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PERSPECTIVES

ON LANGUAGE AND LITERACY

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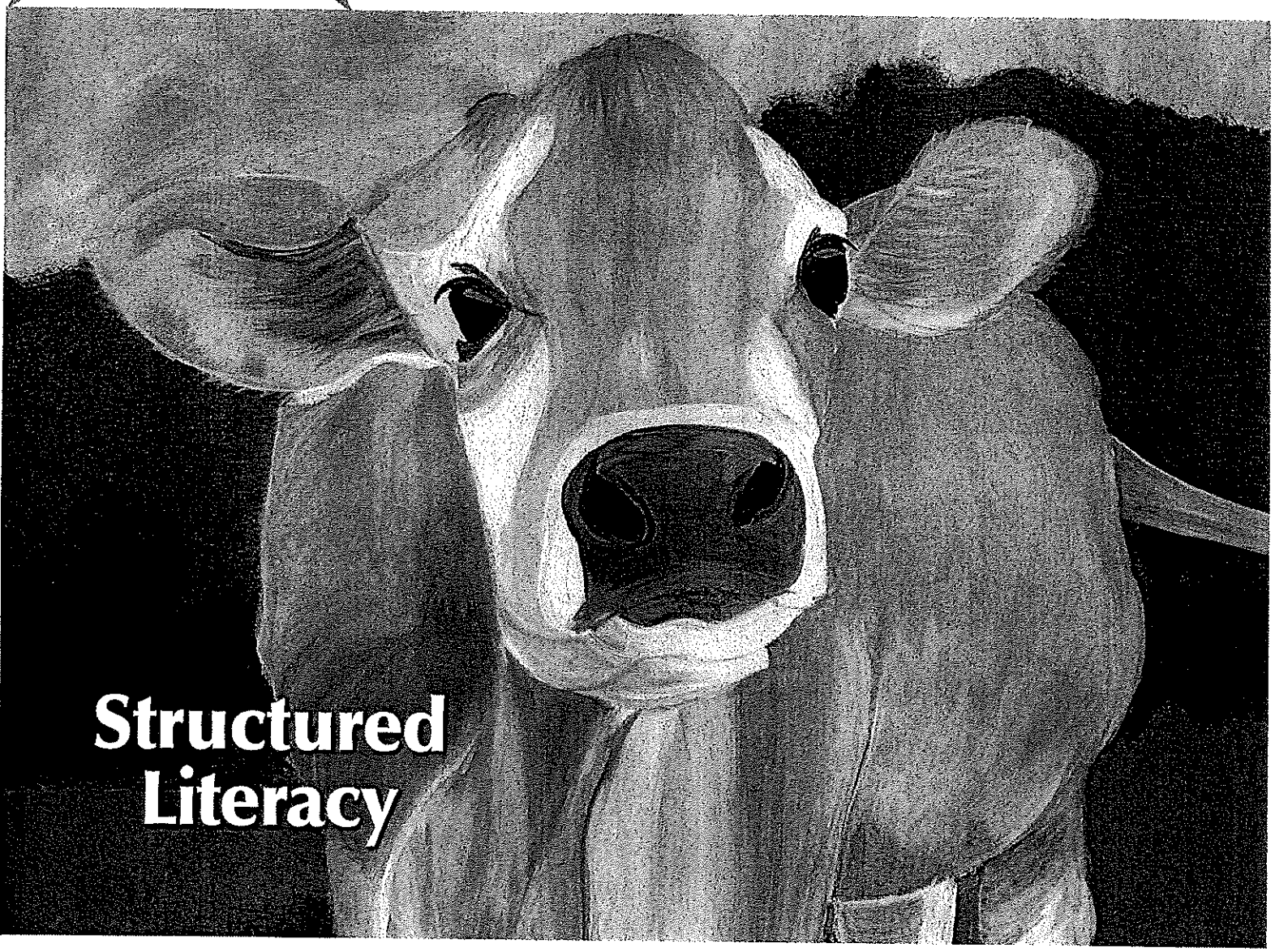

Structured Literacy

International DYSLEXIA Association®

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MISSION

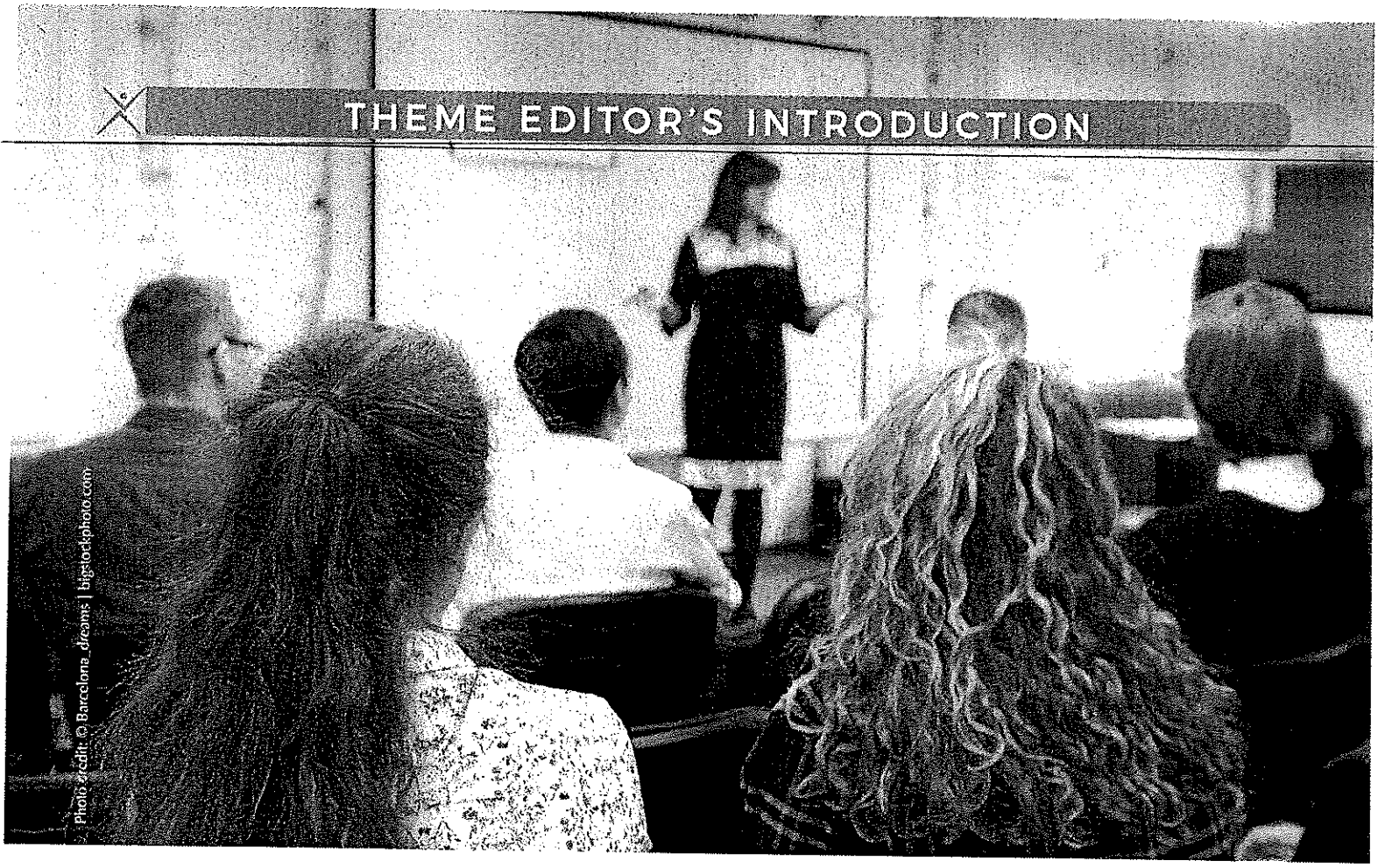
The International Dyslexia Association (IDA) is committed to creating a future for all individuals who struggle with dyslexia and other related reading differences so that they may have richer, more robust lives and access to the tools and resources they need.

Structured Literacy

The International Dyslexia Association (IDA) is a 501(c)(3) non-profit, scientific and educational organization dedicated exclusively to the study and treatment of the specific language disability known as dyslexia. We have been serving individuals with dyslexia, their families, and professionals in the field for over 70 years. IDA was first established to continue the pioneering work of Samuel T. Orton, M.D., in the study and treatment of dyslexia.

IDA members include people with dyslexia and their families, educators, diagnosticians, physicians, and other professionals in the field. IDA's home office, 43 branches in the United States and Canada, and 26 Global Partners provide educator training, publications, information, and support to help struggling readers around the world. IDA's Annual Conference attracts thousands of outstanding researchers, clinicians, parents, teachers, psychologists, educational therapists, and people with dyslexia.

ON THE COVER: Untitled by Riley Schutt



Structured Literacy

by Louise Spear-Swerling

Recently I held the first session of a graduate course that I teach on diagnostic assessment. This is an evening class, and the students are almost all licensed teachers who are already working in schools. Many are special educators, with some general educators as well. While reviewing the course outline with the students, I noted that one of the key topics to be addressed in the coming semester was Structured Literacy, and I asked how many students were familiar with this approach to instruction. A few tentative hands went up, none with confidence. Then one of the students smiled sheepishly and said, "Well, I'm not completely sure what it is, but it's definitely the new buzzword in my district!" That comment brought a round of appreciative laughter from the rest of the group.

Readers of this issue of *Perspectives* should come away with a clear idea of what Structured Literacy (SL) involves as well as how it differs from the literacy practices that currently are typical in many schools. Although the term is relatively new, core features of SL and their value for teaching students with literacy difficulties have been recognized for years (e.g., Carnine, Silbert, Kame'enui, & Tarver, 2009; Moats, 1999). These features include instruction that is highly explicit and systematic; addresses all important components of literacy; includes a high level of teacher-student interaction; and provides prompt, targeted feedback to student errors. Furthermore, although often recommended for struggling readers, Structured Literacy is an effective approach for teaching literacy skills to all students.

Despite their effectiveness, however, SL approaches are not common in schools (Moats, 2017; Spear-Swerling, 2019), nor are many educators well prepared to implement them. For example, Joshi et al. (2009) found that many popular reading methods textbooks for teacher candidates failed to address important components of reading and the science of reading. In a knowledge survey of a group of licensed teachers, Spear-Swerling and Cheesman (2012) found that over half did not

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Abbreviation

SL: Structured Literacy

recognize when a poor decoder had been placed for instruction in a book that was too difficult for her to read. Over 70% could not correctly identify words that would be easiest for a beginning decoder to blend based on the number and type of phonemes, such as continuous sound consonants as opposed to stop consonants. (For example, even though *man* and *tap* each have three phonemes, *man* is easier for children to blend than *tap*, because /m/ and /n/ are continuous sounds whereas /t/ and /p/ are stop consonants.) These and numerous other studies demonstrate many educators' need for professional development involving SL and the science of reading.

Three articles in this issue focus on how to use SL in teaching various components of literacy. Stephanie Al Otaiba, Jill H. Allor, Kristi Baker, Carlin Connor, Jennifer Stewart, and Veronica Mellado de la Cruz discuss explicit, systematic approaches for teaching phonemic awareness and word decoding. They describe how teachers can build young children's competence from beginning levels of phonological awareness, to the ability to blend and segment all sounds in a simple word, to decoding simple words, to more advanced levels of decoding. They also provide many helpful online sources for information about evidence-based programs consistent with SL.

Louisa Moats describes spelling instruction in an SL approach, emphasizing that good spelling depends on multiple kinds of language knowledge—phonology, orthography, semantics, and morpho-syntax. She guides readers through a systematic sequence for teaching spelling, beginning with very simple words and progressing through multi-syllabic words. She also demonstrates the usefulness of alphabetic and linguistic knowledge for spelling unpredictable or "irregular" words (e.g., *done, pretty*).

Charles W. Haynes, Susan Lambrecht Smith, and Leslie Laud detail SL techniques for written expression, starting with word-level strategies. They then provide a carefully structured sequence of sentence-level, micro-discourse (two to four interrelated sentences), and paragraph-level instructional strategies. Their article includes many effective visuals and practical suggestions for teachers to help improve students' writing.

All three of these articles exemplify central features of SL. Important literacy skills are taught directly, clearly modeled and explained by teachers; children are not expected to infer these skills only from exposure or incidental teaching. Instruction is carefully sequenced, with prerequisite skills taught first. For example, children are not expected to decode or spell complex words (e.g., *fanned, smiling*) before they have mastered simpler ones (e.g., *fan, smile*). SL emphasizes teacher-led instruction, using carefully chosen examples of the skills being taught. For instance, Haynes and his colleagues discuss the value of including topic-centered vocabulary in teaching written expression skills such as sentence and paragraph writing. Topic-centered vocabulary lessens demands on students' working memory and also provides students with practice applying previously taught vocabulary words.

The articles in this issue illustrate that SL is not about rigid adherence to one commercial program or specific instructional method. A variety of methods, programs, and materials reflect key characteristics of SL and can be valuable aids to teachers in delivering SL instruction. It must be noted, however, that some educational approaches and materials are simply incompatible with Structured Literacy. These include texts that encourage children to guess at words based on pictures rather than facilitating application of decoding skills; spelling programs that emphasize rote memorization of unpatterned words; and heavily meaning-focused writing approaches lacking structure or attention to direct teaching of important writing skills. SL also is not about finding an alternate route to literacy learning for students with disabilities, such as visual memorization of whole words. Rather, SL involves helping these children to develop the linguistic knowledge and skills needed by *all* students to become proficient readers and writers.

Two additional articles in this issue address other topics critical to implementation of Structured Literacy. Melissa Farrall and Jane Ashby address assessment practices for SL. Their observation that poor reading comprehension should be regarded primarily as a flag for further assessment is especially apt. Their observation holds just as well for written expression. There are many reasons why children can struggle in these broad areas—difficulties with basic decoding and spelling skills, limitations in vocabulary and background knowledge, and syntactic weaknesses, to name a few. Farrall and Ashby show how techniques such as error analysis can help teachers target Structured Literacy teaching to benefit individual students.

Kristin L. Sayeski addresses how to prepare teachers in SL methods. Her discussion of opportunity costs—the idea that time and effort devoted to preparation in some areas inevitably means less time and energy available for others—is particularly important. Prospective teachers must develop many competencies across numerous domains, a reality that requires setting priorities in teacher education. Failing to do so leads to inadequate preparation in key areas; and there is little that is of higher priority than finding ways to teach reading and writing effectively to all children, including those who struggle. The kind of teacher preparation that Sayeski details could extend the benefits of SL to a much broader range of struggling learners.

Structured Literacy is currently receiving attention as a way to reach students with dyslexia and other learning difficulties. If implemented as part of general education instruction, many features of SL could benefit a broad range of other children as well. The articles in this issue should help to make SL not merely a "buzzword," but provide a meaningful guide for teachers and teacher educators in understanding Structured Literacy instruction.

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Teaching Phonemic Awareness and Word Reading Skills

Focusing on Explicit and Systematic Approaches

by Stephanie Al Otaiba, Jill H. Allor, Kristi Baker, Carlin Conner, Jennifer Stewart, and Veronica Mellado de la Cruz

For the purpose of this article within this special issue on Structured Literacy, we were asked to address the code-focused skills of phonemic awareness and word reading. Findings from research studies converge to show that explicit and systematic instruction helps most students understand how speech sounds, or phonemes, map to letters and patterns within words, which can greatly reduce the prevalence of reading problems (e.g., Brady, 2011; Lonigan & Shanahan, 2009; National Reading Panel Report (NRP), 2000; Wanzek et al., 2013). However, challenges learning these skills are an indication of many reading difficulties, which limit students' understanding of grade-level academic material. Most (67%) of fourth grade students with disabilities read below a basic level (National Assessment of Educational Progress (NAEP), 2015).

The responsibility for providing early interventions to prevent reading difficulties initially rests with general educators, but may gradually involve dyslexia specialists, special educators, and other service providers, such as speech and language pathologists. Since 2004, under the Individuals with Disabilities Act and continuing under the Every Student Succeeds Act (ESSA, 2015), schools are expected to monitor students' risk of reading problems on universal screeners, provide evidence-based early interventions, track student progress, and evaluate students with the most severe reading needs for special education and/or dyslexia services. The terms Response to Intervention (RTI) or Multi-Tiered Systems of Support (MTSS) are used to describe this process of providing a strong core, or Tier 1 instruction, followed by increasingly intensive tiers of intervention guided by ongoing student data (e.g., Gersten et al. 2009).

In our work training teachers to deliver reading instruction and intensive interventions, we rely on a framework known as *The Simple View of Reading* (Gough & Tunmer, 1986) to explain that reading is the product of a) code-focused skills such as phonemic awareness and decoding, and b) meaning-focused skills such as vocabulary and comprehension. Both of these sets of skills are part of the International Dyslexia Association's recently trademarked term Structured Literacy (and are emphasized in IDA's Knowledge and Practice Standards; *https://dyslexiaida.org/knowledge-and-practices*). Structured Literacy instructional approaches are consistent with the broader research base for explicitly and systematically teaching the structure of language across the domains of listening, speaking, reading, and writing (e.g., NRP, 2000). The approach is also consistent with the broader research base on effective instructional strategies for all students, but are particularly critical for students with or at-risk for reading problems; this research supports the importance of teachers carefully selecting and sequencing instructional targets, explicitly modeling skills, providing immediate supportive and corrective feedback, ensuring students have multiple opportunities to practice to mastery, and encouraging student engagement (e.g., Carnine, Silbert, Kame'enui, Slocum & Travers, 2017).

Structured Literacy instructional approaches are consistent with the broader research base for explicitly and systematically teaching the structure of language across the domains of listening, speaking, reading, and writing.

Code-focused Skill Instructional Sequence

Also known as phonological sensitivity, phonological awareness is the global awareness of the sounds in speech, including the words in a sentence, including the syllables within a word, and what is known as the onset and the rime. The onset is the first sound, and the rime is the remainder of a word. For example, in the word "rime," the onset is /r/ and the rime is /ime/. Phonological awareness is the precursor to phonemic awareness, or the awareness of each individual sound within a word. More advanced levels of phonemic awareness include manipulating sounds which support higher levels of phonics and spelling word and syllable patterns (Kilpatrick, 2015). Although this type of advanced instruction supports accurate and fluent reading, we focus more on the initial levels of phonemic awareness instruction to support early decoding.

Mapping Phonemic Awareness to the Alphabetic Principle

Although there are many different skills within phonemic awareness that require explicit teaching, *blending and segmenting at the phoneme level* are the most important skills as

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Abbreviations

ESSA: Every Student Succeeds Act
FOTB: Friends on the Block
MTSS: Multi-Tiered Systems of Support
RTI: Response to Intervention

they lead directly to decoding (e.g., sounding out simple words) and encoding (e.g., spelling simple words). We illustrate the general progression of these skills in Figure 1, showing how students move from a basic level of understanding that spoken words are made up of speech sounds to connecting that idea to print by sounding out printed words and spelling (i.e., alphabetic principle). The most basic level within Figure 1 focuses on the first sound of a word. At this level, the teacher provides the student with practice blending simple words (e.g., mat). The teacher says the first sound and then the rest of the word (i.e., rime), and the student blends these together into a single word. For example, the teacher would say, /mmm/ /at/ and the student would say *mat*. When teaching students to segment at this level, the teacher says the entire word and the student says just the first sound. For example, the teacher asks, "What's the first sound in *mat*?" and the student says /mmm/.

The next level focuses on all of the individual phonemes within words. At this level, the teacher provides the individual phonemes (e.g., /mmm/ /aaa/ /t/) and then asks the student to blend the sounds to say the word (e.g., *mat*). The final level is to connect the individual phonemes to print. When teaching students to blend with print (i.e., sounding out words), the student sees a simple word like *mat*, says the speech sound represented by each letter, and then blends to read the word. For example, the student would see the word *mat*, say the phonemes for each letter (/mmm/ /aaa/ /t/), and then say the word as a whole, *mat*. When teaching students to segment with print (i.e., spelling), students hear or say a word, segment the individual phonemes in the word, and write the letter that represents each phoneme. For example, the teacher says *mat* and then the student says /mmm/ /aaa/ /t/, writing the letter that represents each sound, *mat*.

Building from the Alphabetic Principle to Develop Phonics and Word Study

When students have progressed through the developmental sequence just described, they are said to have mastered the *alphabetic principle;* they have a solid understanding that words are made up of individual sounds, and sounds are represented by printed letters. They can also blend sounds represented by letters to decode simple words. At this stage students will continue learning the sounds for more letters and letter patterns, as well as irregularly spelled high-frequency words. We illustrate additional key phonics and word study skills in Figure 2.

Progression of Skills from Phonological Awareness to the Alphabetic Principle

		Blending	Segmenting
	First Sound	Blend first sound and rime *Teacher: /mmmm/ /at/* *Student: mat*	Isolate the first sound *Teacher: mat* *Student: /mmmm/*
	Phoneme by Phoneme	Blend all phonemes *Teacher: /mmmm/ /aaa/ /t/* *Student: mat*	Segment phonemes *Teacher: mat* *Student: /mmmm/ /aaa/ /t/*
	Link to Letters	Decode (consonant-vowel-consonant) *Student: sounds out and reads "mat"*	Spell (consonant-vowel-consonant) *Student: spells "mat"*

Figure 1. Progression of Skills

Key Phonics/Word Study Skills

Letter-Sound Patterns	Identify the sounds for letters and letter patterns
High-Frequency Irregular Words	Recognize high-frequency words that are not spelled according to common phonics patterns (e.g. *was*, not "wuz") or are spelled with advanced phonics patterns not taught yet (e.g. *look* may be taught before the sound /oo/ is taught)
Syllable Types	Read monosyllabic and multi-syllabic words made up of syllable types: closed (dap-ple), vowel-consonant-e (VCe – com-pete), open (long vowel at end of syllable – pro-gram), vowel team (2-4 letter vowel teams (aw-ful), vowel-r (r-controlled – con-sort), consonant-le (C-le – lit-tle)[a]

[a]See readingrockets.org for more details

Figure 2. Key Phonics/Word Study Skills

TABLE 1. Examples of Resources for Teachers about Explicit and Systematic Reading Instruction

Resource	Author or Original Funding Agency	Key Features	Website
Division for Learning Disabilities (DLD) Alerts	Division of Learning Disabilities, Council for Exceptional Children	• Provides explanations and research base for implementing evidence-based interventions.	https://www.teachingld.org/alerts
Evidence for ESSA and Best Evidence Encyclopedia	Center for Research and Reform in Education at Johns Hopkins University School of Education	• Provides evidence of a variety of programs in reading and math.	https://www.evidenceforessa.org/ https://www.bestevidence.org/
International Dyslexia Association (IDA)	International Dyslexia Association	• Provides Knowledge and Practice Standards (KPS) for teachers. • Provides directions for accreditation programs training dyslexia instructors.	https://dyslexiaida.org/wp-content/uploads/2015/01/DITC-Handbook.pdf https://dyslexiaida.org/educator-preparation-program-accreditation/
Intensive Intervention Practice Guides	National Center on Intensive Intervention	• Provides resources for implementing intensive academic or behavioral supports.	http://nclii.org/intensive-intervention-practice-guides/
Reading Rockets	U.S. Department of Education	• Provides modules to support preparation for the Knowledge and Practice Examination of Effective Reading Instruction (K-PEERI).	http://www.readingrockets.org/teaching/reading101-course/modules/course-modules
What Works Clearinghouse: Intervention Reports and Practice Guides	Institute of Education Sciences through the Department of Education	• Provides reviews of effectiveness for individual reading programs, and guides for implementing evidence-based academic and behavioral interventions across K–12.	https://ies.ed.gov/ncee/wwc/ https://ies.ed.gov/ncee/wwc/PracticeGuides

Although there is no one sequence for teaching phonics skills and irregularly spelled high-frequency words, instruction should be systematic and include cumulative review (NRP, 2000). Teachers should be aware that not all programs support this instruction. The pace and sequence of letter-sound patterns and high-frequency words vary considerably across programs. Although Structured Literacy programs provide a systematic, synthetic phonics approach that focuses on mapping individual phonemes and letters, others use a less effective analytic phonics approach involving word families, or onset-rimes. As students learn more letter patterns, the program should shift in sequence to syllable types and reading longer words made up of those syllable types, as well as reading words with prefixes and suffixes. Some programs lack cumulative review, needed by some students, especially those at-risk or with disabilities. Cumulative review ensures students are developing automaticity in reading individual words. A few excellent resources for teachers about how to teach word recognition using a synthetic, or sound-by-sound, approach are written by Brady (2011), Carnine, Silbert, Kame'enui, Slocum, and Travers (2017) and O'Connor (2014).

As students begin to read words, they should read these words in meaningful, connected text as soon as possible. Words should be selected that are meaningful to students (i.e., part of their spoken language) and can be combined into sentences. Students can begin reading text very early in the process if text is selected carefully to include practice on word patterns and irregularly spelled high-frequency words (e.g., was) that have been taught. For reasons of brevity and focus, we do not describe reading connected text with fluency, however next steps would be to help children read passages fluently enough to read with comprehension. Similarly, spelling skills intertwine with reading skills.

Explicit and Systematic Programs for Teaching Phonemic Awareness and Phonics

In this section, we describe resources and several examples of explicit and systematic programs that provide intervention in phonemic awareness and phonics that are consistent with the Structured Literacy approach. Table 1 lists web-based resources for teachers that describe explicit and systematic programs and summarize evidence about programs to support students and for teacher training. Two further reviews of the literature evaluate the effects of specific Structured Literacy programs that included one or more multisensory component (Al Otaiba, Rouse & Baker, 2018; Ritchey & Goeke, 2006).

Table 2 provides examples of programs consistent with Structured Literacy and key information about each program, such as author(s), areas of literacy addressed by the program, appropriate tier within RTI/MTSS and grade level, as well as the appropriate group size. Three of the programs have been given

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a "strong" rating by Evidence for ESSA *(evidenceforessa.org)* and studies on their effectiveness are included in the Institute for Education Science What Works Clearinghouse (WWC; *ies.ed.gov/ncee/wwc/*). These are *Early Reading Intervention* (Simmons & Kame'enui, 2003; ERI), the *Lindamood Phoneme Sequencing* (Lindamood & Lindamood, 1998; LiPS) program, and the Wilson Reading System (Wilson, 1996). Studies of *Early Interventions in Reading* (Mathes & Torgesen, 2005) did not meet Evidence for ESSA standards but are included in WWC under the name *Enhanced Proactive Reading* with potentially positive findings for English Language Learners (see also Mathes, Denton, Fletcher, Anthony & Schatschneider, 2005). Table 2 also includes the following Structured Literacy programs identified as examples because they are widely used: the *Multisensory Teaching Approach* (Smith, 1987), *Orton-Gillingham* (Orton, 1966), and *Take Flight* (Avrit et al., 2006), although these have not yet have been evaluated in studies meeting Evidence for ESSA or WWC standards. A final example is *Friends on the Block* (FOTB; Allor, Cheatham, & Al Otaiba, 2018), which includes a new series of early reading books and is designed to be a Tier 3 intervention for students with intensive needs, particularly those with intellectual or learning disabilities. Though no studies on FOTB have been considered for inclusion in WWC or Evidence for ESSA, it has recently shown promise for students with the most intensive needs and includes motivational practice activities (Allor, Gifford et al., 2018). Results indicated a statistically significant positive intervention effect with students who experienced severe challenges learning to read. Feasibility was supported by high implementation by teachers and both teachers and parents were enthusiastic about the intervention and expressed a need for it (Allor, Gifford et al., 2018).

Data-Guided Adaptations to Increase Intensity and Motivate Practice

Even a strong research-based program may require adaptations for some students. The need for adaptations, and the response to adaptations should be guided by progress-monitoring data. Progress monitoring tools, like curriculum bases measures and assessments, allow teachers to track student performance. Hosp, Hosp, and Howell (2016) have written a practical book for teachers about progress monitoring: *The ABC's of CBM*.

Teachers should structure lessons to respond to student individual needs. It is important that teachers provide additional modeling and practice for skills students are struggling to master. For example, if teachers are using *Early Interventions in Reading* (Mathes & Torgesen, 2005) and observe students who are struggling to blend individual phonemes into a word during the *Oral Blending: Say the Word* activity, then the teacher might add a few more words to the activity for extra practice during a lesson or repeat this activity at another time of the day.

TABLE 2. Examples of Explicit and Systematic Programs for Teaching Phonemic Awareness and Phonics

Program	Author	Areas of Literacy Addressed	Tiers of RTI	Grades/ Ages	Group Size for Instruction
Early Interventions in Reading	Patricia Mathes & Joseph Torgesen	Phonological Awareness, Phonics, Alphabetic Principle, Reading Comprehension, Fluency, Written Expression	Tier 2/3	1st-3rd	Small group
Early Reading Intervention (ERI)	Deborah Simmons	Phonological Awareness, Phonics	Tier 2	K-1st	2-5 students
Friends on the Block	Jill Allor, Jennifer Cheatham, & Stephanie Al Otaiba	Phonemic Awareness, Alphabetic Principle, Fluency, Vocabulary, Reading Comprehension	Tier 3	K-5th	Individual, small group
Fundations Wilson Language Training	Barbara Wilson	Phonemic Awareness, Alphabetic Principle, Phonics and Word Recognition, Fluency, Vocabulary, Reading Comprehension	Tier 1	K-3rd	Individual, small group
Lindamood Phoneme Sequencing (LiPS)	Patricia Lindamood & Phyllis Lindamood	Phonics and Word Recognition, Comprehension	Tier 3	K-3rd	Individual, small group
Multisensory Teaching Approach (MTA)	Margaret Taylor Smith	Phonological Awareness, Phonics, Alphabetic Principle, Reading Comprehension, Fluency, Written Expression	Tier 3	Not Reported	Up to 8 students
Take Flight	Scottish Rite Hospital for Children	Phonemic Awareness, Alphabetic Principle, Fluency, Vocabulary, Comprehension	Tier 3	Ages 7 and older	Individual, small group
Wilson Reading System	Barbara Wilson	Phonemic Awareness, Alphabetic Principle, Phonics and Word Recognition, Fluency, Vocabulary, Reading Comprehension	Tier 2 or Tier 3	2nd and above	Individual, small group

A teacher might notice that when blending words a student often leaves off the first sound (e.g., responds *at* instead of *mat*). In this case, the teacher may decide to practice blending with print using words made up of letter-sounds the student knows.

Teachers can use instructional games such as in the FOTB program to incorporate motivating practice. Here are some examples from our FOTB program with specific skills that students may be struggling to master. For example, for a student who has not yet mastered the ability to identify the first sound in a word or to blend the first sound with the rest of the word, a teacher might select a game such as our "Blending Bingo." As shown in Figure 3, this game was designed to provide practice blending the first sound with the rest of the word. This game includes bingo boards with familiar pictures. The teacher has a set of word cards that match the pictures on the bingo boards. She provides systematic support, which is consistent with Structured Literacy approaches, pronouncing the first sound of the word (e.g., /fff/), holding that sound if continuous, and then saying the rest of the word (/ish/). Students blend and say the whole word out loud, then find the matching picture on their bingo board. A similar version of Blending Bingo can be played for students who need practice blending at the level of each phoneme. The slight change in the game comes when the teacher pronounces each phoneme in the word (e.g., /fff/ /i/ /sh/) so students blend all sounds of the word together to identify the appropriate picture (e.g., fish). The game can also be easily modified to practice saying the first sound or segmenting a word into individual phonemes.

To help students connect blending and segmenting to print, using the synthetic phonics approach, we designed the "I Got It" game. In this game, each student has a board that has a picture and a short sentence (e.g., *"You and I can play"*). One word from the sentence (e.g., *and*) is the focal word, written larger than the other words and separated with each letter contained in a box (see Figure 4). Students take turns drawing letter cards from a pile and identifying the letter sound. If the letter card chosen is also in the focal word on the card, then the player places a bingo marker on that letter. Once the entire word is covered, the student sounds out the entire word. Students can move the bingo markers as they "push and say" the individual sounds. Then they read the sentence. Finally, if more than one student is playing, each student should repeat the sounds in the word and say the word so everyone practices.

Taking a Proactive Approach

Teachers who are prepared to use explicit and systematic approaches for early intervention and remediation will help reduce the prevalence of students who are not able to read on grade level within RTI/MTSS implementation. These approaches are also effective to support reading instruction for all students, and for reading interventions for students with dyslexia and other specific reading disabilities. We hope the resources we have provided in this article will be useful both to practitioners and to teacher educators.

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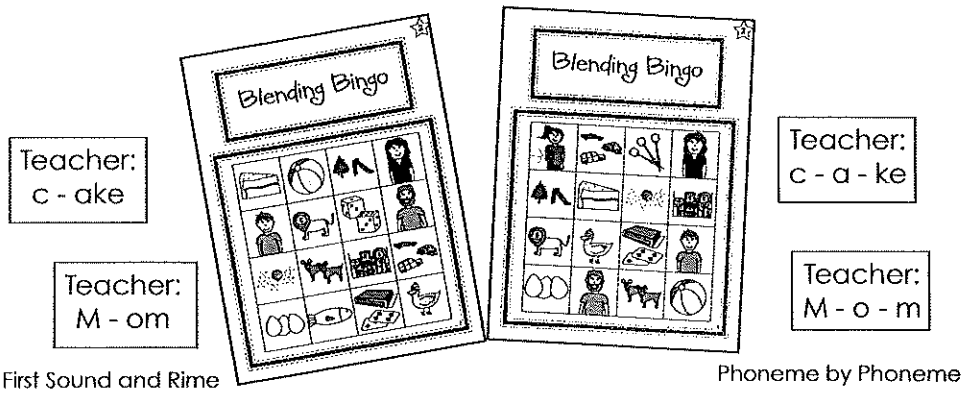

Figure 3. Blending Bingo Game

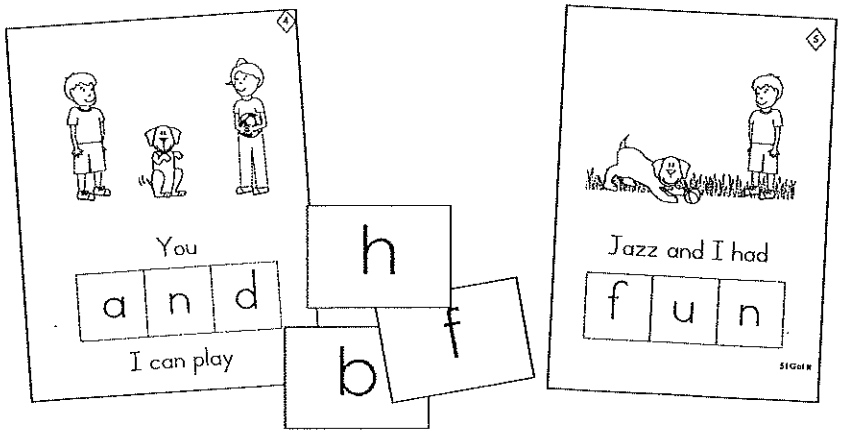

Figure 4. I Got It Game

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Teaching Spelling
An Opportunity to Unveil the Logic of Language

by Louisa Moats

Let's begin with a simple test of your spelling knowledge. Which one of these is a correct spelling: *acommodate, accomodate, accommodate*? Which one of these is a correct spelling: *committment, comitment, commitment*? Which one of these is the name for the last course of a meal: *desert, dessert*? Which one of these is the name for a memory device: *pneumonic, neumonic, mnemonic*?

In each case, the last choice is correct. Note that you can read all of these words. Spelling them may be more problematic. Why? And what does spelling have to do with reading and language? The answers to these questions are important, as they provide the rationale for embracing Structured Literacy (SL) practices in spelling instruction and moving spelling instruction to a more central place in the language arts lesson.

Spelling Depends on Knowledge of Language

Although spelling a word does require exact knowledge of its letters, learning those letters is not a rote memory skill, whereby images are imprinted on the brain. Researchers who study the nature of word memories (Adlof & Perfetti, 2014; Treiman, 2017) have identified four interrelated aspects of word knowledge: 1) phonological form (the word's pronunciation and phonemic makeup), 2) orthographic form or spelling, 3) semantics or word meaning, and 4) morpho-syntax, or the word's morphological structure and grammatical role.

All of these aspects of word memory are aspects of language processing. Good spellers have what are called high quality lexical representations or fully specified mental images of words that include all four dimensions of language knowledge. Similarly, poor spellers experience incomplete, inaccurate, or under-specified mental images because their processing of the word in any or all of these respects is less than optimal.

Reading words is easier than spelling them because words can be recognized on the basis of partial or degraded word memories, whereas spelling requires complete and accurate word memories. That is why students with dyslexia may eventually learn to read many words that they cannot spell.

Reading words is easier than spelling them because words can be recognized on the basis of partial or degraded word memories, whereas spelling requires complete and accurate word memories. That is why students with dyslexia may eventually learn to read many words that they cannot spell. Spelling supports reading: If students do learn to spell words, their recognition of those words for reading becomes more accurate and automatic (Ouellette, Martin-Chang, & Rossi, 2017).

How are word memories formed? Let's take a word from our spelling test, *commitment*. What has a good speller learned about this word, either explicitly or implicitly? A lot! See Table 1.

Building Orthographic Memory

The visual memory involved in spelling, then, is specific to learning orthography, and is deeply wired into our language learning systems. It is hinged to a child's awareness of phonemes—the parking spots for the letters and letter groups that represent phonemes in alphabetic writing systems. Gradually, spelling memory develops with a child's knowledge of word

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TABLE 1. Linguistic Features of the Word *Commitment*

Aspect of Language	Word Features	(Perhaps Unconscious) Knowledge
syntax	noun	The suffix *-ment* marks a noun.
morphology	three morphemes: *com-mit-ment*	*Com* is a Latin prefix meaning *with*; *mit* is a Latin root meaning *send*. These morphemes occur in many other English words and are spelled consistently.
semantic	A promise, obligation, responsibility. The act of restricting or confining a person.	Word has several meanings depending on context.

Abbreviation

SL: Structured Literacy

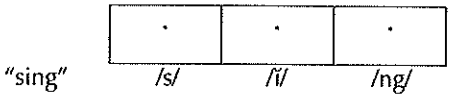
structure, words' meaningful parts, and a word's role in sentence formation. Children's developing knowledge of these language layers can be observed from the very beginning of literacy development (Bourassa & Treiman, 2014; Treiman, 2017).

Beginning to Spell: Phoneme Awareness, Letter Sounds, and Letter Names

Phoneme awareness is the critical underpinning for the early stages of learning to spell and helps remediate the problems of poor spellers at any age (Kilpatrick, 2015). A direct and explicit approach gradually teaches the identity of all 25 consonant and all 18 vowel phonemes, which is not the same as teaching the 26 letters of the alphabet (Moats, in press; Moats & Tolman, 2019).

Identifying a speech sound means hearing it in isolation, saying it with attention to mouth formation or articulation, learning a key word that begins with that phoneme, and contrasting it with others with which it may be confused. Activities typically associated with phoneme awareness, such as segmenting phonemes in words, should be preceded by this more basic instruction. Understanding, for example, that /k/ is made in the back of the mouth without a voice and that it is not the same as /g/ is prerequisite for knowing that *back* is not *bag*.

Phoneme segmentation and manipulation ability, or lack thereof, distinguishes good and poor spellers at all ages (Cassar, Treiman, Moats, Pollo, & Kessler, 2005). Children may strengthen their phonemic awareness by placing a chip into a box for each speech sound in a word, saying each sound as the chip is moved, or stretching out a finger for each sound that is articulated.



As they are learning the letter sounds, children also need to learn the letter names. Many letter names contain the phoneme that they represent. Others, such as *w*, *y*, and *h*, do not and are more difficult. The problem with teaching letter forms, letter sounds, and letter names together in a traditional multi-sensory association routine is that quite a few speech sounds are not represented by single letters of the alphabet (/th/, /sh/, /ng/, /ch/, /oi/, /au/, etc.). Those must be known and practiced, too; so teaching letter forms *and* phoneme-grapheme correspondences are two parallel strands in beginners' lessons.

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Learning Phoneme-Grapheme Correspondences

Explicit phoneme-grapheme mapping (Ehri, 2014; Grace, 2007; Moats & Tolman, 2019) requires the learner to match the letters/letter combinations in a word to the speech sounds they represent. The learner must pay attention to the internal details of the word in order to do this. A grapheme is any letter or letter combination that represents a single phoneme. One approach is to use a simple grid; each box of the grid represents a phoneme. Using a list of words that contain the correspondence or pattern being taught, students explicitly segment the word, grapheme by grapheme. The teacher says the word; then, the students repeat it, segment the sounds, and write the grapheme for each phoneme in sequence. For example, *freight* spells the long a (/ā/) with the four-letter grapheme, *eigh*.

f	r	eigh	t

Groove: In this example, the *gr* combination is a consonant blend (two phonemes). The final *-ve* is an orthographic convention: the job of *e* is to prevent the word from ending in *v* and it has no function in marking the vowel. That is why it is in parentheses and does not get its own box.

g	r	oo	v(e)

Phoneme-grapheme mapping is fundamental at any grade level, but is especially helpful with second- and third-grade students who have gaps in learning the basic code. It should be a teacher-led activity (not an independent activity), because its value is in consciously analyzing how print is representing speech. Saying words while looking at them and pulling them apart, with modeling and immediate feedback, should then be followed by practice including writing to dictation.

Although it may seem counter-intuitive, the foundational skills of phoneme awareness and phoneme-grapheme matching also facilitate learning the less common or odd words.

Words with Less Predictable or Odd Spellings

Because they are often very old words from Anglo-Saxon whose pronunciation—but not spelling—has changed, high frequency words may have more odd or irregular correspondences than lower frequency content words with a Latin or other romance-language base. Often called "sight words," these words (*of, said, your, do, does,* etc.) are not, in fact, learned by sight or by a rote visual memory process. The links between spoken language and print that spellers make for more predictable words must be made for these oddities as well.

Although it may seem counter-intuitive, the foundational skills of phoneme awareness and phoneme-grapheme matching also facilitate learning the less common or odd words (Kilpatrick, 2015; Treiman, 2017). That is, students who are

good spellers of predictable words are also better at spelling less predictable words. Irregular words are learned most easily by students who already know common phoneme-grapheme correspondences and who can explicitly analyze the speech to print mapping system. This is because irregular words have some regular correspondences, and also because a good speller makes mental comparisons between what a spelling ought to be and what it is (*of* sounds like it should be *uv*) to form a detailed mental image of the word. Awareness of phoneme-grapheme correspondences, regular and irregular, is the "glue that holds the word in memory" (Ehri, 2004, p. 155). The close correlation between the ability to spell regular and so-called irregular words led to a major publisher abandoning two separate word lists from the *Test of Written Spelling* (Larsen, Hammill, & Moats, 2013) and combining them into one.

Some suggested methods for teaching words with less common patterns or correspondences include: a) grouping words with some memorable similarity (*two, twice, twenty, twilight, twin; one, only, once; their, heir; where, here, there*); b) calling attention to the odd part of a word (*friend; any*); c) pronouncing the word the way it looks (*was* sounds like /w/ /ă/ /s/ not /w/ /ŭ/ /z/; d) using mnemonics (there is a rat in separate; the principal is my pal); and e) asking the learner to pay very close attention to the letter sequence by visualizing it and building it backwards and forwards with letter tiles before writing it.

Orthographic Patterns and Position Constraints

English orthography is a symbol system that constrains the way letters can be sequenced and used. For example, only some can be doubled—*k, h,* and *i,* for example, cannot. Words never end in the letters *j* or *v*. The letter *c* spells /k/ before *o, a,* and *u,* and introduces initial blends as in *c*lean and *crown*. The combination *-ck* occurs right after a stressed short vowel.

Good spellers may intuit these and other patterns but most students benefit from discovering them through guided word sorting. Instead of telling students, for example, how the letters *k* and *c* and *ck* are used to represent /k/, give them a list of words with those three graphemes. See if students can discover the pattern. Usually, this process must be guided closely by teacher questions, such as, "What letter comes immediately before (or after) the spelling for /k/?" Consciously processing and describing the patterns at work helps students establish higher quality mental images for the words.

Inflections should be introduced before other aspects of derivational morphology because they are so essential for writing basic sentences, but they must be practiced year after year.

Inflections and Suffix Change Rules

Inflections (-ed, -s, -es, -ing, -er, -est, which are also called grammatical suffixes) are morphemes that change the number, person, or tense of the word to which they are added, but they do not change its part of speech. The spelling errors in intermediate students' writings frequently involve inflections, especially -ed and plural -s and -es (Moats, Foorman, & Taylor, 2006). Inflections should be introduced before other aspects of derivational morphology because they are so essential for writing basic sentences, but they must be practiced year after year.

The suffix *-ed* is complex and should be taught one step at a time. Although its meaning and spelling are constant, the suffix has three pronunciations: /d/ as in *hummed*; /t/ as in *puffed*; and /id/ as in *wanted*. Students should begin by sorting words according to the sound of the past tense ending. Explain that only one of the endings (the -ed on *wanted*) is a spoken syllable, and the other two pronunciations are merely single phonemes. The -ed spelling looks as if it spells a whole syllable, but most of the time it does not; thus, the endings are easy to ignore or to misspell.

There are three suffix addition rules in English orthography that never fail to challenge all spellers, and especially poor spellers. We double certain final consonants when vowel suffixes are added to words (*running, hopped*); we drop silent e at the ends of words when we add suffixes beginning with vowels (*hoping, smiled*); and we change *y* to *i* when any suffix is added to a word except one that begins with the letter *i* (*studies, merrily*). These rules must be tackled because they are so commonly used. If possible, familiarize students with inflected forms that do not change the base word (*mended, punted, huffed, misses, killer, bringing*) before introducing the change rules one at a time. Start by decomposing familiar words with inflections by taking off the ending and finding the base word: *hoping = hope + ing; studious = study + ous; committed = commit + ed.* Then start combining base words and endings. For more details about these rules and how to teach them, consult Carreker (2018), Moats & Tolman (2019), or Moats (in press).

Multi-syllable Words and Schwa

Knowledge of the six basic written syllable types can support spelling, although learning these patterns should be a stepping-stone toward understanding of morphology. Familiarity with the open, closed, and consonant-le written syllable types enables spellers to know when and why double consonants occur in words that end with a consonant-le syllable. When an open syllable is combined with a consonant-le syllable—as in *noble, title,* and *maple*—there is no doubled consonant. In contrast, when a closed syllable is combined with a consonant-le syllable—as in *dabble, little,* and *topple*—a double consonant results. Note that this is purely a convention of writing, not a transcription of speech. We do not pronounce two separate consonants in the middle of words like *apple.*

Multi-syllable words bring up the unavoidable problem of schwa (/ə/), the unaccented vowel sound that has been emptied of its identity and can be described as a lazy vowel. Teach children that some vowel sounds have the stuffing taken out of them when they are unaccented. After students spell a word such as *prob-lem, a-dept,* or *com-mit,* they can say the word naturally and mark the syllable that has a schwa. Instruction about schwa helps students understand why some words do not sound the way they are spelled—and reminds teachers not to

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rely exclusively on "spell it by sounding it out," because that strategy is limited with multi-syllable words.

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Latin-based Prefixes, Suffixes, and Roots

Having already learned the common inflectional endings, students should be ready to move on to Anglo-Saxon and Latin prefixes (such as *pre-, sub-, re-, mis-,* and *un-)* and suffixes (such as *-en, -ly, -y, -ful, -less,* and *-ness*) (Henry, 2018). Prefixes and suffixes have stable spellings and meanings. Derivational suffixes such as *-ly, -al, -ment,* and *-ous,* also signify the part of speech of the word to which they are added. The stability of morpheme spellings assists with their recognition and recall, even though the meaning of a word may not simply be the sum of its parts (*apartment* and *matchless,* for example).

The Big Picture

Teaching spelling according to the principles of Structured Literacy means teaching the structure of language at all levels, including phonology, phoneme-grapheme correspondences, orthographic patterns and constraints, meaningful parts of words (morphemes) and their grammatical roles. Students remember best what they have thought about and understand, so the goal is to make sense of print and how it represents speech (King, 2000). This done, all of the other Structured Literacy components and practices together can rescue struggling students and help them become competent readers and writers.

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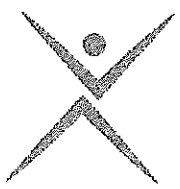

Structured Literacy Approaches to Teaching Written Expression

by Charles W. Haynes, Susan Lambrecht Smith, and Leslie Laud

Reading and writing are based on a foundation of oral language skills (Scarborough, 2001; Dockrell & Connelly, 2009) and with structured teaching that incorporates content vocabulary, oral and written expression can be developed interactively and synergistically. More than a decade ago, in a *Perspectives* issue dedicated to reading and writing, Haynes and Jennings (2006, 12-16) outlined hands-on word-, sentence- and paragraph-level techniques for supporting writing skills in struggling learners. The present article revisits selected methods from that report and adds recently developed strategies, such as a) linking of semantic feature analysis with sentence instruction; b) sentence fluency techniques; as well as c) "micro-discourse" methods for supporting cohesion and text elaboration (Laud & Haynes, 2018; Jennings & Haynes, 2018). While these strategies are critical teaching elements that address common weaknesses in learners with writing and related language difficulties, they are adaptable to all students learning to write.

Word-Level Strategies

Leverage Topic-Centered Vocabulary and Concepts. Students benefit from structured language activities that incorporate vocabulary drawn from academic topics, or themes (Myhill, Jones, & Lines, 2018). When language instruction is not topic-centered, students must randomly shift between different mental schema. Figure 1 shows a "decontextualized" sentence exercise—one with no focal topic or theme.

Directions: Add a "where phrase" to each sentence.

1. A middle-aged plumber fixed the leaking pipes _____.
2. A chrome robot assembled a steel door _____.
3. The hard-working nurse sat _____.

Figure 1. Decontextualized, or Non-topical Writing Exercise

In the decontextualized writing activity, the topic shifts from plumbing to robots and to healthcare provision. This topic shifting places heavy loads on retrieval and working memory and does not allow practice of learned vocabulary. Compare this with the following exercise, which is "contextualized"—it uses topic-centered vocabulary and concepts based on recent classroom instruction.

Directions: Complete these sentences about scenes we discussed from the film about a barn raising in an Ohio Amish community. Add a "where" phrase to each sentence:

1. The powerful draft horses carried fresh-sawn logs _____.
2. Older teens lifted wooden beams _____.
3. A bearded carpenter chiseled notches _____.

Figure 2. Contextualized Exercise (Topic: Amish Barn-raising)

The tasks in Figure 2 allow the learner to focus on a central topic as well as practice key vocabulary and concepts related to the theme of interest. Whenever possible, teachers should focus on topic- or theme-centered vocabulary, constructing sentence, paragraph, and essay-level exercises using the same vocabulary.

Employ Noun and Verb Boxes. For grade school students and older struggling writers, teachers can help students fill "Noun" and "Verb" boxes with topical vocabulary. For example, in a third-grade class focused on the topic of sailing, a teacher might guide students' retrieval of the topical vocabulary of interest, as illustrated in Figure 3.

Nouns	Verbs
captain	navigate
mast	stand
rudder	steer
sail	fill
waves	splash

Figure 3. Brainstormed Noun and Verb Boxes (Topic: Sailing)

Students refer to these brainstormed Noun and Verb Boxes for important words to include in their sentence- and paragraph-level writing.

Link Chaining with Phonetic Spelling. Speech processing deficits can impair some students' word retrieval and production. It is not unusual for a teacher to introduce a long word only to see a student try to say the word, stop, and then exclaim, "Forget it—that's a stupid word!" Responses like this can be reduced by helping students become comfortable with pronouncing longer words. Forward and backward chaining are classic, speech-language techniques that help learners pronounce multi-syllabic words. Figure 4 illustrates how the topical vocabulary word, "oceanographic," would be chained.

Forward:
- "O-"
- "Ocean-"
- "Oceano-"
- "Oceanograph-"
- "Oceanographic"

Backward:
- "-ic"
- "-graphic"
- "-ographic"
- "-ceanographic"
- "Oceanographic"

Figure 4. Forward and Backward Chaining

For both methods, the teacher introduces pronunciation of syllables gradually and students repeat in unison at each step. This practice supports articulatory mastery, and thus ownership, of key vocabulary. Note that, depending on the technique employed, different parts of the word receive more practice.

Use Chaining to Support Phonetic Spelling. Phonetic spelling is a word-level technique that provides students with a method for managing difficult-to-spell words that may pose an obstacle to composition, forcing learners to switch to less specific, higher frequency words they can already spell (e.g., substituting "big" for "enormous"). Alternatively, students may spell words so cryptically that they cannot understand them, such as spelling *ogrshc* for *oceanographic*. One way to eliminate this obstacle is to employ a three-step phonetic spelling strategy that exploits students' knowledge of syllable chaining:

Step One: Chain and then identify the number of syllables in the word ("oceanographic" = 5) and write a blank for each syllable: ___ ___ ___ ___ ___.
1 2 3 4 5

Step Two: Spell the phonemes in each syllable and spell each syllable in correct order; for example:
o shun a graff ic
1 2 3 4 5

Step Three: Synthesize the spelling into one word:
oshunagraffic

Later, the teacher can provide the correct spelling beside the student's phonetically spelled word: *oshunagraffic* → *oceanographic*. Students who are cryptic (dysphonetic) spellers and tend to produce spellings that do not allow the reader to guess the target word (or prevent a spellchecker from predicting the word) benefit greatly from this phonetic spelling strategy and report that it allows them to employ a wider range of vocabulary and compose more fluently. Of course, phonetic spelling does not replace formal, structured teaching of spelling rules; rather, it is an interim strategy to enhance the richness and fluency of a very poor speller's writing. In addition, phonetic spelling enhances phonemic awareness and strengthens sound-symbol association skills.

Teach Cueing Strategies to Support Retrieval. Students who have particular difficulty with word-retrieval may require *extrinsic* (teacher-provided) and *intrinsic* (self-provided) cues and/or cueing strategies. Types of extrinsic cues include, but are not limited to:

- Visual (picture)
- Gestural (mimed verb or action of target noun)
- Semantic (definition)
- Phonologic/Graphemic (first sound or letter of a word).

Of the extrinsic cues, phonologic/graphemic cueing is usually a last resort, because it provides part of the actual sound structure of the word and therefore tends to be easiest.

Intrinsic cueing strategies are methods students can employ by themselves to help them find words. Examples include, but are not limited to:

- Visualizing (trying to envision the object or action)
- Making semantic associations.

For concrete nouns, examples of semantic cueing are thinking about: the object's function, its typical location/circumstances, or typical time of day or season of year when the noun is used. For example, for a noun such as "sandcastle," cueing could include place (on the beach, at the water's edge) or time of year (during summer vacation, late in July). Students who are less strategic may need to memorize these intrinsic strategies and be coached how to employ them when they are having retrieval difficulties.

Teach Semantic Feature Mapping. Meanings of topical nouns or verbs can be explored and elaborated through semantic feature mapping. Semantic features are specific, component meanings associated with words. For example, Figure 5 is a semantic feature map for the key noun "rudder" from a class focused on the theme of sailing.

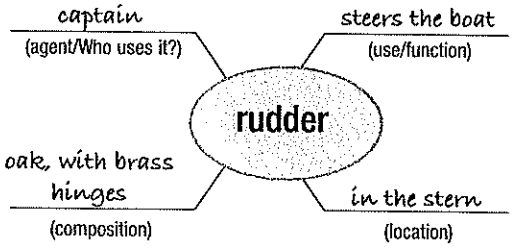

Figure 5. Semantic Feature Map

Note that while students discuss semantic features of a given noun, they build a network of meaningful relationships around that noun. These semantic relationships resurface at the sentence level.

Sentence-Level Strategies and Techniques

Tap Semantic Feature Knowledge to Support Sentence Formulation. Careful discussion of semantic features for key nouns sets up students for formulating meaningful sentences that reuse those semantic features. For example, consider the semantic feature mapping done for "rudder" in Figure 5 and how the features re-emerge at different levels of sentence development:

Level 1: The captain steered the boat.

Level 2: The captain steered the rudder in the stern of the boat.

Level 3: Standing in the stern of the boat, the captain steered the massive oak rudder.

In the Level 1 example, the features "captain" and "steered the boat" resurface almost exactly. In contrast, in the Level 3 example—a complex sentence—the features are used less directly and more flexibly.

Teach Using a Sentence Hierarchy. Sentence instruction needs to be incremental and sequential, moving from simple to more complex. Table 1 provides a sample sentence hierarchy.

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Because students with language impairment are often confused by formal grammatical terms (e.g., "noun phrase," "predicate," "temporal adverbial phrase") simplified terms ("noun," "verb," "where phrase") can help them identify sentence parts and develop rudimentary syntactic awareness. The earlier presented Noun and Verb Box exercise provides key topical vocabulary for struggling writers to reference. In addition, the kernel, subject + noun elements set up a range of simple sentence patterns. As students become more facile with recognizing and producing sentences, conventional terms can be introduced, as appropriate.

Introduce Flexibility. After learners show mastery of a given pattern, they can learn to experiment with moving elements around in sentences. For example, after the Noun + Verb + Where pattern becomes automatic, the student can be introduced to moving the Where phrase to the beginning of the sentence: "The pioneers set camp *next to a bend in the Mississippi River.*" → *"Next to a bend in the Mississippi River,* the pioneers set camp." This experimentation at the phrase level shifts semantic emphasis and provides the opportunity for learners to consider subtle differences in meaning that occur with changes in word order.

Reinforce Target Patterns Using Listening, Speaking, Reading, and Writing Modalities. Listening and reading tasks require students to monitor for the teacher's correct versus incorrect production(s), while speaking and writing tasks ask students to retrieve vocabulary as well as self-monitor their own production. Following are sample, topical exercises for students working on the N (noun) + V (verb) + Where (where prepositional phrase) sentence pattern. Teachers need to model the target behaviors before each exercise so that students understand what is expected. Exercises for each modality are outlined in Table 2.

Repeated practice with sentence patterns in multiple modalities helps students to internalize the forms, and the linking of recognition with production tasks prepares students to self-monitor their production at the multi-sentence level (Jennings & Haynes, 2018). The use of topic-centered words provides students with opportunities to recognize and employ key vocabulary meaningfully within sentences.

Consolidate Sentence Skills with Fluency Drills. Repeated, timed practice writing sentence structures helps students to consolidate and become more fluent with producing isolated sentences. In addition this repeated practice positively influences word order and sentence writing at the text level (Datchuk & Kubina, 2013, 2017). In our own practice, we have students create topical Noun and Verb Boxes, copy a developmentally appropriate target sentence structure from the board (for example, N + V + where) and then engage them in "sentence slams" in which they write as many sentences as possible within a three-minute time constraint. Each student's number of correct target sentences per slam can serve as an informal progress-monitoring tool.

Employ Topical Sentence Combining. Sentence combining is an additional technique that has been found to improve the quality of students' sentence and discourse writing (Saddler & Graham, 2005). This method involves practice at merging smaller sentences, or parts of sentences, into larger sentences. For example, asked to combine "The teenager is in the sailboat" with "The teenager steers," the student might combine the information in those sentences to say, "The teenager steers in the sailboat." Sentence combining practice helps students to

TABLE 1. Sentence Hierarchy

Structure	Example (Topic: Sailing)
Noun (N) + Verb (V)	Cormorants dove.
N + V + "where phrase" (where)	The captain leaned on the tiller.
N + is/are Verb + Adjective (Adj)	The deck was slippery.
Adj + N + V + where	Gray porpoises leaped out of the waves.
Adj + N + V + "when phrase" (when)	Several teenagers sailed during the evening.
Adj + N + V + where + when	The nervous boys aimed their vessel toward the lighthouse late in the afternoon.
Adj + Adj + N + V + where + when	Dozens of pesky gulls screeched overhead all morning.
Adj + N + V + where + *and* + (Art.) + N + V+ where	Playful seals swam around the boat and they scared the fish away.
Adj + N + V + where + *because* + (Art.) + N + V + where	The frightened lads steered toward the shore because lightening flashed in the distance.
Adj + N + V + where + *but* + (Art.) + N + V + where	Dark clouds gathered in the east, but the sailors slept.
"When clause," + Adj + N + V + where	When the wind blew, the empty sails filled between the yardarms.
Adj + N + V + where + "who/which/that clause"	The excited teens sailed toward the whales that surfaced nearby.
Adj + N + "who/which/that clause" + V	The frisky dolphins that followed the boat disappeared.

Adapted with permission from Jennings, T. & Haynes, C. (2018), p. 84.

avoid both redundant use of words and use of short, choppy sentences.

Provide Visual Scaffolding. Students' with deficits in language formulation often have trouble organizing their writing on the page. An effective remedial strategy is to employ templates to visually scaffold oral and written production. Figure 6 provides a simple example of how a template can visually scaffold an expanded kernel sentence with boxes:

Adj.	N	V	Where	When
Weary	sailors	arrived	at the dock	late in the evening.

Figure 6. Visual Scaffolding for Sample Sentence Pattern

A common teaching experience is to employ a template for teaching, observe that a student has mastered a given sentence pattern using the template, and then be disappointed when the student fails to use the pattern correctly in spontaneous writing. In such cases, it is important to remember that children with significant language impairment need scaffolds like boxes and category labels removed *gradually*. This same teaching principle—systematic application and removal of scaffolding—applies to any kind of cueing system that one uses to support language learning.

Micro-Discourse Strategies and Techniques

"Micro-discourse" refers to two- to four-sentence "chunks" of text. Important micro-discourse skills are a) producing semantic flow (cohesion) from sentence to sentence, and b) using varied detail sentences for elaboration.

Support Semantic Flow through the Cohesive Tie Strategy. Struggling writers often over-use key topical nouns, which results in uninteresting writing that lacks semantic flow. Here is an example lack of flow within a student's sequential narrative:

> After that, *the fire truck* arrived. *The fire truck* was equipped with a ladder and several hoses. *The fire truck* had come from another fire across town.

Problems with semantic redundancy can be addressed by first modeling, and then having students memorize as well as apply, the Cohesive Tie Strategy illustrated in Figure 7.

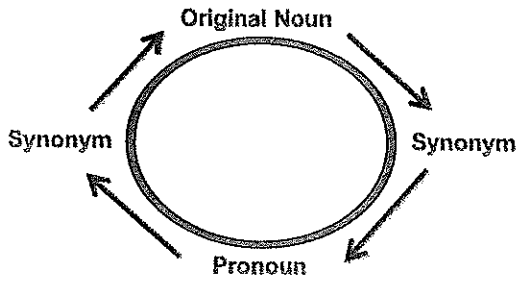

Figure 7. Cohesive Tie Strategy

Jennings, T. & Haynes, C. (2018), p. 144. Copied with permission from the authors and Landmark School Outreach Program.

Following is an example in which the student has applied the Cohesive Tie Strategy to the fire truck sequence:

> After that, *the fire truck* arrived. *The vehicle* was equipped with a ladder and several hoses. *It* had come from another fire across town.

In order for the strategy to be effective, students should first generate lists of synonyms and pronouns for the selected topical noun. For example, prior to generating the text above, the student would first list words or phrases such as *fire truck, it, truck,* or *emergency vehicle*. While the strategy is a powerful visual reminder, students need reminders to "listen" to the text

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TABLE 2. Multimodal Sentence Exercises

A. **Listening (Recognition/ Monitoring) Task**
   Procedure: Teacher displays the target sentence pattern: Noun + Verb + Where on the board. Students listen to teacher's production of theme-centered sentences and identify correct ("C") versus incorrect ("X"). If incorrect, the student then corrects the sentence so it follows the pattern.
   Teacher: "The sailor steered the boat."
   Student: Marks on paper *X – where*
   Student corrects the teacher's sentence to include the missing element, saying, "The sailor steered the boat *toward the shore.*"

B. **Reading (Recognition/ Monitoring) Task**
   Procedure: (same as for task A, but with written stimuli)

C. **Speaking (Production) Task**
   Procedure: Teacher displays target sentence pattern Noun + Verb + Where on the board and names a topical noun. The student produces a sentence that follows the pattern. For example,
   Teacher: "Barnacles"
   Student: "Barnacles fastened onto the stern of the boat."

D. **Writing (Production) Task**
   Procedure: (Same as for task C, but requiring written formulation)

they have written to make sure the cohesive ties "sound right." Learners can also use the Cohesive Tie Strategy image for analyzing texts they or peers have written: students recall the image, draw it on paper, underline key nouns in topic sentences in the text, and then proofread the text for semantic flow.

Promote Rich Elaboration through Use of the Detail Circle Strategy. Students who struggle with writing often fail to provide salient and varied details to support points they want to make. These students benefit from learning the Detail Circle, a mnemonic device that aids their recall of types of details (see Figure 8).

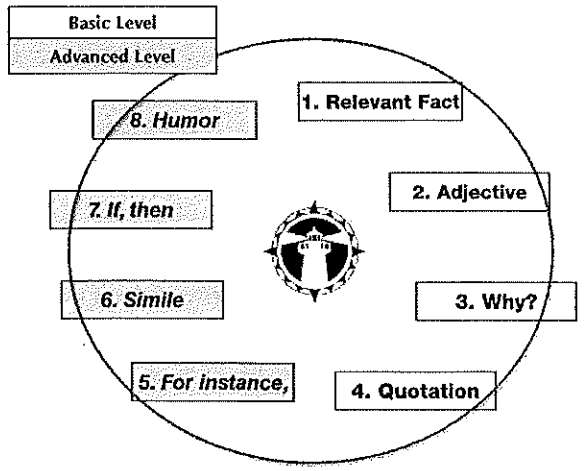

Figure 8. Detail Circle Strategy

Jennings, T. & Haynes, C. (2018), p. 148. Copied with permission from the authors and Landmark School Outreach Program.

The Detail Circle is organized into Basic Level details (1-4) and Advanced (5-8). When introducing the Circle, the teacher first writes only the Basic Level Details into the Circle, then provides a topic sentence with key nouns underlined, and after that models how to add one or two Relevant Fact detail sentences with semantic cohesive ties in each sentence underlined. Each detail sentence elaborates on one or more of the underlined key nouns in the preceding sentence; for example:

Teacher Topic Sentence: *The children raked the leaves in the yard.*

First Relevant Fact Detail: *The kids raked them into a large heap.*

Second Relevant Fact Detail: *The pile of leaves started to blow all over the yard.*

The resulting three-sentence micro-discourse "chunk" would appear as:

The children raked the leaves in the yard. The kids raked them into a large heap. The pile of leaves started to blow all over the yard.

Initially, learners memorize the Detail Circle with only the Basic Level details. They recall and draw the Circle in the margin of their paper and use this mnemonic to guide their recall of varied detail sentences. First, they formulate details in micro-discourse exercises of two to three topic-centered sentences, and then in personal sequence narratives. After they have mastered elaborating events (First-, Then-, Next-, After that-, and Finally) in narratives, they are ready to proceed to elaborating expository paragraphs and essays with Basic and Advanced Level details.

Paragraph-Level Principles, Strategies, and Techniques

A main purpose of teaching word-, sentence- and micro-discourse level skills is to support students' paragraph-level writing. Principles to teaching paragraph-level writing are:

1. Employ oral rehearsal prior to writing,
2. Prepare students with theme-centered sentence expansion and/or sentence combining,
3. Teach the sentence at the core of each paragraph type,
4. Scaffold paragraph components (introductory and concluding sentences, paragraph body).

Strategies for supporting these principles are described below.

Prepare Students for Writing with Oral Rehearsal and Topical Sentence Instruction. When students struggle with paragraph-level writing, it is important for teachers to self-check whether they have engaged students in adequate oral rehearsal and topic-centered instruction at the sentence level.

Teach Sentences that Support Paragraph Logic. Standard expository paragraph types such as Descriptive, Enumerative, Comparison-Contrast, and Sequential-Process have at their core a specific type of sentence and logic. For example:

- Descriptive expository paragraphs typically contain sentences with pre-nominal adjectives ("nervous sailors," "gray clouds," "whistling breeze") and adjective stacking ("three screeching gulls," "icy turquoise waves," "exuberant young captain");
- Enumerative paragraphs have sentences with words signaling numbers (First-, Secondly-, Thirdly-,);
- Comparison-Contrast paragraph sentences denote contrast (While-, Although-, ...but-, ...however-,); and
- Sequence-Process paragraph sentences include words or phrases that indicate temporal transition (e.g., "First," "Then," "Next," "After that," "Finally,").

Scaffold Paragraph Structure. Students with language learning difficulties typically do not intuit patterns of language through incidental exposure. With respect to discourse-level writing, they often need to internalize reliable strategies for formulating sentences to begin and end their paragraphs. Sentences that comprise the body of the paragraph may also need to be scaffolded, or supported. Figure 9 illustrates a

Description of: Coyote Name: _____ Date: _____

Topic Sentence: A coyote is a mammal with many important characteristics.
Topic noun + Is/are + category + general attributes phrase

Key Features: ears, muzzle, coat, legs, paws, tail

(Article)	Adj.	Adj.	Noun	Function Verb
The	alert	triangular	ears	listen for danger.
A	sensitive	pointed	muzzle	sniffs for food.
A	thick	grayish	coat	protects it from the cold.
	Strong	thin	legs	carry the coyote quickly toward its prey.
The	padded	black	paws	tread silently across the snow.
A	long	bushy	tail	acts as a signal flag.

Concluding Sentence: In conclusion, the coyote has many important features that help it to survive in a harsh environment.

Figure 9. Object Description Framework.

Jennings, T. & Haynes, C. (2018), p. 84. Copied with permission from the authors and Landmark School Outreach Program.

generic framework for scaffolding an Object Description paragraph. This paragraph-level exercise—a description of a coyote—was part of a larger "Pioneers' Westward Expansion" theme.

In the Figure 9, the introductory sentence is cued by the scaffold: Topic Noun + is/are + Category + General Attributes Phrase; this pattern can be used to support description for any complex target noun. For example:

Target Noun	Introductory Sentence
Ferrari	A Ferrari is a racing vehicle that has many important components.
Grandfather Clock	A grandfather clock is a time-keeping device that has many important components.
Tyrannosaurus Rex	The Tyrannosaurus Rex was a prehistoric reptile that had many important characteristics.

The body of the following Object Description Paragraph comprises sentences that describe parts of the complex object. When introducing the paragraph, show students a picture of the target object and have them brainstorm its important parts. These component nouns are then inserted under the Noun column in a series of sentence grids. The student completes each sentence with stacked adjectives describing the given noun as well as verbs explaining the noun's function. For beginning writers, the concluding sentence can be supported with a simple, generic pattern: "In conclusion, the (Target Noun) has important components that are well-suited for (Action of Category of Noun)." For animals, the final part of the concluding sentence can refer to adaptation to that animal's environment. This pattern can be used reliably to conclude the description of any concrete object. For example:

Target Noun	Concluding Sentence
Ferrari	In conclusion, the Ferrari has important components that are well-suited for racing.
Grandfather Clock	In conclusion, the grandfather clock has important components that are well suited for telling time.
Tyrannosaurus Rex	In conclusion, the T-Rex had many important characteristics that helped it adapt to the prehistoric environment.

The Object Description Paragraph framework described here differs from typical paragraph templates in the greater number and the variety of scaffolds it employs to support the writer.

Scaffolding of paragraph components will vary according to the type of paragraph. When teaching at the paragraph level, it is critical to consider the different types of cues needed for a given student or group of students and then plan for how to systematically remove the supports as mastery is demonstrated (Haynes & Jennings, 2006, pp. 15–16).

Independent Writing. Oral language skills provide a foundation for reading and writing. While writing is a complex activity that can be daunting for any student, there are many helpful strategies that teachers and students can use. A foundational cross-cutting principle is to use topical vocabulary as content for language learning exercises. Given structured, systematic teaching that exploits synergies among listening, speaking, reading, and writing, struggling writers can learn to write independently and effectively at the word, sentence, micro-discourse, and paragraph levels.

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Editor's note: *Charles W. Haynes is a co-author with Terrill M. Jennings of* "From Talking to Writing: Strategies for Scaffolding Narrative and Expository Expression," Second Edition, *cited in this article. In addition, he provides trainings for teachers in the methods described.*

The Role of Assessment in Structured Literacy

by Melissa Lee Farrall and Jane Ashby

Busy educators may think of assessment as a burden that takes time away from instruction. It is tempting to think that informal observations of student performance will provide an adequate basis for planning instruction. However, the learning needs of many children are not identified when educators rely on informal observation alone. In the hands of a skilled structured literacy practitioner, well-taken data supports unbiased, timely educational decision making and, thereby, improves student outcomes.

This article examines tools and techniques that permit educators to document skills in basic reading and spelling in order to understand how to implement a structured, sequential reading curriculum that responds to the needs of children with different patterns of reading difficulties. Specifically, we will discuss how to identify sources of reading comprehension problems.

Tests of reading comprehension (e.g., Benchmark Assessment System, Renaissance Star Reading, and Smarter Balanced Assessment Test) are diagnostically difficult to interpret; students perform poorly on comprehension tests for a variety of reasons. It is often tempting to assume that students with poor comprehension require practice identifying the main idea and supporting details. This may be true for some students; however, problems reading words accurately and language skills are much more likely to account for comprehension problems (Bishop & Adams, 1990; Gough & Tunmer, 1986; Rayner, Pollatsek, Ashby, & Clifton, 2012).

Teaching children to use basic phonics patterns, syllable types, syllable division, and spelling rules to read and write words accurately will often boost comprehension scores for students with code-based reading difficulties.

In order to boost reading comprehension, educators can focus on identifying which underlying processes impair a child's comprehension. Word reading problems include problems with accuracy (decoding) and problems with speed (fluency). The ability to read unfamiliar words confidently is crucial to understanding texts that contain new information. Receptive language (i.e., listening skills) refers to the ability to understand spoken language as others use it. Language skills allow readers to automatically string words into phrases, to provide intonation, and to knit sentences together into larger, meaningful contexts. For educators, spoken language comprehension indicates the potential for growth in reading comprehension.

Identifying student needs is the first step in effective teaching. After a child scores below expectation in silent reading comprehension, additional assessments reveal what type of instruction will be effective for that student, based on which underlying processes need strengthening. For most students with poor reading comprehension, additional assessments reveal incomplete and/or slow decoding skills. Teaching children to use basic phonics patterns, syllable types, syllable division, and spelling rules to read and write words accurately will often boost comprehension scores for students with code-based reading difficulties.

For a smaller number of children, the problem is not technically one of reading comprehension but more global issues with language comprehension. Teaching that focuses on developing receptive language skills (rather than decoding skills) and strategies for recall are more likely to increase reading comprehension for these children. Listening comprehension of passages is hard to measure directly, as listening itself occurs internally and does not typically involve observable productions. We have to be satisfied with measuring it through indirect channels such as speaking or pointing (Farrall, 2016). For elementary-age children, retellings (a common part of fluency testing) can be scrutinized for main ideas, supporting details, key phrases, and sequence. For older children with intact writing skills, teachers can score note-taking tasks for content and accuracy to assess whether the notes reflect an understanding of the lecture or discussion. Evaluators wanting something more robust can use the Oral Passage Understanding Scale (OPUS: Carrow-Woolfolk & Klein, 2017) in which students are asked to answer questions based on literary passages that are read to them. Responses can be analyzed to discern different profiles of listeners, i.e., those that reflect true deficits in understanding versus those that have their roots in memory. Not all poor listeners are alike, and understanding the precise nature of the challenge is important. While some students may benefit from work on vocabulary and syntax, others may benefit from strategies designed to facilitate recall. Students with poor listening skills should have their hearing checked before being referred for a speech-language evaluation.

Students who demonstrate adequate listening skills can be identified as having a comprehension difficulty that stems from difficulties processing print and, therefore, is specific to reading. Armed with the knowledge of the underlying causes of comprehension problems, we can now turn our attention to aspects of print.

Components of Reading Comprehension

Word Recognition

As words deliver the author's message, it is difficult to overestimate the impact of poor word recognition on reading

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comprehension. Assessing single word reading can indicate if reading inaccuracy and speed are limiting silent reading comprehension. Table 1 presents achievement tests and criterion-referenced word reading inventories that include a word recognition subtest. Poor performance on a word recognition test should prompt the educator to learn more about a student's phonemic awareness and decoding skills. Note that before Grade 3, a strong visual memory can yield an age-appropriate word recognition score in children who may, nonetheless, lack the phonics skills to read unfamiliar words independently. Such children struggle with content-area reading in the later grades unless they learn the decoding and morphological skills for reading multi-syllable words. Therefore, any child with comprehension problems in the early elementary grades should also complete a decoding task with pseudowords to examine word analysis skills.

Decoding

Assessment of pseudoword decoding indicates whether students can apply their knowledge of phonics to decode unfamiliar words and read independently. Pseudoword tests require students to decode made-up words that are designed to reflect rules for conventional spelling. If, for example, students can decode closed syllable patterns (e.g., mag, hep, sib, pon, rup), we then know that they have mastered this rule and can apply their knowledge to words that they have never seen before. Table 1 presents targeted inventories that assess single-syllable and multi-syllable decoding skills. Pseudoword decoding is useful both for assessing young children who have been taught to recognize words visually and for assessing older readers who read simple text fairly well but who have difficulty reading multi-syllabic words accurately.

Pseudoword decoding is useful both for assessing young children who have been taught to recognize words visually and for assessing older readers who read simple text fairly well but who have difficulty reading multi-syllabic words accurately.

Whether assessing word recognition or decoding skills, educators need to be alert to those children who can score within the average range for accuracy but still lack automaticity. Timed tests of word and pseudoword reading can reveal the degree to which foundation skills are automatic (see Table 1).

TABLE 1. Assessments to Inform Instruction

Tests	Word Recognition	Decoding	Spelling	Phonemic Awareness
Core Phonics Survey (Consortium on Reading Excellence, 2000)	√	√	√	
Diagnostic Assessments of Reading (DAR-2; Roswell, Chall, Curtis, & Kearns, 2006)	√	√	√	√
Informal Decoding Inventory (Walpole, McKenna, & Philippakos, 2011)	√			
Kaufman Test of Educational Achievement, Third Edition (KTEA-3; Kaufman & Kaufman, 2014)	√ (timed & untimed)	√ (timed & untimed)	√	√
Phonological Awareness and Reading Profile (PARP; Salter & Robertson, 2001)		√	√	√
Phonological Awareness Test, Second Edition NU (PAT2 NU; Robertson & Salter, 2018)		√		√
Spellography (Moats & Rosow, 2002)			√	
Test of Word Reading Efficiency, Second Edition (TOWRE2; Torgesen, Wagner, & Rashotte, 2012)	√ (timed)	√ (timed)		
Wechsler Individual Achievement Test, Third Edition (WIAT-III; Wechsler, 2009, Pearson)	√	√	√	√
Woodcock-Johnson IV Tests of Achievement (WJ IV ACH; Schrank, McGrew, & Mather, 2014)	√	√	√	√
Words Their Way (Bear, Invernizzi, Templeton, & Johnston, 2003).			√	

This table includes a small sample of tests that may be appropriate for individual students. As always, it is important to verify that any particular test is valid for the student in question.

Phonemic Awareness

Phonemic awareness is the ability to perceive individual sounds in words.; the word, cat, for example, consists of three sounds: /k/ /ă/ /t/. Assessing phonemic awareness indicates whether a phonological deficit is the source of word identification problems and how severe that deficit is. Table 1 presents phonological awareness tests suitable for children age 5 and older. A poor phonemic awareness score indicates that the child is likely to need intensive, multi-sensory phonics instruction. Poor decoding skills can also appear with typical phonemic awareness scores; this pattern occurs in children who simply have not been taught how letters represent sounds.

Spelling

Spelling's contributions to reading and written expression are often unrecognized at worse and unappreciated at best. Spelling a word correctly indicates that a consolidated memory representation exists, and this memory is what allows for fast and accurate word recognition. Spelling and decoding rely on similar underlying processes (Ehri, 2000).

Most spelling batteries progress from writing letters to spelling multi-syllable words, many of which derive from Latin and Greek. Educators should not content themselves with a right or wrong approach to spelling, given that the number of items spelled correctly only sheds minimal light on how to proceed with instruction. When assessing spelling, three questions can lead to a greater understanding of a child's instructional needs (Moats, 1995):

1. Are sounds represented accurately? If not, then these errors have phonological roots; they reflect poor phonological awareness and indicate a need to practice with the sound sequences in spoken words.
2. Are words spelled according to the rules? If not, then these errors are orthographic in nature; they reflect poor visual memory for conventional spelling patterns and indicate a need to learn and practice basic spelling rules, such as when /k/ is spelled with a k vs. ck.
3. Are the meaningful parts of words (prefixes, roots, and suffixes) spelled correctly? If not, then these morphological errors indicate a need to learn about word structure and word origins.

Case Studies

Word Reading

Error analysis is the heart and soul of good reading testing. A careful recording of responses during word reading can help specify the sources of reading difficulties that interfere with comprehension. Is it difficulty reading new words? Reading familiar words accurately? Reading familiar words quickly? A background in basic phonology (i.e., the vowel circle and consonant groupings) is essential for identifying patterns. Table 2 provides data on three students in Grade 2 who have difficulty understanding what they read but can understand text that is read to them. Although the sample of skills assessed in these examples is rather small, they provide a general idea of what can be learned.

Brenda receives reading support in the form of "read alouds" in a small group. Brenda's performance indicates that she has not yet mastered short vowels, and she does not yet discriminate between voiced and unvoiced sounds. She identified only two words automatically; she did not demonstrate skill with the VCe or VV patterns. Brenda reads words inaccurately, and misreading words is the predominant source of her low reading comprehension. Brenda requires significant work at the phoneme level. Understanding key differences in how speech sounds are produced in the mouth will support phonemic awareness practice (e.g., segmenting and deleting the sounds in spoken words). Phonemic awareness skills, in turn, will support the acquisition and automaticity of decoding.

Donald receives structured, sequential reading instruction. The skills demonstrated are consistent with what he has been taught. The accuracy of his nonword reading indicates that instruction has been effective in providing tools that allow him to decode unfamiliar letter strings confidently. As he continues to practice accurate reading, he builds deeper memory traces

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TABLE 2. Examples of Decoding Errors in Children with Normal Listening Comprehension

Word List	Pattern	Brenda	Donald	Lizzy
ed	VC	ĭd	√	...√
mog	CVC	mŭg	√	...√
vut	CVC	vŭt	√	...√
pag	CVC	pĕg	√	√
blum	CCVC	b-l-ŭlm	√	...dlŭm
pind	CVCC	√	√	...mĭndŭh consonant wrong?
lape	CVCe	lăbē	√	...lăpē...√
feek	CVVC	√	√	...fĕck...feck
hute	CVCe	...hŭdē	√	...hŭt...√
roit	CVVC	...r-ŏ-ĭ-n	rŏn	...rō...rō...√
soam	CVVC	s-ŏ-ă-t	sŏt	√ wrong consonant?

of more words. When he can read most words in a text efficiently, then he will understand its meaning.

Lizzy's performance is quite concerning, particularly given reports that she has been making progress in a Structured Literacy program for over a year. The foundation skills needed to unlock multi-syllable words do not appear to be in place. Lizzy pronounces sounds incorrectly. Her responses are far from automatic; she has not yet mastered b and d. She has numerous self-corrections. Therefore, Lizzy should practice previously taught concepts using a Structured Literacy approach with multi-sensory reinforcement to allow for faster retrieval of letter sounds. For example, when learning a letter sound, she would look at the letter (see it) and say its sound (speak it) as she traces the letter (feel it). Establishing automatic letter-sounds will support her accurate reading of unfamiliar words. As Lizzy practices her decoding, she will be able to apply these skills "on the fly" during text reading. As she stores accurate representations of new words, she will be able to recognize those words more quickly in the future. Becoming a more accurate decoder will allow Lizzy to focus more of her attention on the meaning of the text.

TABLE 3. Spelling Error Analysis for Sasha

Correct Spelling	Sasha's Spelling	Error Analysis
this	tis	P: Sound Discrimination; O: Digraph
words	wrds	O: R-controlled Vowels
gluing	cluing	P: Consonant Voicing
them	thim	P: Vowel Confusion
up	op	P: Short Vowel Confusion
tree	drey	P: Consonant Voicing; O: Vowel team
helps	hilps	P: Vowel Discrimination
keep	cep	O: Rules for /k/, Vowel Team

Note: P = Phonological O = Orthographic M = Morphological

Spelling

Table 3 provides spelling data for Sasha, who is a second grader. The majority of her spelling errors speak to fundamental weaknesses in phonemic awareness and sound discrimination. Sasha confuses short vowel sounds and she does not yet discriminate between voiced and unvoiced consonants. If these misspellings are due to confusion about which letter represents each sound, then this should be addressed with multi-sensory Structured Literacy instruction. It is also likely that she does not discriminate the vowel sounds that she hears, and needs to develop her phonological awareness. If Sasha has not been flagged as a student with reading difficulty, she may be next year. Those concerned might want to also assess her decoding skills.

TABLE 4. Spelling Error Analysis for Maria

Correct Spelling	Maria's Spelling	Error Analysis
compartments	kunpartments	P: Nasal sounds; M: Morphemes
padded	padid	O: Doubling Rule; M: Morphemes
mixtures	mixders	P: Voicing
instructor	instrukder	P: Voicing; O: Rules for /k/; M: Morphemes
enabled	enabod	P: Sound Discrimination; M: Morphemes
impeachable	impepchubo	P: Schwa; M: Morphemes
coaches	cochis	O: Vowel Team; M: Morpheme

Note: P = Phonological O = Orthographic M = Morphological

Table 4 provides spelling data for Maria, who is an eighth-grade student. Maria's spelling errors have roots in poor phonemic awareness, which compromises her ability to spell words accurately. In the samples in Table 4, we can see that she does not discriminate sounds that are close in their articulation (/m/ and /n/); she has difficulty with voiced and unvoiced sounds (/d/ and /t/), as well as with /l/ (which is sometimes considered to be a "semi-vowel"). Given her weakness in phonemic awareness, it is not surprising that she has not mastered the basics of sound-symbol correspondence nor has she grasped the representation of the meaningful parts of words, such as -ed. Instruction should focus on developing phonemic awareness for sounds in the middle of words and final blends. She may benefit from instruction in the simple vowel teams, such as oa. However, Maria seems most in need of reading instruction that focuses on base word identification and spelling rules for adding suffixes, such as doubling and silent e.

Given that handwriting, spelling, mechanics, vocabulary, syntax, and organization all vie for working memory resources, it is not surprising that skills not yet sufficiently developed are revealed in passage writing.

Although we frequently assess spelling in a list format, spelling in context is the true test of mastery. Many educators and parents question why it is that students may be able to pass a spelling test but produce stories and essays that are riddled with misspellings. The answer is that when we write, we multitask, and the demands on working memory increase dramatically. Given that handwriting, spelling, mechanics, vocabulary,

syntax, and organization all vie for working memory resources, it is not surprising that skills not yet sufficiently developed are revealed in passage writing. Note that spell-check software becomes accessible when children can spell isolated words in the fifth-grade range. When spelling skills are below that, most programs generate many more options than most children can choose among.

The Value of Assessments

Assessment in a Structured Literacy program can serve as an important aspect of diagnostic, prescriptive teaching. Given the different profiles of young readers, a low reading comprehension score should be regarded primarily as a flag indicating the need for further assessment to determine the source(s) of the comprehension difficulty. Periodic assessment of word recognition, decoding, spelling, and receptive language ability will ensure that we are addressing individual needs of children in order to prepare them to be readers, writers, and thinkers.

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Integrating Structured Literacy within Teacher Preparation

by Kristin L. Sayeski

In recent decades, many researchers have come to the same conclusion regarding the preparation of teachers to teach reading—strong preparation is isolated, at best, and insufficient preparation is the norm (Salinger et al., 2010; Spear-Swerling, Brucker, & Alfano, 2005). Weak preparation can stem from cultural and theoretical perspectives as well as insufficient knowledge on behalf of instructors. Unlike many professional programs (e.g., engineering, law, medicine) in which training to a standard is valued, reviews of teacher preparation programs have identified a shift away from the teaching of specific knowledge and skills to a focus on candidates' personal development—candidates' beliefs, experiences, and viewpoints (Seidenberg, 2018). This shift in focus has a ripple effect on the knowledge of both teachers and teacher educators. Specifically, researchers have found that individuals charged with teaching reading often lack deep understanding of key concepts related to reading development (Binks-Cantrell, Washburn, Joshi, & Hougen, 2012; Podhajski, Mather, Nathan, & Sammons, 2009).

Unfortunately, lack of training that fosters deep knowledge of subject area and pedagogy runs counter to research demonstrating that greater expertise facilitates insight and efficiency (Castles, Rastle, & Nation, 2018). In other words, teachers who know more have a greater capacity for determining what works best for students. In contrast to creating automatons, teaching to a standard results in the development of teachers who can exercise greater autonomy and creativity within their instruction.

In contrast to creating automatons, teaching to a standard results in the development of teachers who can exercise greater autonomy and creativity within their instruction.

Fortunately for teacher educators, what the "standard" should be for the teaching of reading is more clearly articulated and operationally defined than ever before. A growing body of research (e.g., from linguistics, neurobiology, and cognitive science as well as intervention research) has established what many refer to as *the science of reading*. The International Dyslexia Association (IDA) has codified this science within their standards (2018) under the term Structured Literacy (SL) to refer to both the content and pedagogy of practices associated with improved reading outcomes for students with reading disabilities (Cowen, 2016; IDA, 2017). Although the focus of organizations such as IDA is on the unique needs of students who require more intensive reading support (i.e., students with dyslexia or reading disabilities), the underlying principles of reading development and reading instruction derived from the science of reading are applicable to the reading instruction of all students. The fact that approximately one-third of fourth graders score "below basic" on assessments of reading proficiency highlights the need to improve the quality of standard reading instruction (NAEP, 2018).

Recognizing Opportunity Costs: The First Step for Integrating Structured Literacy within Teacher Preparation

The way in which reading instruction is presented to teacher candidates has a profound influence on their future work as teachers of reading (Clark, Jones, Reutzel, & Andreasen, 2013). Within teacher preparation, reading programs may focus on what is termed multiple literacies—a person's ability to interpret various visual (printed or digital), auditory, and gestural sources of information and communication (International Bureau of Education, n.d.). As such, reading instruction (i.e., the more narrow act of decoding and comprehending English orthography) is a subset of other literacies to be addressed. Further, instruction in how to teach reading may be addressed through a balanced-literacy approach. Balanced literacy is frequently conceptualized as a compromise between whole-language principles (e.g., immersion in interesting text, meaning-focused approach) and phonics-based approaches (e.g., explicit instruction in the alphabetic principle; Bingham & Hall-Kenyon, 2013). Many reading faculty mistakenly believe that they side-step the reading wars—that is, focusing reading instruction on *either* a phonics-based approach or a *whole-language* approach—by embracing balanced-literacy. However, because many teachers are not well-versed in how to teach phonics in a systematic manner, phonics instruction receives less attention and is implemented in less than optimal ways within many balanced-literacy classrooms. Thus, teacher preparation programs may dilute the teaching of reading by equating its importance with fluency in "multiple literacies" and buried the lede, so to speak, by prioritizing higher-level literacy skills over foundational skills required for students to access text (i.e., phonics).

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Abbreviations

IDA: International Dyslexia Association
NRP: National Reading Panel
RF: Reading First
SL: Structured Literacy

Therefore, the first step to implementing an SL approach within teacher preparation is to acknowledge that each decision in terms of course selection and weekly course content comes with a cost. An *opportunity cost* is the loss of potential gain due to the fact that one option is selected over another. Given the limited number of courses offered within preparation programs, choosing to offer one course (e.g., multiple literacies) means that another course (e.g., evidence-based reading interventions) may not be offered. Opportunity costs occur within classes as well. Which topics are addressed and revisited throughout the program as well as how candidates engage with the materials during coursework will also have a direct effect on the knowledge and skills candidates take with them into their future classrooms. Hence, recognizing opportunity costs naturally leads to the next step for integrating SL within teacher preparation: the delineation of a scope and sequence for the teaching of reading.

A Scope and Sequence for Structured Literacy: More Than "The Big Five"

The National Reading Panel's (NRP) report in 2000 had a significant influence on reading instruction within P–12 settings. Most notably was the influence of the NRP report on the development of the Reading First (RF) initiative (Petrilli, 2007). Specifically, the NRP identified positive gains in reading achievement associated with instruction that reflected the *big five*: phonemic awareness, phonics, fluency, vocabulary, and comprehension. RF coaches took this knowledge of key findings into the under-performing schools to which they were assigned. Gamse, Jacob, Horst, Boulay, and Unlu (2008) found that RF did produce a positive, statistically significant impact on instructional time spent on the five components in Grades 1 and 2. However, simply allocating time to the *big five* is not sufficient for meeting the needs of students with reading disabilities (Brady, Braze, & Fowler, 2011; IDA, 2017; Torgesen, 2005).

Isolated vs. Integrated, Overlapping Instruction

Frequently represented as pillars, the *big five* stand in isolation supporting the roof of reading development. Within teacher preparation, instruction in the *big five* can inadvertently also reflect isolated instruction. For example, teacher educators may spend a week or two of instruction on each area (a week on phonemic awareness followed by phonics followed by fluency, etc.) but fail to revisit the concepts or demonstrate integration of the components. Through this approach, candidates may inadvertently be taught to conceptualize reading instruction as the selection of activities from a menu of options: a couple of phonemic awareness activities to start a lesson followed by some word work (i.e., working with words in isolation) and fluency work (i.e., working with connected text) ending with comprehension and vocabulary activities. Concepts addressed in one activity may or may not be connected to another and lessons across days may not follow a specific scope and sequence.

As such, this à la carte approach to reading instruction lacks attention to critical elements associated with an SL approach to reading. These elements include systematic and sequential instruction in clearly identified elements (e.g., phonemes, letter-sound relations, syllable patterns, morphemes, vocabulary, sentence structure, text structure); cumulative practice; and the use of specific instructional techniques such as corrective feedback, use of examples and non-examples, and high rates of opportunities to respond (Spear-Swerling, 2019). In short, in order to integrate SL within teacher preparation, coursework should reflect the principles of SL.

A Structured Literacy Scope and Sequence

A scope and sequence creates a blueprint that faculty who teach within a program can follow. By mapping out which topics will be addressed where within a program, faculty can intentionally plan for integration, overlap, and practice over time in varying contexts (e.g., different courses,

Checklist for Creating an SL Scope and Sequence for Teacher Preparation

- ☐ Prioritize what candidates need to know and be able to do by the time they complete the program.
  - IDA's *Knowledge and Practice Standards for Teachers of Reading* (2018) is an excellent source of content.
  - Keep in mind opportunity costs, and identify the concepts and skills that are most salient to effective reading instruction.
  - Rank or group concepts in terms of priority. For example, topics could be sorted in categories of high (e.g., candidates should be fluent), medium (candidates should have a strong understanding), or low (e.g., candidates should have basic understanding).
- ☐ Identify related components and group them together.
- ☐ Conduct a task analysis on each component in order to identify prerequisite skills and to aid in the identification and planning of instructional activities.
- ☐ Identify or generate instructional activities that can be used to teach components.
- ☐ Map out a sequence of instruction across a program and within courses in which prerequisite skills are taught first and high priority skills and concepts are repeated over time and in varying contexts.

Figure 1. Checklist for creating a SL scope and sequence.

TABLE 1. SL Prompts and Responses

Prompt	Possible Response
A student is reading connected text and makes an error. Identify three error correction procedures that a teacher may use and describe the conditions under which one procedure may be better to use than another.	**1. Immediately provide the correct response.** *Student: "The [pause] house was in the barn."* *Teacher: "Horse. Repeat that sentence."* Immediate, corrective feedback can be used when a student encounters a letter pattern or word that has not been previously taught. This allows the student to move quickly from that word to focus on the application of decoding skills to other words and/or comprehension. Immediate, corrective responses are also helpful for speeding up the pace of instruction or when the student is getting frustrated. **2. Recommend a strategy such as tapping or marking word patterns (e.g., silent e).** *Student: "Big funny clouds..."* *Teacher: "Tap out this word." [Point to the word.]* *Student: "/f/-/l/-/ŭ/-/f/-/ē/, fluffy. Oh. Big, fluffy clouds."* This correction procedures helps students focus on word-level features (i.e., individual letters or letter patterns) needed to decode the word. It should be used when students have the skills needed to decode the word but failed to apply them when reading. **3. Provide a cue.** *Student: "He went into the s-ss-tore?"* *Teacher: "Look at that last word. Do you see a digraph?"* *Student: "Yes, 'sh'."* *Teacher: "Now read the sentence again."* *Student: "He went into the shop."* This correction procedure helps students learn how they can apply their knowledge of word parts for the purpose of decoding. This procedure works well as students are gaining fluency with the concepts. It provides less scaffolding than tapping or coding/marking words.
What is the relation between decoding and encoding? Describe two instructional practices a teacher can use to strengthen students' understanding of this connection.	Decoding involves reading written language. Encoding is the writing/spelling of spoken language. Reading and spelling have a reciprocal relationship—becoming a better reader helps with spelling and working on spelling improves reading. Teachers can help students make the reading-spelling connection through the following activities: **1. Visual and Auditory Drills with Letters** For the visual drill, the teacher will show the student a letter or letter pattern (e.g., the digraph 'sh') and the student will say the sounds associated with the letter or letter patterns. The student is "reading" the letter. For the auditory drill, the teacher produces a sound (e.g., /sssss/) and the student spells the letters and letter patterns that have been taught that are associated with this sound (e.g., s, ss, c). **2. Sentence Reading and Dictation** After reading engage students in dictation work. Dictate phrases and sentences from what was read to have student apply learned spelling rules when writing.

structured tutoring, field placements). To create a meaningful scope and sequence for the teaching of reading that aligns with a SL approach, faculty can use the checklist provided in Figure 1.

How to Teach Structured Literacy

Once the scope and sequence of instruction are developed, the next step for integrating SL within teacher preparation is to develop instructional activities that promote candidate learning. Through the process of developing a scope and sequence, program faculty will realize that not all concepts can or need to be taught to mastery. It may be sufficient for some topics to be addressed within only one course. In contrast, fluency—accuracy and automaticity—with other topics skills will require repeated opportunities for engagement. Identifying what candidates should know and be able to do, can help teacher educators prioritize topics and instructional activities. For example, in Table 1, a series of prompts are provided (column 1). A candidate fluent in an SL approach should be able to quickly and accurately generate a response to these prompts (see column 2).

With a specific set of desired outcomes such as these in mind, faculty can begin to plan and prioritize instructional activities—major assignments, in-class activities, quizzes and tests, practicum assignments, and capstone requirements.

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Robust Learning Requires Retrieval

In their summary of research on how people learn, Brown, Roediger, and McDaniel (2014) stated, "To learn, retrieve." Accordingly, instructional activities, at a minimum, must involve retrieval. Retrieval is the act of pulling information from memory (e.g., answering a question, remembering someone's name, solving a problem, stating a memorized verse). Activities that do not *require* retrieval include providing a lecture, showing a video, or hosting a guest lecture. Of course, a student, particularly one with some background knowledge, may engage in retrieval under these conditions, but creating explicit, planned opportunities for retrieval will ensure that all candidates engage in retrieval of critical concepts.

Retrieval can also be thought of in terms of a continuum from weak to strong. Weaker retrieval may include "turn and talk" with a partner about a concept whereas stronger retrieval would be engaging in a brief role-playing activity in which candidates take turns playing the role of reading teacher to practice a particular skill (e.g., teaching letter sounds). Stronger retrieval activities will facilitate greater retention.

However, one well-designed lesson is insufficient for long-term retention. For example, several years ago I conducted a study to examine the difference between 60 minutes of explicit, structured practice (i.e., using constant time delay procedures) and 15-minute practice sessions distributed over four weeks on teacher candidates' ability to correctly produce phonemes. An assessment conducted immediately after 60 minutes of practice for the first group and the final 15-minute practice session of the second group revealed that candidates in the distributed practice condition learned 25% more material than candidates who only had one, intensive session of instruction (Sayeski, Earle, Eslinger, & Whitenton, 2017). Findings from this study highlight the need for distributing high-quality practice opportunities over the course of a semester and program.

Creating High-Quality Practice Opportunities

Three tenets of practice are: a) practice is required for skill proficiency and long-term retention; b) repeated practice, over time, and in varying conditions is required for fluent and flexible application; and c) practice should reflect both isolated and integrated opportunities (e.g., drill [isolated practice] vs. scrimmage [game-like conditions]; Lemov, Woolway, & Yezzi, 2012). In addition, research on the teaching of evidence-based strategies has demonstrated the importance of modeling and feedback in conjunction with practice (Schles & Robertson, 2019).

To plan for practice, program faculty can begin by identifying priority knowledge and skills. Next, faculty can determine where, when, and how to practice. Is this a skill that should be practiced in several courses or only one? Should this skill be practiced early or later in a program? Is this a knowledge-based skill such as mastering reading-related terminology that can be practiced via flashcards or Quizlet (an online flashcard app)? Or is it an action-based skill such as conducting an assessment, teaching a specific concept, or providing feedback that would need to be practiced by creating a video model, with a partner, or in a small group? In Table 2 a sample of SL concepts and a variety of techniques for practicing are presented.

The final step for developing strong practice sessions is to conduct a task analysis. In Figure 2, the larger concept of the alphabetic principle is first reduced to a set of component skills and then one component skill, phoneme production, is further delineated into a set of discrete steps (practice activities) that faculty can use to build candidates' skill in that area. A task analysis facilitates the identification of prerequisite skills and makes it easier for faculty to plan for targeted practice activities.

Investing in Success

For teacher candidates to internalize what it means to deliver SL, instruction within higher education must mirror critical elements of an SL approach. First, by acknowledging opportunity costs, faculty can free themselves of the illusion that they can "cover it all" and get to the business of prioritizing content. Second, developing a scope and sequence for instruction based upon published standards that reflect the science of reading can help faculty prioritize content. Finally, building instructional experiences based upon principles of learning such as retrieval and practice will help ensure mastery.

TABLE 2. What, Where, and How to Practice

What to Practice	Where and How to Practice

• Defining and describing reading difficulty and disability
• Reading-related terminology
• Automatic, correct phoneme production
• Delivery and interpretation of assessments (standardized, diagnostic, and formative)
• Teaching techniques (e.g., phonemic awareness, auditory/visual drills, sound tapping, marking words, dictation, fluency, handwriting, comprehension strategies)
	• Within Class
	  ○ Individual practice (e.g., Quizlet, flashcards, following a model or script)
	  ○ Partner practice (e.g., role play)
	• For Homework
	  ○ Video-based submissions (brief, skill-based or more complex teaching sequences)
	• Within Supervised Field Placements
	  ○ Structured tutoring
	  ○ Applied practice in practicum settings

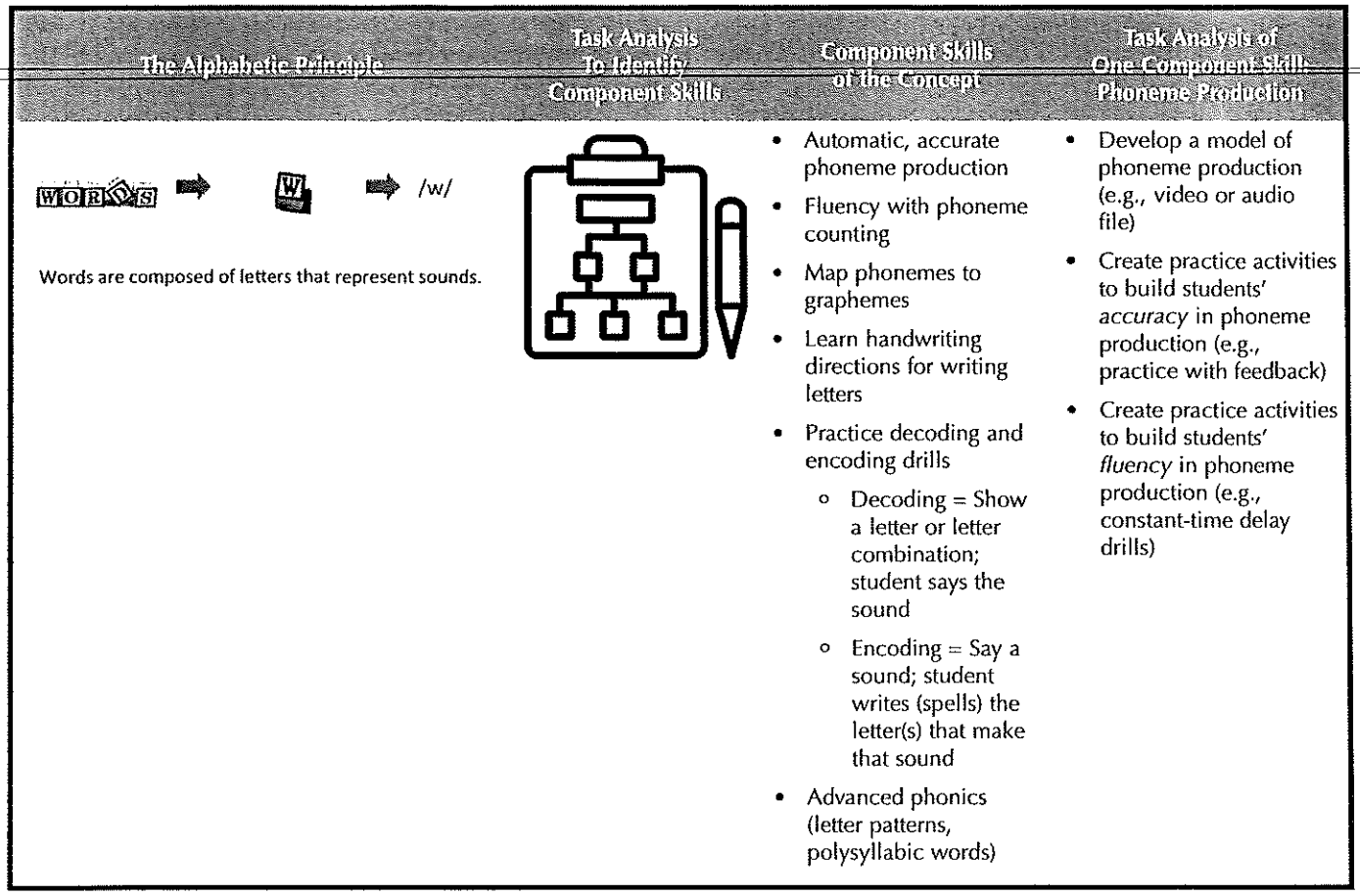

Figure 2. Task analysis of the alphabetic principle.

Targeted, focused investment in the development of teacher candidates' knowledge and skills related to reading instruction will yield measurable outcomes both for teachers and students. In contrast to teaching candidates to be hesitant "guides-on-the-side," programs that embrace an SL approach will produce candidates who can confidently assess, plan, and implement a range of effective instructional practices.

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