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INSTRUCTING STUDENTS WITH DYSLEXIA THROUGH STRUCTURED LITERACY

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Abstract
Dyslexia is a complex brain disorder that affects students' reading abilities and overall learning performance. To best instruct students with dyslexia, educators should understand what dyslexia is and how to employ structured literacy. This article aims to help educators understand dyslexia, the science of reading, structured literacy, dyslexia and comorbidities, and the Orton-Gillingham approach. Furthermore, this article includes concrete examples of structured literacy activities. Understanding dyslexia and seeing concrete examples of explicit, systematic, and cumulative literacy instruction will allow more students with dyslexia to receive effective and timely support.
Keywords: Dyslexia; structured literacy; reading activities; phonics instruction; Orton-Gillingham

1. Introduction

1.1. What is dyslexia?

Dyslexia is a complex brain disorder that affects students' reading abilities. Although there are inconsistent definitions of dyslexia across disciplines and perspectives, one consistent feature is that dyslexia causes difficulties with "identifying or pronouncing familiar and unfamiliar words accurately and fluently" (Kearns et al., 2018, p. 176). Students who cannot recognize words and process a language will encounter difficulties comprehending a text, writing, and learning other skills. Dyslexia is a neurological and neurobiological condition that cannot be cured or outgrown. It has no bearing on intelligence. Students with dyslexia can become proficient readers through explicit phonics instruction with multi-sensory activities.

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About 20 percent of the population in the U.S. has dyslexia, and they represent 80 to 90 percent of people with learning disabilities (The Yale Center for Dyslexia & Creativity, 2022).

1.1.1. Developmental and acquired dyslexia

There are different types and categories associated with dyslexia. It can be grouped into developmental dyslexia and acquired dyslexia. Developmental dyslexia refers to students who cannot read well due to innate differences in the brain. Acquired dyslexia refers to those who were initially able to read, but because of sudden injuries to the brain like falls or car accidents, they lose the ability to read (i.e., alexia), often combined with writing difficulties (agraphia) or communication difficulties (aphasia). To be able to read, the regions of the brain must be able to process form (orthography), sounds (phonology), and meaning (semantics). When the primary reading circuits are interrupted in the brain, it causes difficulties, such as surface dyslexia (interruptions between sounds and meaning), phonological dyslexia (interruptions between forms and sounds), and deep dyslexia (interruptions across forms, sounds, and meaning) (Seidenberg, 2017).

1.1.2. Dyslexia and the brain

Reading happens in many sections of the brain. Functional magnetic resonance imaging (fMRI) indicates that skilled readers use multiple sections of their brains when reading a text. However, students with dyslexia use less of the temporoparietal and occipitotemporal regions of their brains, which deal with articulation, decoding, and word analysis (Kearns et al., 2018; Price & McCrory, 2005). Neuroimaging confirms specific brain regions and pathways involved in reading, highlighting the importance of systematic phonics instruction. It indicates that reading difficulties can be prevented or lessened through appropriate instruction because the patterns of brain activation change due to reading intervention. Early identification and intervention that match the unique needs of students with dyslexia can reduce word reading problems and prevent them from failing at reading (Catts & Hogan, 2021; Kearns et al., 2018). With the support of scientific evidence, more and more educators and parents advocate explicit and systematic phonics instruction in school, moving away from teaching children how to guess reading passages from cues and pictures. Although neuroscience may help us understand how the brain works in reading, Seidenberg (2017) argued that neuroscience alone is not enough to help us understand how people learn to read. He stresses that we must still consider the analyses across multiple aspects, such as behavioral, neural, computational, proximal, and genetic influences, to understand the complicated brain and reading development.

1.1.3. IDEA and state dyslexia laws

Dyslexia can be categorized as a specific learning disability under the Individuals with Disabilities Education Act (IDEA). To receive special education services under IDEA,

students with dyslexia must demonstrate educational needs to receive specially designed instruction. To determine whether or not students with dyslexia need Section 504 plans or individualized educational plans (IEPs), Lindstrom (2018) proposed five steps for dyslexia eligibility decisions: 1) conducting a comprehensive evaluation, 2) assessing reading skills, 3) identifying exclusionary criteria, 4) assessing cognitive processing skills, and 5) demonstrating evidence of substantial impact. Because not all students with dyslexia are eligible for special education services, it is concerning to see many students with dyslexia continue suffering in the general education classroom when their teachers lack knowledge and training in dyslexia. To ensure that all students with dyslexia receive a proper education, as of 2022, at least 48 states in the U.S. have passed their state dyslexia laws to supplement IDEA (National Center on Improving Literacy, 2022). Take Georgia as an example. Beginning with the 2024-2025 school year, all local school systems need to screen K-3 students for characteristics of dyslexia. The screening should include phonological awareness and phonemic awareness, sound-symbol recognition, alphabet knowledge, decoding skills (i.e., reading), encoding skills (i.e., spelling), and rapid naming (Georgia Department of Education, 2022). Many states emphasize using the multi-tiered system of support (MTSS), previously known as Response to Intervention (RTI). MTSS plays an essential role in supporting students with dyslexia. With universal screening and follow-up assessments, more struggling students could be identified earlier to receive the intervention. Tier 1 emphasizes high-quality instruction for all students. In reading, it means structured literacy, which starts with explicit and systematic phonics instruction. Then, Tier 2 and Tier 3 allow some students to receive more intensive and explicit interventions based on their response to the Tier 1 instruction. Teachers should continue receiving training and providing explicit, systematic, and cumulative instruction in whichever areas they teach.

2. The Simple View of Reading and The Reading Rope

The Simple View of Reading is supported by research grounded on cognitive and linguistic foundations of reading (Hoover & Tunmer, 2020). The Simple View of Reading does not imply that reading is simple or easy. Reading is, in fact, a highly complex cognitive capacity. However, reading comprehension will not be achieved without the fundamental ability to identify written words and understand the language. The formula of the Simple View of Reading described by Gough and Tunmer (1986) is as follows:

$$\text{Decoding (D)} \times \text{Language Comprehension (LC)} = \text{Reading Comprehension (RC)}.$$

This formula explains why students must be taught phonics explicitly and systematically and have the ability to understand a language. Reading does not come naturally; it has to be taught. Many children have fluent oral language skills before attending school, but their ability to read a written language is limited. The better word recognition and language comprehension, the better reading comprehension. Decoding alone is not enough, but as

indicated in the formula, zero multiplied by anything will be zero. Decoding and language comprehension are essential for reading comprehension (Gough & Tunmer, 1986; Hoover & Tunmer, 2020).

The Reading Rope was introduced by Scarborough (2001), which is an extension of the Simple View of Reading. The rope shows the subset of skills involved in learning to read. Scarborough stated that students need to have both the lower strand (word recognition: phonological awareness, decoding, and sight recognition) and the upper stand (language comprehension: background knowledge, vocabulary, language structure, verbal reasoning, and literacy knowledge) to achieve reading comprehension. The lower strand helps develop reading fluency, and the upper strand helps gain meaning from the text. The rope metaphor indicates that skilled readers can fluently execute and coordinate word recognition and text comprehension when both strands are woven together. The term "fluently" is emphasized. Students need to recognize words accurately and comprehend the language and execute their cognitive capacity quickly so that their working memory can retain and process information (Hoover & Tunmer, 2020). Kilpatrick (2015) called this fluent execution and coordination of word recognition and text comprehension "orthographic mapping skills" (i.e., efficiently remembering words). He stresses that teachers need to help students improve their proficiency in letter-sound correspondence and phonemes after knowing how to sound out words.

3. The Reading War

A long history of the debate in reading instruction centers on phonics instruction and the whole-language approach regarding how to teach reading. This reading war can be analogized to teaching a hungry man how to fish versus giving him a fish to feed for one day. When students are taught how to read, they can read for a lifetime, though it takes a tremendous effort at the beginning. In contrast, when students learn to guess what they are reading from pictures and context clues, they have a lot of fun initially but will never become good readers because they are not taught to attend to the letter-sound correspondence and thus do not know how to decode words.

3.1. Phonics instruction vs. Whole-language approach

Phonics instruction teaches the individual sounds of letters and how they are blended to make words, systematically moving from phonology to morphology, syntax, semantics, and pragmatics. Proponents of phonics instruction believe that a strong knowledge of the letter-sound correspondence will lead to accurately decoding familiar and unfamiliar words, thus enhancing reading comprehension. Snow and Juel (2005) stated, "attention to small units in early reading instruction is helpful for all children, harmful for none, and crucial for some" (p. 518). Research has shown that systematic phonics instruction is crucial for most students to learn how to read. Seidenberg (2017) argued that teaching reading should be based on science,

not beliefs. He stated that the science of reading is not meant to address all issues affecting students' reading achievement. Instead, it is to suggest ways that are grounded in facts to promote students' reading success. To improve students' reading comprehension, teachers must first be willing to change their mindset from teaching reading based on their beliefs to teaching reading based on science.

The whole-language approach barely focuses on sounds. It teaches reading by looking at words in conjunction with pictures and the context in which words are used. Unlike phonics instruction which views reading as a cognitive and linguistic process, the whole-language approach considers reading a cultural and social process. The whole-language approach stresses immersion, motivation, and contextual clues. Students learn to guess words and make sense of their reading based on pictures, sentence structure, and other cues. One of the leading proponents is Goodman (1979), who believed reading is a psycholinguistic guessing game. He proposed three cueing systems: semantic (readers guess the meaning from contexts), syntactic (readers guess the meaning from sentence structures), and graphophonic (readers guess the meaning from visual cues of letters and sounds). Proponents of the whole-language approach claim that students can automatically learn how to read by giving them good books with some guidance and fun activities. Unfortunately, there is a lot of misunderstanding of reading in the whole-language approach. Humans are not born to read. Without teaching students how to read, they had to guess and memorize words to compensate for their inability to process words. They cannot sound out unfamiliar words. The frustration would gradually take away students' motivation and passion for reading, leading to behavioral concerns.

3.2. Structure literacy vs. Balanced literacy

As a result, the reading war leads to two different approaches: structured literacy and balanced literacy. Structured literacy teaches students phonics explicitly and systematically, from sound patterns to sequential rules. Words containing the same sounds are grouped to facilitate students' practices in structured literacy. Students are encouraged to apply phonics rules to sound out words. In contrast, balanced literacy organizes words from the letter A to Z with a mixture of sounds, syllables, and rules not organized in sequence. Students in the balanced literacy classroom are encouraged to look at pictures and cues to guess, and they are often asked to reread sentences until they make sense. While balanced literacy focuses on leveled books, structured literacy emphasizes decodable books. Hoover and Tunmer (2020) argued that "balance in instruction is not what is critical; directing appropriate instruction to where it is needed, given a student's current development is" (p. 39). Balanced literacy is a repackaging of the whole-language approach, and phonics is just one of the ingredients in balanced literacy. Structured literacy urges educators to teach phonics explicitly and systematically.

Structured literacy proponents argue that balanced literacy teaches students to do what poor readers are exactly doing: guessing and memorizing. In the whole-language approach, students are like detectors looking for cues to comprehend the text. On the contrary, good readers do not rely on contexts. They often quickly recognize the words and comprehend their meaning because they have developed phonological awareness and thus know that words are made of different letters with different sounds. They use context to help them confirm what they are reading instead of using the context to find the meaning. Structured literacy teaches students to read through a sequence from phonemes, phonics, syllables, morphemes, vocabulary, syntax, paragraphs, and text structures. The instruction is taught explicitly by teachers modeling correct pronunciation, guiding students to practice with the model, assessing students' phonics ability, and providing timely feedback. Sequence and scopes are stressed in structured literacy to ensure that instruction is delivered explicitly, systematically, and cumulatively (Earle & Sayeski, 2017).

4. Dyslexia and Comorbidities

Research shows that reading disorders co-exist with other disabilities or disorders, such as anxiety, attention deficit hyperactivity disorder (ADHD), autism spectrum disorder (ASD), conduct disorder (CD), depression, oppositional defiant disorder (ODD), and specific learning disabilities (SLD) (Hendren et al., 2018). This is because "multiple predictors of each disorder have shared or overlapping genetic…as well as neural and cognitive risk factors" (Hendren et al., 2018, p. 3). An unsolved question is whether this comorbidity simply overlaps or one causes or affects the other. For example, when students do not know how to read but are frequently asked to read in public, peer teasing and bullying could impact their emotions (e.g., anxiety, poor self-image) and behavior (e.g., avoidance, aggression). It could be that students do not have emotional or behavioral disorders, but they appear to be the results of struggling with reading. Another possible explanation is that dyslexia goes unnoticed when a student has a more noticeable disorder like ADHD, ASD, and ODD. The accumulated frustration from not being able to read deteriorates the co-existent disorder. Some researchers pointed out that deficits in executive functioning found in students with ADHD are not directly associated with dyslexia, but they can negatively affect students' attention when learning to read (de Jong et al., 2006). Learning to read involves many parts of the brain and requires multiple executive functioning. When one part does not function properly, it will undeniably affect the other parts.

5. The Orton-Gillingham Approach

The Orton-Gillingham approach was named after Samuel Torrey Orton (1879–1948), a neuropsychiatrist and pathologist who developed this approach to respond to reading failure and language processing difficulties. According to Peavler and Rooney (2019), "As early as 1925, he had identified the syndrome of dyslexia as an educational problem" (p. 5). His

successor, Anna Gillingham (1878–1963), an educator and psychologist, compiled her work with Orton's and published materials for teacher training and student intervention, known as the Orton-Gillingham approach. Initially, this approach was mainly used in one-on-one or small-group settings. With more and more research studies proving its effectiveness, this approach is now used in various settings with a broader population of students. Peavler and Rooney (2019) stated, "reading, spelling, and writing difficulties have been the dominant focus of the approach, although it also has been adapted for use in mathematics instruction" (p. 5) to meet students' learning needs. Table 2 summarizes the five essential characteristics of the Orton-Gillingham approach, distinguishing itself from other phonics instruction or traditional literacy instruction.

Table 1. The characteristics of the Orton-Gillingham approach (Peavler & Rooney, 2019)

Characteristics	Description
Systematic, Sequential, and Cumulative	• Lesson activities are repetitive and procedural. • Concepts are taught from simple to complex. • The previous content is reviewed and connected to new content. • Practice is emphasized to ensure mastery. • The scope and sequence are emphasized for prerequisite skills.
Explicit, Direct Instruction	• Concepts are explicitly taught. • A gradual release of support is utilized (I do/we do/you do)
Multi-sensory Engagement	• Lessons are taught in multi-sensory activities. • Activities for the retention and retrieval of information are used.
Data-Based Decision-Making and Tiered Instruction	• Assessment data is gathered to inform instructional decisions. • At the individual or small-group level, lesson plans are tailored to students' needs. • At the whole-group level, instruction focuses more on preventative/ universal instruction than diagnostic/prescriptive instruction.
Structured Literacy	• Not just teaching phonics but phonological awareness, spelling, and morphemes.

6. Structured Literacy Activities

In the following section, the author describes ten structured literacy activities from her clinical experience, including phonemic awareness, phonemes production, teaching a new letter, the three-part drill, word and sentence dictation, heart words, marking words, teaching consonant-le (c-le), consonant and vowel graphemes, a sound wall.

6.1. Phonemic Awareness: Say it move it

Figure 1. Say it move it

Figure 1 shows an example of using *Say It Move It*, with each circle representing one sound for students to manipulate (e.g., c-a-t). When choosing words for phonemic activities, individual consonants and short vowels are the first two categories of sounds that should be taught earlier (Beck & Beck, 2013). After mastering these sounds and their corresponding graphemes, students will be able to say and spell words like cat, mop, sit, pet, and rub. Later, long vowel sounds and their corresponding graphemes will be introduced through CVCe words where e at the end is silent, and the vowel sound is changed from a short vowel to a long vowel, such as cake, rice, hope, and rude. Beck and Beck (2013) proposed the sequence of teaching sounds from individual consonants, short vowels, consonant blends/clusters, consonant digraphs, long vowels in CVCe words, long vowels in CVVC words, R-controlled vowels, diphthongs, and other vowel patterns. Similarly, Bloom and Traub (2005) suggested that phonemes be taught from the nine basic individual consonants (c, o, a, d, g, m, l, h, t). Then, the subsequent sounds are introduced one at a time, starting from CVC words, consonant digraphs, two-syllable words, multi-syllabic words, to more complicated words. Although not identical, both of their sequences still align with each other. Teaching sounds should start from individual and simple consonants, short vowels in the CVC patterns, to more complicated patterns.

6.2. Phonemes production

After introducing the 44 phonemes in English, teachers can encourage students to videotape their practice of the phonemes and reflect on their videos, sharing what sounds are difficult to pronounce. Before asking students to do phonemes production, teachers need to videotape their own practice of the phonemes for modeling. Teachers then provide a chart of the 44 phonemes chart along with the video to facilitate students' making of phoneme production videos. Based on students' videos and reflections, teachers can develop follow-up lessons to strengthen particular sounds. It is not uncommon to see that different resources and linguistics textbooks classify phonemes differently (Moats, 1998; Reithaug, 2002).

6.3. Teaching a new letter

There are five essential steps in teaching a new letter: 1) listen to alliteration sentences, 2) show the letter, 3) teach keywords involving the letter, 4) practice the letter-sound correspondence with auditory and kinesthetic activities, and 5) use the word and sentence dictation. When teaching a new concept, teachers can use the "I do, we do, you do" model to provide students with explicit and systematic instruction. Students should have sufficient opportunities to practice and receive feedback. Creative and engaging activities will maximize students' learning of phonics. Teachers can implement a simple and easy intervention daily

with a group of students or individual students to teach or enhance students' letter-sound correspondence.

6.4. The three-part drill

The three-part drill is an effective way to review sounds and letters that have been taught. The drill includes three parts: a visual drill (see, say), an auditory drill (hear, write), and a blending drill (read words). Teachers can create a weekly plan after students have learned c, o, a, d, g, m, l, h, and t. Each day at the beginning of the class, teachers can incorporate a 6-minute phonological awareness activity. An example of a weekly plan:

- Monday: Three-Part Drills on c, o, a, d, g, m, l, h, t
- Tuesday: Re-teach letters and sounds that students did not do well on Monday
- Wednesday: Three-Part Drills on c, o, a, d, g, m, l, h, t (review)
- Thursday: Re-teach letters and sounds that students did not do well on Wednesday
- Friday: Three-Part Drills on c, o, a, d, g, m, l, h, t (review)

6.5. Word and sentence dictation

Word and sentence dictation is another effective way to review a particular letter. Dictation is the process of writing what has been said. Word and sentence dictation allows a teacher to model writing behaviors (i.e., handwriting), letter-sound correspondence, and sentence formation. For example, the teacher may say, "I want you to finger-tap the sounds of the word and pound the syllable. The word is *cat*. The cat is cute. Do this with me. [POUND] cat, [FINGER TAP] c-a-t, [POUND] cat. Now spell the word, *cat*, and write the sentence, *the cat is cute*." This activity allows the students to learn about the sounds associated with different letters and words, letter formation, spacing of words, etc. This activity can be used daily.

6.6. Heart words

After students have mastered the letter-sound correspondence principles that can be applied to decode approximately 80% of English words, it is time to teach them irregular words with strategies. These irregular words are often called "heart words" (Really Great Reading, 2022) or "red words" (The Institute for Multi-Sensory Education, 2022), such as *his* /hiz/. It is worth mentioning that many teachers confuse sight words with whole words. Sight words are words students can read without conscious effort. Skilled readers have more sight words than poor readers. In addition, high-frequency words are more likely to become sight words because students often read them in print. It is a poor teaching practice for teachers to ask students to memorize the whole word when teachers do not know how to explain an irregular word to students. Memorizing so many words without explicit instruction causes so much anxiety, and it is not an effective way to learn, either. The use of the heart words teaches students that

though some words are irregular, part of an irregular word is still decodable based on the letter-sound correspondence principles. Therefore, students do not need to memorize the whole word. They only need to learn the exceptional part by heart. Because some high-frequency words are irregular (e.g., once, of, his, from, said, etc.), these words also need to be taught systematically and explicitly.

6.7. Marking words

This Reading Mama (2022) offers free and open-to-the-public videos on YouTube to explain the six types of syllables, including closed syllables, magic e syllables, open syllables, vowel teams, r-controlled syllables, and c-le syllables. When reading a word, students will first label the vowels. Then, they will label the consonants between the vowels. After that, they will determine the syllable pattern and slash the syllables. They will pronounce the vowel based on whether it is an open syllable (long vowel) or a closed syllable (short vowel). *Teacher Mama School* (2022) is another good resource; it summarizes nine types of syllable patterns, as shown in Table 2.

Table 2. Nine types of syllable patterns (Teacher Mama School, 2022)

Syllable Pattern	Word	Syllable Marking		
VC/CV	picnic, sunlit, napkin	**pic** | **nic** vc cv	**sun** | **lit** vc cv	**nap** | **kin** vc cv
VCC/CV	sandwich, pumpkin	**sand** | **wich** vcc cv	**pump** | **kin** vcc cv	
VC/CCV	lobster, complex	**lob** | **ster** vc ccv	**com** | **plex** vc ccv	
VC/C-le	puzzle, gobble	**puz** | **zle** vc cle	**gob** | **ble** vc cle	
V/C-le	bugle	**bu** | **gle** v c-le		
VCC/CCV	handshake, grandstand	**hand** | **shake** vcc ccv	**grand** | **stand** vcc ccv	
V/CV	pretend, rotate	**pre** | **tend** v cv	**ro** | **tate** v cv	
VC/V	habit, brigade	**hab** | **it** vc v	**brig** | **ade** vc v	
V/V	poem, riot	**po** | **em** v	**ri** | **ot** v	

After students know how to apply the phonics principles to sound out multiple-syllable words, they need to know where to correctly put the stress in a word (e.g., palace). Word stress is difficult not only for struggling readers but also for English language learners. Seidenberg (2017) uses "stress deafness" to describe how hard stress can be, especially for students unfamiliar with the language. Thus, teaching syllable marking and word stress in structured literacy is essential.

6.8. Teaching consonant-le (c-le)

When teaching consonant-le, such as -ble, -fle, -tle, -dle, -kle, -ple, -zle, -cle, teachers can ask students to brainstorm the words that end with these consonant-le sounds. They can use *Move It Say It*, marking words, word and sentence dictation, and the heart word strategy to ensure that the new concept is taught explicitly in an engaging learning environment.

6.9. Consonant and vowel graphemes

Consonant graphemes include simple, double, digraph, trigraph, silent letters, and oddities. Vowels include short, long, single, diphthong, silent e, and vowel-r. After students have mastered all the phonemes, teachers can do a jigsaw or grouping activity to help students organize different consonants and vowels, reinforcing the concept that English is a rule-governed language. Teachers can also use graphic organizers to group consonant and vowel graphemes, as shown in Table 3, to break graphemes into multiple mini-lessons.

Table 3. Examples of consonant and vowel graphemes (Moats, 2020)

Consonant Graphemes	
Simple letters	p, b, t, d, k, c, g, f, v, s, z, h, m, n, w, y, r, l, j
Doublets	ff, ll, ss, zz
Digraphs/trigraphs	ch/tch, ph, sh, gh, th, ng, wh, ck, ge, dge
Silent letter combinations	bt, gn, kn, lk, lm, mb, mn, ps, rh, wr
Oddities	qu = /kw/, x = /ks/ or /gz/
Vowel graphemes	
Lax (short) vowels, single letters	a(mad), e(mess), i(bit), o(rob), u(cut), u(put), y(gym)
Tense (long) vowels, single letters	se-cret, ba-by, ta-ble, di-graph, cry, ro-bot
VCe pattern	theme, bide, made, robe, cute, rare, here, fire, store, sure
Vowel teams for lax, tense, diphthong, and vowel-r sounds	(ee, ea, ei, ie, ey), (ai, ay, ei, eigh, ey), (ea), (ie, igh), (oa, ow, oe, ough), (ue, ui, ew, ou, ough), (au, aw, augh), (oo), (ou, ow), (oi, oy), (ear, eer, air, oar, our)
Vowel-r combinations	er, ar, or, ur, ir

6.10. A sound wall

-og	-op	-ot
log	hop	cot
hog	mop	pot
frog	pop	dot
jog	top	hot

Figure 2. A sound wall

Figure 2 shows an example of a sound wall. Word walls and sound walls are different. A word wall consists of using all 26 letters and organizing them alphabetically. Words are placed under each letter based on the first letter of each word, which does not help students understand sound patterns. In contrast, a sound wall focuses on articulating sounds and the letter patterns representing the sounds/phonemes in words. This teaches students to hear the individual phonemes in words, and the sound wall displays different ways to spell those sounds (Bottari, 2020). Using a sound wall and decodable books is recommended for struggling students, English language learners, and beginning English learners. Unlike a word wall or grade-level books, a sound wall and decodable books control the letter-sound correspondence to raise students' phonological awareness.

7. Discussion and Conclusion

Students with dyslexia are characterized as having difficulties in decoding and word recognition. However, each student with dyslexia is different on their own due to the complex factors intertwined across genetic, neural, cognitive, and environmental aspects. Phonics instruction that is carried out explicitly, systematically, and cumulatively has proved effective for all students, especially those with dyslexia. Dyslexia should be viewed as an educational problem more than a disability. As educators, we need to fix our instruction and the educational system, not the students. When educators better understand dyslexia and receive adequate training on addressing students' challenges and strong points, we can put in the effort needed to help students. The more the students understand their diagnosis, the more they will be able to advocate for themselves, gain a sense of ownership, and know that having dyslexia is a gift because their brains work in a different, amazing way. Effective instruction makes reading accessible to students with dyslexia and thus alleviates their anxiety and stress, which can prevent emotional and behavioral issues like depression, aggression, and avoidance. The dyslexia movement raises educators' awareness that we should stop using ways that teach students to "guess" what they are reading. To cultivate successful readers, we need to teach students based on the science of reading, not personal beliefs. The ten ready-to-use activities described in this article offer concrete examples of structured literacy instruction. The author hopes this article will help educators become more selective about their instructional methods

and the books to promote the development of strong literacy skills such as word recognition and language comprehension. With the words and themes getting more complex for upper-grade students, fundamental reading skills are essential to lead them to become competent and independent readers.

Declaration of Conflicting Interests and Ethics

The authors declare no conflict of interest.

References

Beck, I. L. & Beck, M. E. (2013). *Making sense of phonics: The hows and whys* (2nd edition), Guilford Publications.

Bloom, F. & Traub, N. (2005). *Recipe for reading: Intervention strategies for struggling readers.* Educators Publishing Service.

Bottari, M. (2020). *Transitioning from word walls to sound walls.* https://www.readingrockets.org/article/transitioning-word-walls-sound-walls

Catts, H. & Hogan, T. (2021). An ounce of prevention is better than a pound of diagnosis and treatment. *The Reading League Journal,* 6-12.

de Jong, C. G., Oosterlaan, J., & Sergeant, J. A. (2006). The role of double dissociation studies in the search for candidate endophenotypes for the comorbidity of attention deficit hyperactivity disorder and reading disability. *International Journal of Disability, Development, and Education, 53*(2), 177-193.

Earle, G. A., & Sayeski, K. (2017). Systematic instruction in phoneme-grapheme correspondence for students with reading disabilities. *Intervention in School and Clinic, 52*(5) 262-269.

Georgia Department of Education (2022). *Dyslexia information handbook*. https://lor2.gadoe.org/gadoe/file/e6c894b8-f0f8-47c1-a852-1bcc86601a0a/1/Dyslexia%20Informational%20Handbook_1_14_2022.pdf

Goodman, K. S. (1979). Reading: A psycholinguistic guessing game. In H. Singer & R. B. Ruddell (Eds.), *Theoretical models and processes of reading* (pp. 259–271). Newark, DE: International Reading Association.

Gough, P. B. & Tunmer, W. E. (1986). Decoding, reading, and reading disability. *Remedial and Special Education, 7,* 6-10.

Hendren, R. L., Haft, S. L., Black, J. M., White, N. C., & Hoeft, F. (2018). Recognizing psychiatric comorbidity with reading disorders. *Frontiers in Psychiatry, 9*, 101. https://doi.org/10.3389/fpsyt.2018.00101

Hoover, W. A., & Tunmer, W. E. (2020). The simple view of reading: A useful way to think about reading and learning to read. *The Reading League Journal, 1*(2), 35-40.

Kearns, D. M., Hancock, R., Hoeft, F., Pugh, K. R., & Frost, S. J. (2018). The neurobiology of dyslexia. *Teaching Exceptional Children, 51*(3), 175-188.

Kilpatrick, D. A. (2015). *Essentials of assessing, preventing, and overcoming reading difficulties.* Wiley & Sons, Inc.

Lindstrom, J. H. (2018). Dyslexia in the schools: Assessment and identification. *Teaching Exceptional Children, 51*(3), 189-200.

Moats, L. C. (1998). *Teaching decoding.* https://www.aft.org/ae/springsummer1998/moats

Moats, L. C. (2020). *Speech to print: Language essentials for teachers* (3rd edition). Brookes Publishing.

National Center on Improving Literacy (2022). State of dyslexia. https://improvingliteracy.org/state-of-dyslexia

Peavler, J. & Rooney, T. (2019). *Orton Gillingham "join the journey in support of reading: Teacher manual.* M.A. Rooney Foundation. https://or.dyslexiaida.org/wp-content/uploads/sites/20/2020/06/OG-Training-Manual-2019.pdf

Price, C. J. & McCrory, E. (2005). Functional brain imaging studies of skilled reading and developmental dyslexia. In Snowling, M. J. and Hulme, C. (Eds). *The science of reading: A handbook.* Malden: Blackwell Publishing, 473-496.

Reithaug, D. (2002). *The 44 phonemes chart.* https://www.boardman.k12.oh.us/userfiles/363/Phonological%20Awareness/44Phonemes.pdf

Really Great Reading (2022). Heart word magic - Help students learn to read and spell high-frequency and sight words. https://www.reallygreatreading.com/heart-word-magic

Scarborough, H. S. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S. Neuman & D. Dickinson (Eds), *Handbook for research in early literacy* (pp. 97-110). New York: Guilford Press.

Seidenberg, M. (2017). *Language at the speed of sight: How we read, why so many can't, and what can be done about it?* Basic Books.

Snow, C. E. & Juel, C. (2005). Teaching children to read: What do we know about how to do it? In Snowling, M. J. and Hulme, C. (Eds). *The science of reading: A handbook.* Malden: Blackwell Publishing, 501-520.

Teacher mama School (2022). Free printable for kids. https://teachermamaschool.wixsite.com/teachermamaschool

The Institute for Multi-Sensory Education (2022). How to teach red words. https://journal.imse.com/how-to-teach-red-words/

This Reading Mama (2022). Hands-on learning for home or school. https://thisreadingmama.com/

The Yale Center for Dyslexia & Creativity (2022). *How common is dyslexia?* https://dyslexia.yale.edu/
