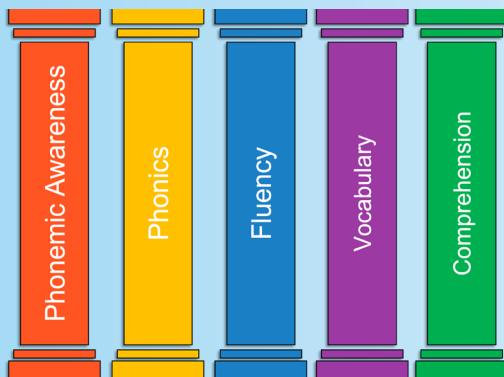
There are additional companion documents. One has suggestions for including student's caregivers in the learning journey. It focuses on first-grade teachers. The other document is a resource for individuals who support educator professional development. It discusses professional learning communities where educators work together to hone their skills. Also, Sharon Vaughn, Ph.D., and colleagues produced a practice guide about intensive interventions. They focused on ideas

to support students who struggle in reading and mathematics.

We could fill several pages of this newsletter with more references. In this issue alone other sections build on the resources shared here. One article presents suggestions for intensifying instruction. A new infographic outlines skills tested through universal screening. And another article homes in on the term orthographic mapping.

An important aspect of the consensus documents shared here is that they strive to cut through the noise. We try to do the same. They also attempt to overcome the jingle and jangle fallacies. These ideas first appeared in measurement textbooks in 1904 (Gonzalez et al., 2021; Kelley, 1927; Thorndike, 1904). The jingle and jangle fallacies refer to mistaken beliefs that can take two forms. One mistake is thinking that if two different terms are used, then they must represent different constructs. Or, a single word could also be mistakenly applied too broadly and used to describe multiple constructs. Many people get caught up in the introduction of new terms. They may hear of a new technique and rush to change their practices. But sometimes those new terms share meaning with existing ones. People also get caught up in new

discoveries that are actually rediscovering things already known. The sea of knowledge is constantly expanding. It is easy to get lost. Instead, the consensus documents focus on the consistencies in the data. They focus on what we could call the settled science.
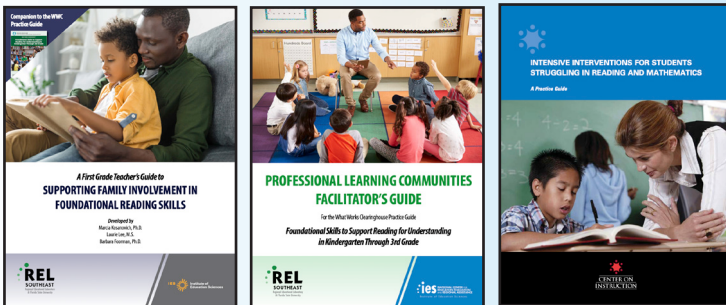
Petscher and colleagues (2020) discussed settled science based on different types of evidence. These authors presented a way to define if something was more settled. Evidence could be compelling and supported by a high quantity of studies that are also high in quality. There is a lot that goes into a judgment of the quality of a research study. Please refer to the Petscher article for some examples. This compelling evidence represents things that are more settled. Alternatively, evidence could be lacking. Either the idea has not been rigorously studied, or the existing data do not support it. In the middle is promising evidence. They labeled some evidence promising because studies may exist on a topic, but more are needed to bolster the findings.

So, in essence, what do these consensus documents say? A lot of it involves instructional targets. Some involve principles of instruction. Many of the ideas match what educators who adopt a structured literacy approach do.

Directly and explicitly teach your students.

Teach students that spoken language can be segmented into separate sounds.

Teach students to link speech sounds to letters.

Teach students to decode words and word parts.

Teach the meanings of new words.

Recent Findings

Teach students about components of narrative and informational texts.

Provide students opportunities to practice every day.

They should practice reading connected text. This practice will support their reading accuracy, fluency, and comprehension.

These practice guides are lengthy. Their authors may not have garnered lots of popularity on social media. Yet these documents reflect countless hours of legwork to support classroom teachers. They focus more on things you can do rather than things you need to buy. They may provide you new ideas to incorporate into your practices. Hopefully, they also provide reassurance. You may already be doing the sorts of things the research suggests are most likely to help your students succeed.

Consensus Documents Mentioned Above

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Petscher, Y., Cabell, S. Q., Catts, H. W., Compton, D. L., Foorman, B. R., Hart, S. A., Lonigan, C. J., Phillips, B. M., Schatschneider, C., Steacy, L. M., Patton Terry, N., & Wagner, R. K. (2020). How the science of reading informs 21st-Century education. Reading Research Quarterly, 55(S1), S267–S282. https://doi.org/10.1002/rrq.352

Thorndike, E. L. (1904). An introduction to the theory of mental and social measurements. Columbia University.

Center News

Publications

Porter, S. B., Odegard, T. N., McMahan, M., & Farris, E. A. (in press). Characterizing the knowledge of educators across the tiers of instructional support. Annals of Dyslexia.

Conferences

"Predicting students literacy outcomes in the early grades: Teacher knowledge matters," presented by Timothy N. Odegard, Emily A. Farris, and Susan Porter as part of the symposium on "Implementation science meets science of teaching reading and writing" at the annual meeting of the Society for the Scientific Study of Reading held virtually July 13–16, 2021.

MT

Center for Educational Media

The SPED Collaborative at MTSU is a new initiative offering professional development for special education teachers, assistants, and administrators in PK–12 schools and districts in Tennessee. The SPED Collaborative is part of a broader professional development initiative known as the PK–12 Collaborative at MTSU, which also includes the ELL Collaborative and the School Counselors Collaborative. The PK–12 Collaborative is offered by the Center for Educational Media and Professional Development in MTSU's College of Education. We will hold SPED Collaborative meetings during the school year, as well as a summer conference, the SPED Collaborative Summer Academy. For more information, please contact Dr. Laura Clark (laura.clark@mtsu.edu) or Jenny Marsh (jenny.marsh@mtsu.edu).

The SPED Collaborative:
- Is participant-driven, with special education teachers identifying the topics of sessions based on their needs
- Is collaborative, with special education teachers and administrators serving as presenters to share strategies, materials, programs, and technology that have been successful for them
- Promotes professional support networks and individual contacts across districts, which is especially beneficial for districts with fewer resources and staff to support SPED students and programs
- Offers multiple professional development sessions throughout the school year to address topics and apply new ideas immediately in the school settings
- Is available at no charge to the participants

Instruction Matters

Beyond Group Size: Intensifying Literacy Instruction

More and more districts, schools, and educators are heeding the scientific evidence about how the brain learns to read and how that translates into instructional delivery. A structured literacy approach includes the high-priority skills students must develop as they learn to read and write. The instruction integrates all layers of language. It includes phonemic awareness, sound-symbol correspondences, syllabication, morphology, grammar, and meaning. All subskills enable written expression and reading comprehension. This content is delivered in a structured approach that is explicit, systematic, and cumulative. It is also responsive to student assessment and progress monitoring. Most students benefit from this structured approach to become proficient readers. It is vital for students at risk of or with dyslexia.

Structured literacy instruction optimizes learning for all students (for more information about structured literacy, see article on p. 2: Practice guides present settled science about reading instruction). All students should begin with a structured literacy approach in the core setting. This approach provides the instructional components and delivery methods necessary for students at risk of dyslexia, so it serves as a preventative for foundational skills weaknesses. Some students will still require more intensive instruction to develop literacy skills. The intensification to support their progress can occur in tiered intervention settings. Students with characteristics of dyslexia will likely benefit from intensified structured literacy instruction. This sustained support can be in the tiers or in the special education setting. The structured literacy instructional content remains consistent throughout the tiers. What changes is the intensity with which that content is delivered.

Organizational intensifiers

There are many ways to intensify instruction for our students. Most state policies focus on broad organizational intensifications. These include guidelines for group sizes and for increasing the duration and frequency of the intervention time. Those organizational intensifiers are important considerations. Students may need more time for literacy development in addition to what is given in the core instruction block. They may need more frequent intervention sessions of longer duration in order to make progress. Allotting and protecting this time for intervention is vital to enabling intensified instruction. These organizational intensifiers set up the conditions students need for intervention. They allow access to the time, skilled instruction, and appropriate materials needed to make progress.

Smaller group sizes allow for more practice opportunities and more frequent teacher interaction. Grouping students with similar needs enables us to differentiate and target our instruction. The additional time in intervention allows for the depth of instruction and pace that benefits students. Again, these organizational changes of time and group size are just a starting point. They provide the necessary conditions for knowledgeable teachers to then intensify their structured literacy instruction.

Instructional intensifiers

State-level policies often do not give guidance on the instructional intensifications. Yet they should be used alongside the organizational ones. What can we do to maximize the use of this extra time and these small groups? What

can we do in the classroom to further intensify our existing structured literacy materials and strategies? How do we make the instruction even more explicit and more systematic? How do we provide more practice opportunities and give more specific feedback?
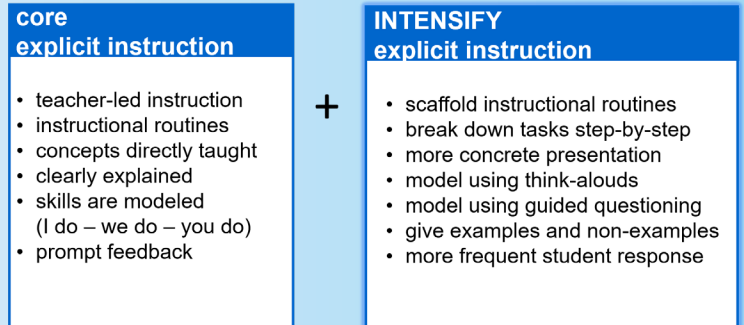
More explicit

One way to intensify instruction is to make it even more explicit. Explicit instruction is important for all students when introducing new skills and concepts. It is especially necessary when students are struggling to learn. Explicit literacy instruction is direct instruction that is teacher-led. It includes instructional routines that support organizational flow and smooth transitions between tasks. Concepts are clearly presented, explained, and modeled. Students have clear expectations for how to respond and practice a skill. A knowledgeable and attentive educator gives prompt feedback. This feedback ensures students do not practice skills incorrectly.

To further intensify explicit instruction, we can add more supports to instructional routines. We can break down tasks even further to build up subskills with step-by-step strategies. We can provide even more modeling using think-alouds and guided questioning. We can contrast practice examples with non-examples to support the student's ability to discriminate the target skill. We always want to ensure that students have many, many practice opportunities with immediate feedback.

We need to let the students know precisely what they need to do in order to master the task. We must accurately model the target skill or concept, give guided practice, then give many individual

practice opportunities. If students are not performing the skill correctly, we need to return to modeling the skill again.

core explicit instruction		INTENSIFY explicit instruction
• teacher-led instruction • instructional routines • concepts directly taught • clearly explained • skills are modeled (I do – we do – you do) • prompt feedback	**+**	• scaffold instructional routines • break down tasks step-by-step • more concrete presentation • model using think-alouds • model using guided questioning • give examples and non-examples • more frequent student response

More student practice and feedback

A high level of student-teacher interaction is a hallmark of explicit instruction. Typically developing readers require fewer exposures, about four, to a newly learned concept to reach a reliable level of word reading accuracy. Students with reading difficulties need many more repetitions to get that same learning (i.e., about 10 times more). Students who have been identified with a learning disability may need a hundred or more practice opportunities to develop efficient word recognition. These numbers reinforce the value of those organizational intensifiers. It is that extra class time and smaller group size that provides the setting for this work. Struggling students need lots of repetition and lots of practice opportunities. Prompt feedback from the teacher further supports word reading accuracy and automaticity (fast, effortless word recognition).

Students need lots of practice to gain automaticity and to consolidate literacy skills. Practice items should be varied in order to support transfer to other contexts. Reviewing

Instruction Matters

learned concepts and providing both affirmative and corrective feedback is essential for student mastery. Corrective feedback redirects student misunderstandings to enable successful practice and learning. Corrective feedback should be given immediately. This is to help ensure that incorrect practice doesn't become an ingrained erroneous habit. Our affirmative feedback should go beyond generic praise such as "good job." It should affirm the student's knowledge and use of skills along with reinforcement of the concept.

One simple way to provide reinforcement of the target concept is to restate it when the student is successful. Oftentimes, struggling students will credit their success to guessing or luck. Instead of just saying "yes" or "correct" when they perform a task correctly, give that affirmation and restate the concept. That not only tells them they are correct, it reinforces their awareness and use of the concept. It also offers another exposure to the concept. For example, a student segmented the syllables in rainbow correctly. A teacher response may be, "Yes, there are two vowel sounds in the word rainbow, so there are two syllables in the word rain . . . bow."

Research has revealed the value of not just immediate, massed practice of a target skill (for example, spelling 10 words with the newly learned trigraph tch), but also retrieval practice of that skill in support of long-term memory. Retrieval practice requires students to recall previously learned information. For example, you may ask your students to jot down all the spellings they have learned for the sound /k/. That retrieval works to enhance long-term memory. Spaced retrieval practice offers many opportunities for students to withdraw learned information from memory over time. As we plan for this type of practice, we need to ensure that

the practice items differ or are given in different contexts to support not just retention but also transfer of skills.

core practice and feedback		INTENSIFY practice and feedback
• many practice opportunities • varied practice items • cumulative review • prompt feedback • affirmative feedback • corrective feedback	**+**	• more frequent student response • practice in many contexts to support transfer of skills • Initial massed practice, spaced practice, and retrieval practice • Immediate affirmative and corrective feedback • precise instruction on actions needed to be successful

More systematic

The systematic aspect of structured literacy instruction means there is a defined scope and sequence for the content. It integrates all layers of language. Prerequisite skills are taught before expecting students to master more advanced skills. Students are given structured opportunities for reading and writing practice. This practice allows them to independently apply learned skills.

Systematic instruction can be further intensified by breaking concepts into their subskills. We can add extra support by providing step-by-step modeling and practice. We can support student confidence, self-efficacy, and success by starting practice sets with easier, known concepts and layering in more difficult items. As noted earlier, some students will need many more practice opportunities than the core program offers in order to get to automaticity with a skill. We need to further space out concept introductions to support that repetition and their progress. Intentionally planning retrieval practice supports cumulative review of learned skills.

<table>
<tr><td>

core
systematic/ cumulative

- built around the structure of the English language
- concepts follow a defined scope and sequence
- planned sequence starts with high frequency, easier concepts building on to more complex ones
- apply skills to text student is capable of independently decoding and comprehending

</td><td>**+**</td><td>

INTENSIFY
systematic/ cumulative

- break the task down and teach the strategy in smaller steps
- provide student practice that starts with easier, known concepts and builds on them with complexity and difficulty
- space out concept introductions
- use retrieval practice to support cumulative review

</td></tr>
</table>

More cognitive support

Cognitive strategies offer another form of scaffolding for student learning. These include supporting attention, memory, and strategy use. Structured literacy approaches include cognitive supports such as clear and consistent instructional procedures and routines. This includes visual and verbal prompts that let students know how to perform a task. Memory aids such as keywords and mnemonics are embedded throughout the instruction. For example, keywords are introduced along with sound-symbol correspondences to support learning and memory.

In their book *Intensive Reading Interventions for the Elementary Grades*, Wanzek, Al Otaiba and McMaster offer practical guidelines for embedding and intensifying cognitive strategy supports in reading instruction. We can help students set learning goals and help them monitor their progress toward those goals. We can help them use self-talk as feedback while they work. We can model what that sounds like when the goal is to talk through hard tasks with persistence ("Stick with it—this takes some work!") or block out distractions ("Stay focused. I'll try that again.") We can help students link effort and practice to their progress ("I used what I learned. I'm getting better at this!")

Another cognitive intensifier is to support working memory load with scaffolded instruction and advance organizers. Working memory refers to holding a bit of information in mind long enough to use that information. For example, decoding a word such as constitution by breaking it into syllables (con-sti-tu-tion), then holding those syllables in mind long enough to blend them back together into the word. In this example, instead of the student relying only on verbally sounding out the syllables while looking at the word, the student can also use their pencil to scoop under the syllables while sounding them out. This concrete visual support reduces working memory load as the student then puts the word parts back together to read the word.

<table>
<tr><td>

core
cognitive strategies

- procedures and routines
- memory aids
- advance organizers
- setting goals

</td><td>**+**</td><td>

INTENSIFY
cognitive strategies

- set learning goals
- monitor progress
- use self talk
- link effort and practice to progress
- talk through tasks with persistence
- support working memory

</td></tr>
</table>

Advance organizers are used to prompt a routine and free up working memory to focus on the concept at hand. These are often visual and verbal prompts. You use the advance organizer to introduce and prompt a standard routine, such as the one pictured here. When used consistently, these organizers also protect your instructional time because students know what to expect and do for each part of the lesson.

Instruction Matters

An example of an advance organizer for spelling practice.

Organizational intensifiers enable instructional intensifiers, and that's where we can really differentiate and target intervention efforts to positively impact student progress. By intensifying instruction for student mastery, we are also supporting the emotional well-being of our students. If difficulties have caused students to dislike or avoid reading, or blame themselves for their lack of progress, this helps them overwrite the negative thoughts and feelings that may be associated with prior reading practice.

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Join us to learn more about intensifying instruction.

Greetings from Destination: INTERVENTION

Using data and error analysis to plan intervention

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In Focus

Orthographic Mapping: A process for becoming a skilled reader

Orthographic mapping is an educational buzzword that has recently become quite popular. While the term may be new to many people, it is based on years of research that helps us understand how people learn to read.

So, what is meant by orthographic mapping and why is it important?

mop

/m/ /ŏ/ /p/, mop
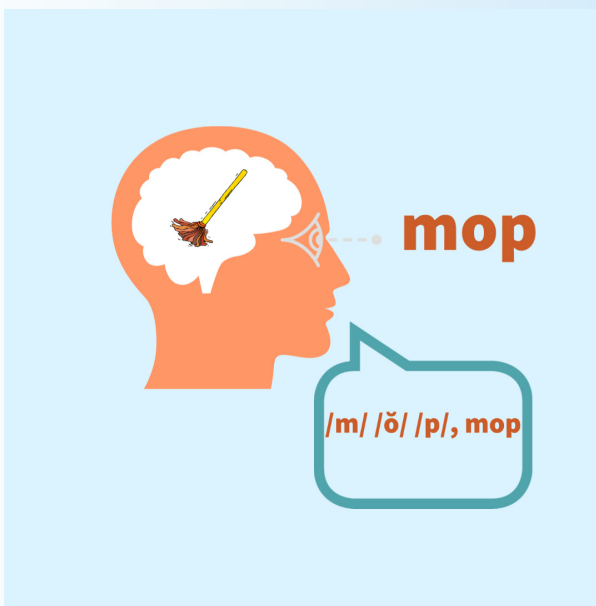
Orthographic mapping is the process we use to store written words in our long-term memory. Through this process, letter-sound connections are formed "to bond the spellings, pronunciations, and meanings of specific words in memory" (Ehri, 2014, p. 5). Orthographic mapping is necessary for the development of fluent reading.

Orthographic mapping is a mental process. It is not a teaching technique or instructional activity. However, teachers can support this process through explicit phonemic awareness, phonics, and vocabulary instruction. When students read a word, they need to be able to access the word's speech sounds and meaning from their memory. Teachers should show students how to focus on and manipulate sounds in spoken words. They should then teach students how to connect these sounds to the letters or groups of letters that represent them. Explicit vocabulary instruction should also be provided. A well-developed oral vocabulary helps students to bond printed letters to their sounds. When teaching new vocabulary, teachers can support orthographic mapping by providing the word's meaning, pronunciation, and spelling.

When the letter-sound connections and the word's meaning are retained in memory, the student can instantly recognize the word. Then the word becomes a "sight word" for that student. That means it is read quickly and without conscious effort. As a student's store of sight words ("sight word vocabulary") increases, he or she can recognize many words automatically, which leads to reading more fluently and with better comprehension.

Words are considered "sight words" if the sight of the word results in immediate activation of the word's pronunciation and meaning (Ehri, 2014).

sight word vocabulary = the collection of words that a person can recognize instantly, without having to stop and sound them out

In Focus

The orthographic mapping process is not the same as asking students to memorize lists of high frequency words (often called "sight words" in schools) without calling attention to the connection between the letters of words and the sounds they represent. Many of these high frequency words can be included during phonics lessons by emphasizing the relationship between the letters and their sounds. For example, children can read the regularly spelled, high frequency word "run" if they know the sounds represented by each letter in that word. Learning to read an irregular word like "said" is easier when students realize that the letters "s" and "d" make their expected sounds but only the letters "ai" are an unexpected spelling of the short-e sound.

Typically developing readers are able to store new words as sight words after reading the word only a few times. However, students who struggle to read words accurately and fluently will need much more practice with a word before it is stored as a sight word in memory. Students with reading disabilities may need a hundred or more practice opportunities to efficiently recognize words. They will also need targeted instruction to help them develop strong phonemic awareness, letter-sound knowledge, and decoding skills.

When students are able to instantly recognize words on the page without having to stop and sound them out, their brains are free to focus on the meaning of text. This leads to building vocabulary, knowledge, motivation, and reading enjoyment.

Reference:

Ehri, L. C. (2014) Orthographic Mapping in the Acquisition of Sight Word Reading, Spelling Memory, and Vocabulary Learning, Scientific Studies of Reading, 18:1, 5-21, DOI: 10.1080/10888438.2013.819356

In Focus

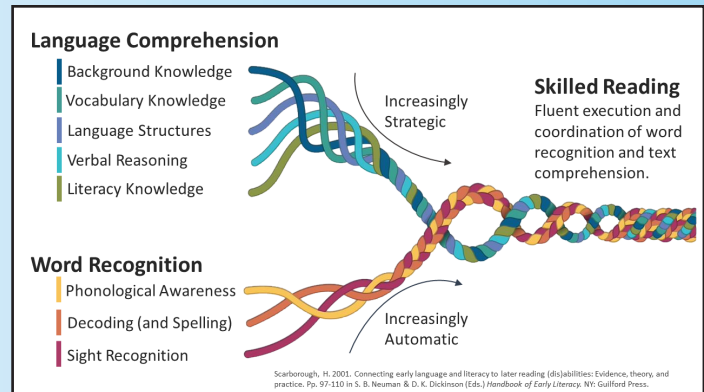## Universal Screening and Reading Skill Development

Universal screening is the foundation of the Response-To-Intervention (RTI) model of student support implemented in Tennessee in 2014. RTI was implemented in an attempt to thwart the *wait to fail* model historically relied on by schools. The hope of RTI is that schools *fail to wait* as students struggle to acquire basic skills. Instead, they provide timely skills-based intervention to support struggling students. Many school districts across the nation utilize the RTI process and universal screening.

Universal screening consists of administering developmentally and instructionally appropriate measures to identify students who may need additional support. Universal screening measures are typically brief measures. Many are administered as a one-minute assessment. Measures may be administered to the whole class (e.g., Reading Comprehension MAZE measure) or the individual (e.g., Oral Reading Fluency measure). The infographic on p. 15 explores typical reading development milestones and aligns these milestones to developmentally and instructionally appropriate universal screening measures.

What?

Reading comprehension is the ultimate goal of reading. Reading comprehension comprises many different processes and relies on several foundational skills. Reading comprehension is often represented by Scarborough's (2001) model of reading and the associated reading rope graphic. Reading comprehension is divided into two main strands in Scarborough's model: word recognition and language comprehension. The word recognition strand encompasses the core skills of phonological awareness, sight words, and decoding. The language comprehension strand includes background knowledge, vocabulary knowledge, language structures, verbal reasoning, and literacy knowledge.

Similarly, the center's model of reading comprehension, i.e., the reading wall, represents skills and processes that contribute to reading

Language Comprehension
- Background Knowledge
- Vocabulary Knowledge
- Language Structures
- Verbal Reasoning
- Literacy Knowledge

Increasingly Strategic

Skilled Reading
Fluent execution and coordination of word recognition and text comprehension.

Word Recognition
- Phonological Awareness
- Decoding (and Spelling)
- Sight Recognition

Increasingly Automatic

Scarborough, H. 2001. Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. Pp. 97-110 in S. B. Neuman & D. K. Dickinson (Eds.) *Handbook of Early Literacy*. NY: Guilford Press.

comprehension. The top block of the infographic represents reading comprehension and includes the skills that support reading comprehension. Each subskill supports and contributes to the efficiency and accuracy of the skills above. For example, a reader needs to know letter-sound relationships to decode new or unknown words successfully.

Phonological awareness, which includes phonemic awareness, is an essential foundational building block to develop accurate sound-symbol representations. As sound-symbol knowledge is consolidated and instruction in syllable types is provided, readers decode in larger chunks, and spelling (i.e., encoding) skills develop through direct instruction and practice. As readers consolidate this knowledge and practice these skills, fluency is built, and readers become better able to accurately and automatically decode and identify words in connected text.

These basic skills and processes make reading comprehension possible, but they are insufficient in isolation. Decoding and word recognition is the first step in reading comprehension. Readers also must have adequate background, vocabulary, and syntactic knowledge to understand the meaning of words in context. Building basic reading skills is the first, critical step in the process of developing reading comprehension.

In Focus

When?

The middle block of the infographic presents the timeline for the development of skills commonly tested by universal screening. Please note that all skills that support reading comprehension are not typically included in universal screening process. The areas that are not currently part of the universal screening process are greyed out in the infographic. These areas are often included in more diagnostic assessments, e.g., screening for characteristics of dyslexia. While the terms accurate and automatic appear greyed out in the infographic, accuracy and automaticity are essential components included in timed universal screening measures.

Phonological awareness includes an awareness of syllable and word boundaries as well as rhyme, alliteration, onset-rime awareness (ages 3–4), and phonemic awareness. Phonemic awareness includes identifying, blending, segmenting, deleting, and manipulating phonemes (ages 5–6). Weaknesses in phonological awareness, and especially phonemic awareness, contribute to difficulty establishing sound-symbol relationships. Letter knowledge typically develops as students receive direct instruction in the alphabet and phonics. Depending on a child's exposure to direct instruction, letter knowledge and sound-symbol knowledge develop around 4–5 years old. Decoding (ages 5–7) and encoding (ages 5–12) skills strengthen as children receive direct instruction in spelling, syllable types, and syllable boundaries.

As readers consolidate and practice these basic skills, accuracy and automaticity in reading connected text builds. Fluency continues to improve with practice, and typical students begin to demonstrate efficient reading around the second semester of first grade (ages 7+). These skills contribute to the development of reading comprehension. Vocabulary, morphology, background, and syntactic knowledge also contribute to reading comprehension. Reading comprehension skills develop over the course of a reader's life, but universal screening for reading comprehension is developmentally appropriate beginning in the second grade when a student should have consolidated the underlying skills (i.e., accuracy) and built automaticity for reading comprehension.
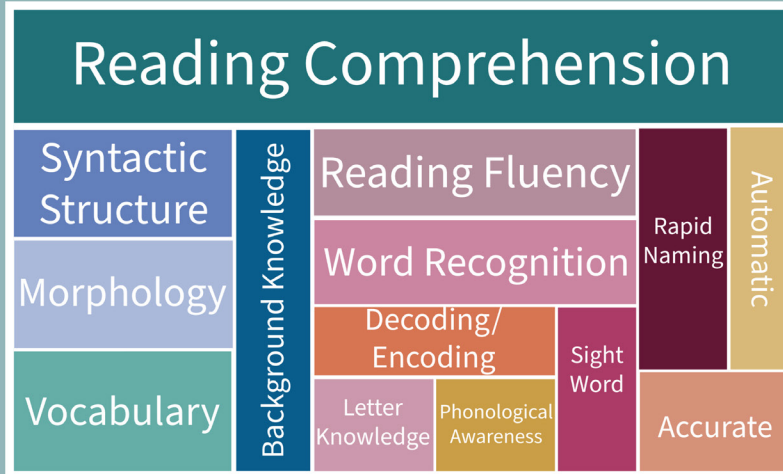
How?

There are many measures that can provide information about the development of each of the skills. One example measure is listed in the third block of the infographic. These are common measures available from testing companies (e.g., Pearson) or organizations (e.g., DIBELS from the University of Oregon). Please note that this is not a comprehensive list of measures. For example, phonemic awareness may also be measured with an initial sound fluency measure. The age or grade should be used to determine an appropriate measure. The instruction provided to the student should also be considered when selecting and interpreting screening measures. A measure that serves as a universal screener at a lower grade level may be used as a diagnostic screener for a student at a higher grade level.

Outcome measures that represent the consolidation of basic skills (i.e., fluency and reading comprehension) necessarily include those subskills (decoding, letter-sound knowledge, phonological awareness). However, it is **not** possible to determine if a student has a weakness in an underlying subskill based on an outcome measure. For example, a student identified as needing additional support through universal screening using an oral reading fluency measure **cannot** be presumed to have underlying weaknesses in phonological awareness and sound-symbol knowledge. To determine the student's strength or weakness with these skills, a specific measure targeting only these skills should be administered.

Universal screening is the first step in identifying potential need for intervention. Dyslexia-specific or diagnostic screening guides intervention. For more information on developmentally aligned universal screening measures and their appropriate use, please see our publication Dyslexia within RTI.
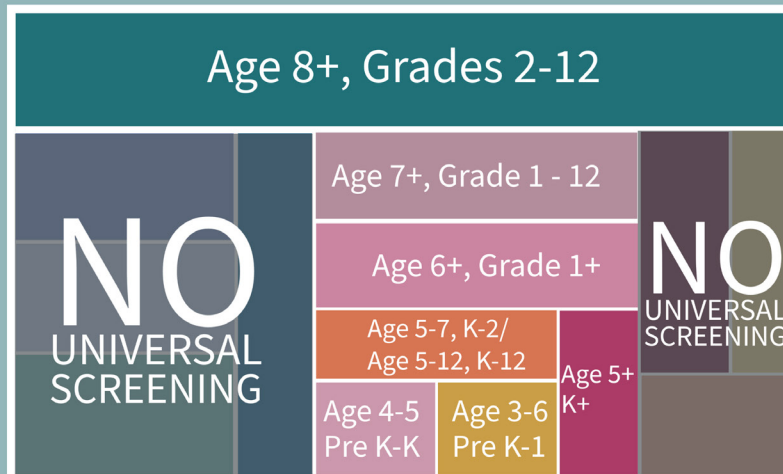
UNIVERSAL SCREENING
AND READING SKILL DEVELOPMENT

WHAT? / **SKILLS**

Reading Comprehension

- Syntactic Structure
- Morphology
- Vocabulary
- Background Knowledge
- Reading Fluency
- Word Recognition
- Decoding/Encoding
- Letter Knowledge
- Phonological Awareness
- Sight Word
- Rapid Naming
- Automatic
- Accurate

WHEN? / **DEVELOPMENT**

Age 8+, Grades 2-12

- NO UNIVERSAL SCREENING
- Age 7+, Grade 1 - 12
- Age 6+, Grade 1+
- Age 5-7, K-2/ Age 5-12, K-12
- Age 4-5 Pre K-K
- Age 3-6 Pre K-1
- Age 5+ K+
- NO UNIVERSAL SCREENING

HOW? / **MEASURES**

MAZE

- NO UNIVERSAL SCREENING
- Oral Reading Fluency
- Word Reading Fluency
- Nonsense Word Fluency/Spelling
- Letter Naming Fluency
- Phoneme Segmentation Fluency
- Vocabulary
- NO UNIVERSAL SCREENING

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Upcoming Workshops & Conferences

Fall Conference: October 11, 2021

From the District to the Reading Teacher: A Roadmap for Using Screeners to Identify Students With Dyslexia

Dyslexia Success Series: November 2021–February 2022

Destination Intervention: Using Data and Error Analysis to Plan Intervention.

Ask an Expert

Next session: October 19, 2021. Details and registration at: mtsu.edu/dyslexia

SAVE THE DATE!

2022 FOX READING CONFERENCE
MARCH 26, 2022

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