Comparing Reading Research to Program Design

AN EXAMINATION OF *TEACHERS COLLEGE UNITS OF STUDY*

STUDENT ACHIEVEMENT PARTNERS

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These reviews were commissioned by Student Achievement Partners, a nonprofit dedicated to improving student achievement. Student Achievement Partners' central priority is to significantly impact literacy and mathematics outcomes for K-12 students nationally, with a particular focus on accelerating academic progress for students who face barriers of racism or poverty.

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Introduction

Reading achievement isn't improving. Too many students—particularly students who are living in poverty or are of color—enter grade 3 unable to read or unable to read as well as they should. The cost of not being able to read by the upper elementary years is borne most plainly by the students themselves, but there are broader social and economic losses for the country as well. Not being able to read leads to an academic downward spiral that, for too many, is seldom reversed.

School and district leaders rightly worry that the elementary English Language Arts curricula they have selected, and that teachers are using, don't leverage what we know about reading science. If instructional programs in common use fail to take account of research on developing children's written and spoken language proficiency, the failure can have devastating consequences. Student Achievement Partners has launched a new initiative, in partnership with preeminent literacy researchers, to interrogate widely used types of instructional programs. Our goal is to make transparent the research-based practices that should be evident in literacy programs and in play in classrooms, particularly to accelerate students who are not reading at grade level.

This is the first in a series of reviews, each of which will focus on one of four common categories of elementary English Language Arts instructional programs reviewed against the relevant research base. This review focuses on the balanced literacy/workshop elementary English Language Arts model and examines a program widely used in schools: *Units of Study* from the Teachers College Reading & Writing Project.[1] If you run a balanced literacy classroom that shares some aspects of *Units of Study* but not others, it follows that some of the research findings in this report will apply and others may not. Similar reviews will follow this first one for other types of programs, including: a basal reading program, a knowledge-based curriculum, and an innovative model.

We enlisted seven literacy experts (one of whom was specifically asked to review the program in regards to its ability to support literacy instruction for English learners) to evaluate *Units of Study* for attention to the research base in the following fundamental areas of reading and language development:

- Drs. David Paige and Timothy Rasinski analyzed the sufficiency of **foundational skills instruction**: print concepts, phonological awareness, alphabetic knowledge, systematic phonics, and reading fluency.

- Drs. Timothy Shanahan and Lily Wong Fillmore analyzed the extent to which the program provides students with **regular opportunities to read complex text and develop academic language**.

- Drs. Marilyn Jager Adams and Jane Oakhill analyzed the program for its attention to **building vocabulary and knowledge about the world**.

- Dr. Claude Goldenberg analyzed the **adequacy of supports for English learners** present in the program.

[1] This includes *Units of Study for Teaching Reading, Units of Study for Teaching Writing,* and *Units of Study in Phonics*.

Each review begins with a summary of findings followed by an explanation of the review process. The reports then proceed into a more detailed, research-based discussion of how the *Units of Study* measure up for that focused aspect of literacy.

Each of the experts was invited to write an analysis because of his or her deep, demonstrated familiarity with the latest research on literacy instruction and understanding of how research translates into practice. In the analyses that follow, you'll hear from each expert as he or she assesses the program for inclusion of critical components of literacy instruction and shares a perspective on how well the relevant research base is reflected in the program's elements.

The areas of inquiry selected all have a robust evidence base demonstrating their efficacy in reading and language development.

Executive Summary

The literacy expert reviewers were impressed by how beautifully crafted the *Units of Study* materials are. They agreed that the lessons and front matter are charming, elegant, and highly respectful of teachers. Reviewers also agreed that the *Units of Study* program is organized above all on the value of loving to read and the encouragement of reading and writing as lifelong habits, both laudable and vital ambitions.

One of the consistent findings of the expert reviewers, however, is that following the course of *Units of Study* would be unlikely to lead to literacy success for *all* of America's public schoolchildren, given the research. Almost every expert noted that many activities designed to practice deepening reading ability were designated as optional, as was text selection itself. The "make your own adventure" design left reviewers skeptical that crucial aspects of reading acquisition would get the time and attention required to enable all students to become secure in their reading ability.

Children who arrive at school already reading or primed to read, researchers agreed, may integrate seamlessly into the routines of the *Units of Study* model and maintain a successful reading trajectory. However, children who need additional practice opportunities in a specific area of reading or language development likely would not. Practice opportunities are almost always optional. For example, as pointed out in multiple places by the reviewers, the lack of common experience with text once the teacher modeling is complete, and the fact that focused practice isn't baked in regularly, mean there are constantly missed opportunities to build new vocabulary and knowledge about the world or learn about how written English works. The impact is most severe for children who do not come to school already possessing what they need to know to make sense of written and academic English—these students are not likely to get what they need from *Units of Study* to read, write, speak, and listen at grade level. A specific finding in this report is that the *Units of Study* fail to systematically and concretely guide teachers to provide English learners (ELs) the supports they need to attain high levels of literacy development.

Phonics and Fluency

Explicit instruction of foundational reading skills is critical in early elementary school. Foundational skills instruction includes print concepts, phonological awareness, phonics and word recognition, and fluency. Numerous studies point to the benefits of a systematic foundational skills program for reading success.

Drs. Paige and Rasinski both commented that the lessons are lively and give the students joyful exposure to the concepts of phonological awareness, phonic patterns, and reading fluency.

Dr. Paige, who closely reviewed lessons for their phonics content, noted major failings: 1) There is not enough time given to acquiring the phonics skills, which is particularly dire for students who might not immediately master those patterns or read fluently; 2) the program frequently recommends use of SMV (structure/meaning/visual system—known more widely as the three-cueing system)—which is in direct opposition to an enormous body of settled research; and, 3) insufficient guidance is provided regarding how to use the results of assessments to inform instruction. This means any student who does not immediately master an aspect of foundational reading is at risk of never getting it. Dr. Goldenberg , whose review of the English learner supports included thorough analysis of the phonics content, corroborated Dr. Paige's findings and reported numerous examples in the *Units of Study in Phonics* where English learner issues and needs are given scant or no attention. Specifically, he found that the *Units of Study* program fails to highlight the importance of explicitly and systematically teaching phonic skills (decoding and encoding) to the detriment of English learners and all beginning readers. It

also fails to make teachers aware of the complex relationship between *literacy development* and *oral language development*.

Text Complexity and Language Development

Students' ability to read complex text independently and proficiently is essential, not only for success in life, work, and post-secondary education, but also so that students in elementary grades can progress to text with richer and richer ideas expressed in more profound ways as their knowledge and skills deepen.

Drs. Shanahan and Fillmore, who focused on this area, found the program's approach to complex text and language development to be too unsystematic to ensure that all students would encounter adequate challenge or receive sufficient supports for successful progress, particularly in grades K–2. At grades 3–5, the program instructs through read-alouds that are largely appropriate in terms of their levels of complexity and challenge but they *aren't texts students read themselves.* Read-alouds in this grade band in *Units of Study* are intended as models of reading that students will then replicate but with texts at their own level. However, reviewers found that the read-alouds for K–2 (where complexity should be higher given that read-alouds are the primary source of knowledge and vocabulary) are also often at or just above grade level, preventing students from building robust vocabularies and discovering how language works in academic discourse during these years of critical early literacy development. In addition, students spend the majority of each lesson in K–5 reading books at their "instructional or independent reading level," books that they can already, for the most part, read with ease. Both Drs. Shanahan and Fillmore noted that the impact of this misalignment to research, particularly on children who do not currently read at grade level, discourages them from experiencing grade-level-and-above text and provides children little support or motivation for reading more challenging material. The reviewers concluded that only children already reading at grade level would be likely to gain the reading muscles needed to continue to progress.

Building Knowledge and Vocabulary

The importance of students building knowledge and acquiring a rich and varied vocabulary is critical — both are inextricably connected to reading comprehension.

While Drs. Adams and Oakhill noted an occasional exception, they found that most of the *Units of Study* program falls short on building knowledge systematically. Students frequently read different books of their own choosing and limited to their current comfort level. Where students silently read books that are different from their partners and chosen largely without regard for the theme or topic of the mentor texts or foci of the lessons provided by the teacher, the promise of independent reading as a potent opportunity for building knowledge and vocabulary is unfulfilled, variable, and weak. While almost all reading can develop some knowledge and vocabulary, students whose comfort level is below grade level suffer greater impacts when the opportunities for knowledge and vocabulary building are not maximized.

Regarding vocabulary, the reviewers found that the program offers lots of top-level emphasis and encouragement to students, but it offers little specific guidance to teachers with respect to how to work with words in the mentor texts to build all children's vocabularies and word acumen. Vocabulary support within the curriculum suffers from an overreliance on, and weak instructional support for, implicit vocabulary acquisition by readers. This is coupled with insufficient support of core meanings, of similarities and differences in the meanings of near-synonyms, of spelling, and of morphology.

Because of the large proportion of instructional time that is dedicated to independent reading of student-selected "just-right" books, students are often left without the teacher supports and scaffolding that are often required to help them build their knowledge of unfamiliar words and knowledge.

English Learner Supports

The foundation of effective literacy practices for English learners is the same as effective literacy practices for students in general: phonological awareness, phonics, fluency, vocabulary, and comprehension instruction, and ample opportunities to engage in meaningful and motivating reading and writing. However, because English learners not in bilingual programs face the dual challenge of learning English as they learn to read and write in English, effective programs must provide additional supports to help teachers and students navigate the more complex challenges. English learners also require instruction and opportunities to develop oral English (listening and speaking) specifically, in addition to systematic and explicit literacy instruction. Oral proficiency and text-based proficiency (i.e., literacy) are related but distinct.

Dr. Goldenberg reported that research-based EL supports are *barely present in the Units of Study*. His analysis included a review of the online supports for English learners in the units developed specifically for California English Learners. While potentially useful generic guidance is provided in each strand's overall guide, there are inadequate and insufficient explicit supports integrated into the activities, lessons, mini-lessons, and assessments themselves. ELs will not have access to best practices in literacy instruction, particularly in the beginning and early stages of literacy development. Claims made in the Units about practices that are "especially powerful" or "incredibly supportive" for English language learners are not consistent with existing research.

What These Reviews Mean for Students

These reviews offer an extraordinary opportunity to educators across the board, and especially those using *Units of Study* or another similar balanced literacy approach or program with students. Each reviewer offers strengths and critiques, rooted in literacy research, to paint a picture of what works and what could be better in service to young learners. Each strength presented represents an area of instruction to amplify in service of young learners. Likewise, each critique offers an opportunity to redesign, adjust, or even radically alter instruction in order to introduce practice in that area that is research proven. The impact this will have, which is up to the teachers and other educators, publishers, and stakeholders committed to learning from this report, may make all the difference in the reading and the lives of children.

Phonics and Fluency Introduction

What follows are the findings of a review of the foundational skills instruction in the *Units of Study* program, including the new *Units of Study in Phonics* and ancillary materials. Guiding the review is the extensive body of research showing that decoding skills are critical to becoming a competent reader (National Reading Panel, 2000).

Proficient decoding skills begin with early emphasis on phonological, and more specifically, phonemic awareness (Melby-Lervaq, Lyster, & Hulme, 2012; Bus & van IJzendoom, 1999; Wagner, Torgesen, & Rashotte, 1994). In a meta-analysis of 235 studies, Melby et al. (2012) found that only phonemic awareness would be a "unique predictor of individual differences in children's word reading skills" (p. 340). Phonemic awareness enables students to map strings of letters to their corresponding sounds, which unlocks the word's pronunciation and its associated meaning (Perfetti, 2007; Ehri, 2014). This makes the mapping process essential to proficient reading.

Phonological awareness, though essential, is not sufficient for beginning reading development. The National Reading Panel (2000) is emphatic that systematic phonics—defined as explicit teaching of phonics patterns following a scope and sequence—is essential, and abundant research that followed supports this. Additionally, adequate opportunities to practice using these newly learned relationships between sounds and letters produce the strongest results for the greatest number of students.

In an alphabetic language such as English, the ability to automatically convert letter patterns to sound facilitates decoding words into speech (Ehri, 2014). This ability is essential to developing the word automaticity that encourages the fluent reading of text that in turn allows readers to focus their attention on creating meaning from what they read (Perfetti, 1985, 1988).

Research has consistently shown a moderate to strong correlation between measures of reading fluency, from the primary through the secondary grades, and measures of oral and silent reading comprehension and overall reading proficiency (Kuhn & Stahl, 2003; National Reading Panel, 2000; Rasinski, Reutzel, Chard, & Linan-Thompson, 2011) and especially for struggling readers (Stevens, Walker, & Vaughn, 2017; Zimmerman et al., 2019). Moreover, studies have found that instruction in fluency leads to improvements in comprehension and overall reading proficiency (e.g., Stahl & Heubach, 2005; Stevens, Walker, & Vaughn, 2017).

Research and scholarly inquiry into reading fluency have identified key instructional strategies for fluency (Rasinski et al., 2011). These include: 1) modeling fluent reading by the teacher or other proficient reader; 2) assisted reading in the form of a less fluent reader reading orally and simultaneously with a more fluent reader through choral reading, paired reading, and audio-assisted reading, in all cases with feedback; 3) wide reading; 4) repeated reading practice of grade-level text; 5) phrasing instruction; and 6) combinations of the above elements into synergistic instruction.

Teaching foundational skills is a complex, multi-dimensional process that unfolds at different rates within individual students. Through no fault of their own, teachers are generally underprepared in both the knowledge and pedagogy necessary to effectively teach this array of skills (Binks-Cantrell et al., 2012). To fill the gap between what students need and teachers know, a research-based foundational skills program becomes critical for the teacher, ultimately increasing the probability that students will leave the early elementary grades knowing how to read.

Phonics Instruction Grades K–2

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Summary of Findings

The *Units of Study* program is extensive, with wonderfully constructed lessons that coherently link reading, spelling, and writing skills. Children whose reading development is well matched to the pace of the materials may flourish in this program. There are, however, three major failings of *Units of Study* when measured against the evidence base:

1. Daily lessons devoted to phonics are 20 minutes long and use a whole group with partner work format. Optional extension activities are included each day, designated to be completed during other parts of the day. Although the authors suggest that lessons can be extended over longer periods of time to accommodate children who tend to struggle, there are counter pressures in the rest of the materials to get off foundational skills and into the reading and writing workshops. There are always competing priorities, which may result in unfinished learning for some students who are struggling to read. Further, the guidance is explicit about limiting foundational skills to 20 minutes, and small group interventions are to be held to between 7–10 minutes (*Small Groups to Support Phonics*, p. IX). Teachers are further told that "[i]t is not the case that all your small groups will be designed for students who need to catch up" (*Small Groups*, p. 64*).* The result is that teachers would need to self-direct to linger with foundational skills beyond the time outlined by the lessons and surrounding guidance.

2. The program (including the *Units of Study for Teaching Reading*) strongly recommends use of the three-cueing system (1. meaning/semantic; 2. structure/syntax; 3. visual/graphophonic cues) as a valid procedure for assessing and diagnosing a student's reading needs. This is in direct opposition to an enormous body of settled research and even runs contrary to the *Units of Study* foundational skills materials that support the teaching of phonics that, for the most part, adheres to reading science and attends to reading development. Much of the guidance for instruction that facilitates reading development in young readers seems to be set aside and ignored once the reading workshop portion of the materials is taken up.

3. Assessments are located in the stand-alone *A Guide to the Phonics Units of Study*. These periodic formal assessments are written to be kid-friendly, and they are. The problem with them is there is insufficient guidance regarding how to use the results of these assessments to inform instruction. Many teachers will be unlikely to move past the whole-class lessons developed in the *Units of Study* to make use of the information about student learning that assessments can provide. Further, insufficient guidance is provided to prompt teachers to regularly assess and then move beyond those results to respond to students' progress with taught skills. While teachers are encouraged to actively monitor students during rug worktime and to analyze the running records done as part of the reading workshop (where emphasis is on comprehension, and miscues are to be addressed via the three-cueing system), there are limited opportunities to gain and act on information about how each student is progressing with taught foundational reading skills. For example, the provided assessment tools contain one developmental spelling inventory for kindergarten and two developmental spelling versions for grade 1, each recommended for use three times per year. Without concrete and frequent information about how students are progressing with taught sound and spelling patterns, it is likely challenging to intervene swiftly for students who need additional support. To compound the problem, concrete guidance is not provided for how to respond to benchmark assessments and teachers are told, "in small groups, you'll launch kids to work in ways that lead not to correctness, necessarily, but to continual improvement" (*Small Groups,* p. 66). It's not clear what "not to correctness" would mean in the context of learning the precise phonics patterns that govern the English language.

Teachers working in schools where students historically struggle with reading will be highly challenged to differentiate their instruction to meet the needs of the majority of students because the program does not provide them adequate groundwork. Therefore, the program is unlikely to bring all students to reading proficiency.

As a result of these shortcomings, the *Units of Study* program does not provide teachers with the full range of research-based instructional support or clear focused assessment and differentiation for all students to succeed.

Review Process

The *Units of Study in Phonics* materials in grades kindergarten, 1, and 2 were evaluated at two levels. First, the beliefs expressed regarding phonics instruction as outlined in *A Guide to the Phonics Units of Study* were reviewed for adherence to reading science. A second level consisted of a review of the lessons contained within the program as well as a review of *Small Groups to Support Phonics*. This is the most important area of evaluation as it reflects the degree to which evidence-based practices are embedded in the program — what is most likely to be implemented by teachers in their classrooms. For each grade, the *Guide* is divided into four to five units, each of which contains 17 to 20 lessons. Thus, for any given grade, the *Guide* provides 75 to 90 lessons for the year.

Findings

Level One Findings: Foundational Beliefs as Expressed in Overview Guide of *Units of Study*.

The guide begins with a list of six principles that form the foundation of the entire program. For each one, the principle is presented with a response about how closely it follows the research.

The ***first*** principle is that phonics instruction is positioned as a means to support reading and writing, and is not an end in itself. The authors state that urgency in decoding development is important and they eschew the convention of the "letter-a-week" approach as far too slow to get students quickly reading and writing. The authors cite researchers such as Adams, Cunningham (Pat and James), Ehri, Hiebert, Rasinski, O'Connor, and Bear as grounding their approach to phonics instruction. For example, the authors cite James Cunningham when explaining that an explicit phonics lesson should extend no longer than 20 minutes per day while additional instruction can occur in small-group settings and during transitional opportunities.

Response: Phonics instruction should be connected to reading and writing. However, stating that phonics supports reading and writing could suggest to some that it is less than critical and perhaps even an optional part of the program (e.g., "Every minute you spend teaching phonics (or preparing phonics materials to use in your lessons) is less time spent teaching other things." (p. 4, *A Guide to the Phonics Unit of Study).* In addition, as the *Units of Study for Teaching Reading* and *Units of Study for Teaching Writing* were written before the advent of the phonics materials, the reading and writing *Units of Study* will not only not directly support skills taught in the *Units of Study in Phonics* but also frequently offer guidance in opposition to that offered in the *Units of Study in Phonics*.

The ***second*** principle is that phonics instruction must follow a research-based sequence. The authors state that the major early reading curricula employ a topical sequence similar to *Units of Study* and specifically cite *Fundations, Words Their Way, Phonics They Use* (Cunningham), and the Fountas and Pinnell *Phonics* curriculum as being very similar in this regard. The *Units of Study* sequence begins with phonemic awareness activities involving rhyming and language activities, segmenting words, and eventually blending and segmenting phonemes. While phonological/phonemic awareness is developing, children are also learning to identify letters and their associated sounds, as well as learning concepts of print. To encourage engagement in reading activities, children are taught about 50 "snap" (sight) words in kindergarten, and another 100 in grade 1, to facilitate reading of connected text. Teaching essential words that occur regularly in early texts is recommended by

leading reading scholars to help students gain access to connected texts as quickly as possible. The authors cite the lessons learned from *Reading First,* which as they remind us James Cunningham explains, immersed students in phonics but lacked sufficient exposure and application to reading and writing activities. **Response:** The *Units of Study* materials provide an online scope and sequence of skills in print concepts, phonological awareness, letter knowledge, word knowledge/solving, phonics, and high-frequency words. Within the printed materials, even in the scope and sequence itself, it is challenging to grasp the big picture of which skills are taught and when, and then when a phonics skill is expected to be mastered. In addition, how much attention teachers should pay to the scope and sequence is called into question in *A Guide to the Phonics Units of Study* in several instances. For example, "[t]his commitment to teaching phonics in ways that give your kids wings as readers and writers has important implications for the nature of your phonics instruction… the demands that books pose will also influence the pace of your phonics instruction. If you keep in mind that level C books contain contractions and that children reading level E books need to draw on a knowledge of long vowels, then it is clear that your phonics curriculum cannot proceed slowly enough so that children master one bit of content before proceeding to another" (p. 2). In practice, leveled readers are assigned a level agnostic of which specific phonics patterns are contained in the books, so students may not be provided with the intended access based on instruction in the *Units of Study in Phonics.* This may be why, within the scope and sequence, skills are sometimes clearly defined (e.g., Unit 2, Lesson 1 in grade 1: Use CVCe pattern with the vowel A to be able to write words) and at other times, lessons move more quickly without a clear and distinct skill focus (e.g., Unit 2, Lesson 7 in grade 1 focuses on identifying phonograms with ending blends -ank, -est, -ing, -ink, -ump, -unk and then moves to -ack, -ash, -ish, -ick, -ock, -uck, -ell, -ill in the following lesson).

This brings us to the ***third*** principle subscribed to by the authors, that phonics instruction is not useful if it replaces engagement in reading and writing. In other words, phonics instruction must not supplant reading and writing instruction.

Response: Phonics is a means to the end, but this stance could again suggest to some teachers that phonics is not reading instruction but, rather is something additional or perhaps optional or even worse, unnecessary. The authors would do well to explain in their materials how phonics, reading, and writing function on an interactive basis to promote literacy skills. This concern becomes more urgent when the three-cueing system is introduced by the authors and is heavily encouraged in the workshops, an emphasis in direct contradiction to the established research and to the guidance offered in the *Units of Study in Phonics.*

The ***fourth*** principle is that, while children benefit from phonics instruction, they must also be taught to use that knowledge when reading and writing. It is recommended that high-utility letter features be specifically instructed while also teaching students to become problem-solvers "specializing in words." In other words, students need a mix of skills and strategies to become effective readers.

Response: Students must put to work what they know about decoding words when reading text. The same letter-feature knowledge that is critical to decoding words is also important to students when writing words. For students to gain efficiency with these skills, they must practice with the very skills they are learning. *Units of Study in Phonics* lessons use poems, sentences, riddles, songs, constructed texts, or shared writing that include the focus sound and spelling patterns or skill. These contain some proportion of words that include the focus phonics pattern or patterns but are often only read while students are together in the whole-class group. Phonics extension activities sometimes highlight a connection to the reading workshop or writing workshop, though these are presented as optional, so there is no guarantee that they will be used. Unfortunately, reading and writing workshop lessons will not "talk back" to the phonics units. The result is limited guidance (and sometimes a counter narrative – e.g., using MSV cueing in the reading workshop materials) with how to continue to leverage the phonics program in reading and writing workshop.

The authors spend time reinforcing the ***fifth*** principle, that phonics instruction should be engaging. The authors state that instruction founded on singing, inventing words, talking, writing, and spelling, as well as the power of a good story, is more likely to keep children engaged and help them convert

instruction to learning. *Units of Study* advocate for the use of decodable texts as children begin their initial reading experience with connected text.

Response: Engagement is important to maintaining student interest in learning. While somewhat controversial, the use of decodable texts during the very early days of reading is supported by prominent reading scholars such as Marilyn Jager Adams (2008). At the same time, it was difficult to find in the *Units of Study* program suggestions regarding when or how to use decodable texts, and it is not apparent that students have opportunities to read and reread the partially decodable texts used in shared classroom experiences again on their own. Independent practice opportunities with phonics patterns not yet mastered are not prominent or directly encouraged at all. Teachers would benefit from additional guidance from *the Units of Study* materials on how best to use decodable texts and how best to provide each of their students with the amount of independent practice with learned patterns each needs to gain solid mastery.

The ***sixth*** and last principle is that phonics teaching must be flexible to account for the fact that children have different rates of learning acquisition. The authors are also clear that phonics instruction is a mix of knowledge and problem-solving skills taught by the teacher within a growth mindset.

Response: The program's authors have essentially provided a "loophole" via this developmental argument for teachers to justify a reader's less-than-adequate progress. The general concern is that the importance of continuing to support children who struggle with reading acquisition is not sufficiently communicated to teachers throughout the materials. Further, children who might need more exposure to pattern-making in order to solidify their reading are not assured of getting it, since extended practice is consistently presented as quick and optional, and a phonics focus in small group time is always competing with other reading and writing workshop activities and lesson plans that are clearly presented as more valuable. The persistence of poor reading results in grades 3 and 4 across the United States suggests that constraining foundational skills instruction to grades K–2 should rather become a K–3 continuum of instruction, with ongoing support as needed. The *Units of Study* program limits foundational skills learning, including reading fluency, to K–2. There is no concrete support for solidifying phonics knowledge in grades 3–5, even within the newly created unit tantalizingly called "Mystery: Foundational Skills in Disguise, Grade 3." There is no section of the unit that addresses foundational reading skills students might not have learned with confidence. The topics all have to do with reading comprehension strategies. This leaves students who may not have acquired a solid foundation unsupported following grade 2.

Level Two Findings: The extent to which evidence-based principles of reading instruction are embedded in the *Units of Study* program.

The review is organized around nine dimensions of the program. For each dimension there is a brief statement of the dimension, then the finding.

1. ***Three-Cueing System****:* In the reading workshop, the three-cueing system appears as the *first strategy* for reading words.

   Finding: This endorsement of the three-cueing system gives teachers explicit permission to center instruction on the three-cueing system rather than the more productive and research-based incorporation of phonics instruction. The best and overwhelming body of research strongly supports that letter-to-sound decoding is the primary system used by proficient readers to read text while it is only poor readers who rely on use of partial visual cues to guess at words (Adams, 1998; Rayner & Pollatsek, 1989; Solman & Stanovich, 1992; Stanovich, 1986). The promotion of the three-cueing system in the reading workshop will dilute the work of the phonics materials by prompting teachers to focus on analyzing running records for errors based on meaning and syntax rather than leveraging taught foundational skills.

2. ***Scope and Sequence***: An online explicit scope and sequence specifies the content and its order of inclusion in the program. A scope and sequence functions as an easily accessible curricular roadmap for the teacher.

   Finding: A scope and sequence, while included online, is difficult to trace in the printed materials. The unit overviews often fail to clearly specify the content from each lesson (e.g., Grade 1, Session 2 – "Getting to Know Some Common Endings"), making it difficult to determine which skills will be addressed during which lessons.

3. ***Concepts of Print***: This is evidenced by the child's understanding that printed words are composed of letters arranged into words, that words represent speech and carry meaning, and that words are read from left to right and from top to bottom of the page. Students also learn that not all markings on a page are words, as some are numbers or punctuation marks (Lomax & McGee, 1987).

   Finding: Concepts of print appropriately unfold across the first three units of the kindergarten materials. The authors correctly do not assume that children enter kindergarten with print concepts; rather, they have numerous activities to help students gain insight into print. One activity of interest is the study of the student's own name. The program uses selected student names to teach the various concepts of print, and to connect letters to sounds. The authors could more explicitly advocate for the role of assessment in assuring that each child is adequately acquiring concepts of print.

4. ***Phonological/Phonemic Awareness***: Phonological/phonemic awareness (PA) is defined as the rhyming, blending, segmenting, manipulating, and deleting of sounds within words. The research is clear that students must become fluent with the deletion and replacement of sounds in words to fully benefit from letter-sound instruction (Kilpatrick, 2015). Letter naming and recall of their associated sounds is best taught concurrently with phonological/phonemic awareness (Evans, Bell, Shaw, Moretti, & Page, 2006; Piasta & Wagner, 2010).

   Finding: The *Units of Study* program is embedded with research-recommended practices for basic phonological awareness instruction throughout the kindergarten and grade 1 materials and, to a lesser extent, during grade 2. The sessions contained within units do not, however, have sufficient activities that involve students in the isolation, deletion, and then replacement of phonemes, what some have called advanced phonemic awareness essential to full understanding (Kilpatrick, 2015).

5. ***Letter-Sound Correspondence***: Printed words remain unrecognized until the reader can convert them to speech. To become effective readers, students must acquire a deep understanding of the sound-to-letter relationships that are the code to how words are pronounced (Adams, 1990).

   Finding: While the *Units of Study in Phonics* follows a sound overall approach to phonics instruction, the pace of skills introduced and limited practice opportunities offered may be problematic for many students who will not get the exposure they need for mastery. The program follows an approach to phonics instruction informed by developmental spelling, an extensive trove of research that has shown how students come to understand the relationship between sounds, letters, and words as reflected in their writing (Read, 1975). But it does so very quickly through the middle of grade 1 into grade 2. For students who can keep pace, this is not an issue. For those who cannot, this is extremely concerning. Many students who do not follow a smooth learning-to-read trajectory may have difficulty keeping up with the materials, and instructions to teachers for assessment and differentiation (more on this below) are not clear enough nor emphasized enough in this program to support all students in mastering the phonics knowledge and skills necessary for proficient reading.

6. ***Sight-Word Reading****:* Learning a large inventory of words that are instantly recognizable is important to becoming a fluent reader (Hudson, Torgesen, Lane, & Turner, 2005). There is a corpus of high-frequency words that appear often in sentences. Words such as *the, said, very*,

play, and *high* are examples of words that are either not fully decodable or that contain letter-features that the early reader has yet to learn. To assist children in reading simple sentences, it is useful to teach them how to pronounce such words as they are growing in their decoding skills.

Finding: The *Units of Study* emphasize the teaching of a select group of high-frequency words as students are gaining in their understanding of letter-sound correspondences. There is no research suggesting how many or which words early readers should be taught to recognize as whole units. The authors recommend that 50 and 100 words be taught respectively in kindergarten and grade 1 to assist them with reading. There is also a focus on teaching sight words through grade 2. Words are introduced through lessons or optional extensions and a "sight word" word wall is used to display taught words.

7. ***Independent Practice***: Learning to decode words is a skill-based process that requires students to practice what they are learning in order to convert it to long-term memory (Anderson, 1983; Roediger & Butler, 2011).

   Finding: Throughout the *Units of Study in Phonics* program, practice occurs during whole group "Rug Time" where students work in pairs for about 10 minutes on activities to reinforce a specific skill. Some teachers may also utilize the optional extension activities. For some students this may be sufficient, but for many others it likely is not. The problem with this practice is that there is not enough of it to ensure all students learn to read, and it is never truly independent. With paired groups, a stronger student can carry the student lagging in skill acquisition with the teacher remaining unclear about which student knows what (see below for additional findings on differentiation).

8. ***Differentiation***: Because students do not acquire literacy skills at the same pace, differentiating instruction is critical to teaching each child to read. Differentiation of instruction has been shown to be up to 10 times more effective than its whole-class counterpart (Connor, Morrison, & Slominski, 2006).

   Finding: The primary concern here is that students quickly diverge in their rate of reading acquisition. This results in a diminishing utility of whole-class instruction for the children who are not keeping pace with the program, which may be well over half the class or more in many settings. There is the strong potential that these students will never attain solid decoding and automatic reading proficiency. Whole-class instruction is at the center of the *Units of Study* foundational skills materials. Because differentiation is not embedded in the lessons that are central to the foundational skills materials, there is limited guidance for diagnosing students' instructional needs and providing much needed differentiation. Absent this guidance, whole-class instruction will benefit a declining number of students.

   Instruction is never differentiated based on student need during the *Units of Study* in Phonics. The *Small Groups to Support Phonics* guide suggests that 7–10-minute small groups be used for students needing similar instruction. These groups are competing for time and teacher attention with other demands on the small-group focus, such as comprehension skills or the recommended use of the three-cueing system. Small-group lessons are 1–2-minute micro-lessons followed by guided practice in pairs for 5–7 minutes. Teachers are cautioned not to exceed the 10–12-minute length of small group time so instruction will stay on pace and not curtail subsequent activities. While the differentiation suggestions offered by the authors are not wrong, what is likely needed most is more small-group instructional and practice time focused on phonics learning that is closely monitored by a knowledgeable adult, be it a teacher or para-professional, to ensure learning is taking place. It is also a concern that at least some, if not many, teachers will be unable to adequately adapt instruction to meet the needs of those who are struggling given that the guidance lacks specifics.

9. ***Assessment***: Summative and formative assessment is critical to ensuring that each child is making adequate progress on the variety of reading sub-skills critical to reading development (Shepard, Penuel, & Pellegrino, 2018).

Finding: Throughout *A Guide to the Phonics Units of Study*, and in the specific lessons, the connection between the results of summative and formative assessment for instruction is not made explicit for teachers. This lack of specificity about what to do with assessment results leaves the teacher on her own regarding which students might need more help and what sort of help she should provide. The recommended assessments are child-friendly and well done, but there is not discussion of their implications anywhere in the materials that this reviewer could identify. The authors suggest that letter identification, spelling development, sight-word reading, and reading fluency be assessed at both the beginning of school and across the school year. It is also suggested that teachers track book logs and student writing as another method to assess growth. Ultimately. There is specific guidance about what to look at, but not guidance on what to look for nor what to do about it.

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Reading Fluency K–5

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Summary of Findings

Overall, the *Units of Study* program does an adequate and appropriate job of making fluency instruction a priority in the primary grades. The *Units of Study* materials generally map to settled research and scholarly opinion on effective fluency instruction and provide teachers authentic, engaging, and research-based opportunities to teach and nurture fluency in students in grades K–2. Students engage in 10 minutes of repeated and assisted reading daily during shared reading. One detailed shared reading lesson plan is included in each reading workshop unit, and teachers are encouraged to write additional lessons using texts of their choosing. In addition to finding fluency in the shared reading component of the reading workshop, opportunities for fluency development are found throughout the kindergarten and grade 1 *Units of Study in Phonics* materials. In every unit of the kindergarten and grade 1 programs, students are provided with multiple opportunities to engage in repeated and assisted reading of short texts that will build fluency. A significant number of these activities, however, are optional extensions that teachers may or may not implement with students. Fluency is also taught and nurtured, but in a more incidental manner, in the grade 2 materials.

While reading fluency is identified as a major goal of reading instruction and a contributor to reading comprehension for grades 3–5 (*A Guide to the Reading Workshop: Intermediate Grades*, p. 20), it appears that fluency is not as integral a component of the reading workshop in *Units of Study* for grades 3–5 as it is in the primary grades.

One significant concern with fluency in the *Units of Study* program that should be pointed out is the lack of a system for assessing and monitoring fluency development in students (Rasinski, 2004). Without an assessment system for fluency, teachers will not have tools for identifying and monitoring students who may not be sufficiently proficient in this aspect of reading. Further, the *Units of Study* program does not provide instructional suggestions for intervening with students who lag in their fluency development.

Review Process

Since reading fluency is considered a foundational reading competency in college- and career-readiness state standards around the nation, the general guide (*A Guide to the Reading Workshop*) to the reading workshop as well as the curricular guides and curricular materials for the *Units of Study in Phonics* program were investigated. A separate curriculum for providing instruction in reading fluency does not exist.

Findings

1. **Reading Workshop, Primary Grades (K–2): In the *Units of Study*, reading fluency is specifically, explicitly, and directly taught in the shared reading component of the reading workshop in the primary grades (K–2).** In addition to the repeated and assisted reading that is a part of shared reading, wide reading (p. 17), and teacher read-alouds, both aspects of an effective fluency curriculum, are also recommended and integral parts of the reading workshop in the *Units of Study*.

   The reading workshop is the primary vehicle for instruction in the *Units of Study* program. The *Guide to the Reading Workshop: Primary Grades* provides teachers with an overview of various

components of instruction. Fluency is described in the *Guide* as an essential component of reading instruction. The *Guide* identifies "phrasing and expression" (p. 44) as goals of instruction. A major component of the *Units of Study* in the primary grades is daily shared reading (p. 143), a type of assisted reading where the teacher reads a text "with your students, with all eyes on a shared text" (p. 54). Moreover, the same text is read repeatedly over the course of several days (pp. 137–138), and it is suggested that students are also given the opportunity to read the text in their independent reading. The instructional focus of shared reading changes from day to day: one day is word study, another fluency, and another on comprehension. Texts for shared reading include rhythmical texts such as rhymes and songs where the teacher can focus on phrasing and melodic reading (pp. 142–143):

> Read and reread the song, working with students on first understanding the phrasing… After you have read the song once, make sure you take the opportunity to quickly retell what it is about. Then proceed with a few consecutive rereadings… (p. 143).

In addition to the chosen text for the week, each shared reading lesson includes a warm-up in which students reread a familiar text (e.g., class chart, poem, or selection from a favorite book) (p. 138). Direct reference is made to doing this to develop fluency.

The *Guide* devotes an entire chapter (6) to assessment to support instruction. Word recognition accuracy and comprehension are assessed through running records, a type of informal reading inventory. While the running record data could easily be adapted to also include assessment of word recognition automaticity and prosody (two major components of fluency), neither are addressed in the running record or in any other portion of the assessment chapter.

2. **Reading Workshop, Intermediate Grades (3–5)**: **Reading fluency is identified as a major goal of reading instruction and a contributor to reading comprehension (p. 20). However, it appears that fluency is not as integral a component of the reading workshop in grades 3–5 as it is in grades K–2.** Fluency is mentioned in the *Guide to the Reading Workshop: Intermediate Grades* as a characteristic of reading that teachers should be aware of and observe; however, there is no systematic guidance or direction provided on how to nurture, assess, and monitor fluency development. Inasmuch as reading fluency is an instructional concern beyond the primary grades (Rasinski, Rikli, & Johnston, 2009), and that a significant number of students struggle with fluency in grade 3 and beyond, the lack of direct instruction and support in fluency is a concern.

3. **Phonics, Grade K: The *Units of Study in Phonics* materials for kindergarten provide multiple opportunities throughout for students to engage in repeated and assisted reading of texts that lend themselves to fluency development (repeated and assisted reading of song and poetry not only lead to automaticity in word recognition but also improved prosodic/melodic reading). A significant number of these reading opportunities are optional, however.** The kindergarten materials are made up of four units, each consisting of 17–20 lessons. Many of the songs are originals that are sung to songs that children are already likely to be familiar with (e.g., "Old MacDonald," "London Bridge," "If You're Happy and You Know It"). For example, in Unit 1 (pp. 12–103) the "Star Name" song is sung four times over multiple days. Additionally, seven other opportunities to read/sing the song are offered as optional extensions. In Unit 4, the "What's the middle sound you hear?" song is read at least three times with another reading offered as an extension. Throughout the K materials, students are given opportunities to read fluency-oriented texts. In many of these cases, students are prompted to read the text together multiple times (usually two or three). Students are also given opportunities throughout the K materials to read and reread, and in some cases write, words from Snap Word (high frequency) charts (e.g., Unit 2, pp. 34–35, 44, 69–73, 93, 104–105, 106; Unit 4, pp. 11, 57, 58–50, 91). Of some concern is that a significant number of the repeated and shared reading activities are offered s optional extensions, so that a teacher may choose not to employ such readings with students.

4. **Phonics, Grade 1: As in the kindergarten materials, throughout grade 1, students are given opportunities to engage in repeated reading, shared reading, and partner reading of various texts. Many of the texts are songs or poems. Again, a significant number of these reading opportunities are presented as optional extension activities.** The *Units of Study in Phonics* grade 1 materials are made up of four units, each consisting of 17–20 lessons. For example, in "One of These Words Is Not Like the Other" (Unit 1, p. 70) and "Make New Friends," teachers and children are prompted to read/sing at least twice. Shared reading is the more prominent part of grade 1 as students are moving into conventional reading. For example, a postcard (Unit 4, pp. 31–33) is initially read as a whole class, and then with partners. Snap (high-frequency) words continue to be a significant part of all four units of grade 1. For example, in Unit 1, students review snap words (pp. 54–57), sort the snap words (pp. 59–63), review snap words with the vowel O (pp. 65–67), use snap words in their writing (pp. 79–86), and use snap words to make other words (pp. 99–101). It needs to be pointed out that, like in the kindergarten materials, a significant number of the repeated, shared, and snap word reading opportunities are presented as optional extension activities. Inasmuch as fluency is foundational competency to be developed in the primary grades, and that research has found that a significant number of primary grade students struggle in fluency, fewer optional and more required fluency instructional activities may be beneficial to a fuller range of students.

5. **Phonics, Grade 2: While the *Units of Study in Phonics* grade 2 materials make references to fluency activities such as repeated reading, assisted reading, and reading expression, those references are generally less comprehensive and systematic than in the K–1 materials.** Throughout grade 2 there are texts (especially poetry and songs in Unit 3) that lend themselves to fluency development through rehearsal and performance with expression. Reference is made to fluency coaches (Unit 1, pp. 126–127), student performance of poetry (Unit 1, pp. 135–137), texts for shared reading (Unit 3, p. 143), student rehearsal and performance of a commercial (Unit 3, p. 166), choral reading of text (Unit 4, p. 109), rereading of poetry (Unit 4, pp. 125–126), and fast reading ("Small Group Text," p. 39). Additionally, there is reference throughout grade 2 to high-frequency words (snap words), though it is not clear the extent to which students are encouraged to practice such words to the point of automatic recognition. It should be noted, however, that fluency continues to be an integral instructional component through the daily shared reading activity in the reading workshop.

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Editor's Note: Dr. Rasinski served as a reviewer of the *Units of Study in Phonics* program pre-publication.

Text Complexity Introduction

Research shows that providing students with explicit guidance or support in handling the features of text that make it challenging (e.g., vocabulary, text structure, informational density) is beneficial. (National Reading Panel, 2000; Schleppegrell, 2001; Scarcella, 2003; Halliday, 1987; Snow & Uccelli, 2009). Children must acquire the language of academic discourse in the course of learning to read and write. The texts, the materials on which they are taught to read, are the sources for developing the language of academic discourse, provided they follow an appropriately advancing staircase of linguistic complexity. To avoid making the task of learning to read with understanding more difficult than it already is, both content and discourse must be upgraded and expanded incrementally if children are to develop the language capacity required for true literacy. The development of the advanced language skills required for proficient reading, writing, and oral communication in school depends on exposure to texts that communicate interesting information, along with instructional activities that are designed to promote that development. It is the teacher's role, in any literacy program, to provide the instructional support children need to develop the advanced language skills that figure so prominently in literacy (Fillmore & Snow, 2018).

When young readers are starting on the road to literacy, the texts they can read themselves are relatively simple, with highly constrained vocabularies, short sentences, familiar content, limited depth of content, and so on. For texts in grades K, 1, and 2, the focus of text complexity for this review is whether the read-aloud texts used in the program allow students to gain familiarity with, and the basis for learning how to interpret and eventually to use, the language structures, constructions, knowledge, and vocabulary needed to read and write well thereafter.

As children become increasingly proficient readers, they gain expertise in making sense of more demanding texts. For students to make this transition successfully, it is essential they be provided the opportunity to read a progression of sufficiently challenging texts for themselves. Additionally, because learning tends to go more smoothly when supported by instruction, this exploration of increasingly complex text is most successful when teachers provide appropriate guidance and support, such as helping with the unknown vocabulary or intervening along the way to get students to reflect about what they are reading. Research reveals the need for sufficiently demanding texts in reading instruction to provide opportunities for students to develop facility with sophisticated vocabulary, complex syntax, subtle cohesion and text organization, and to gain a deep understanding of literary and informational content (Brown, Mohr, Wilcox, & Barrett, 2017; Dunkeld, 1970; Kuhn, Schwanenflugel, Morris, Morrow, et al., 2006; Morgan, Wilcox, & Eldredge, 2000; Northrop & Kelly, 2019; Valencia, Wixson, & Pearson, 2014).

Text Complexity K–2

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Summary of Findings

Since children in K–2 are in the early stages of learning to read, they are unlikely to encounter texts of any real complexity except in read-alouds, and this is true in the *Units of Study* program. As the primary source of knowledge-building, read-alouds in the K–2 grade band can and should go well beyond the leading edge of text complexity for a grade level, but the texts suggested as read-alouds for K–2 in the *Units of Study* are mostly just a little above grade-level Lexiles. Read-alouds are used in two ways in the program: mentor texts are utilized for mini-lesson demonstrations supporting a "teaching point" rooted in a focus skill or strategy, and one read-aloud text-based lesson plan is provided for each 5–6-week unit. While teachers work with that text-based plan over a multiple-day period, there is not nearly enough guidance offered regarding the need to pay attention to the language of written texts so as to make them useful to students' language and comprehension development. Reading researchers point out that read-alouds are most effective for language development when teachers engage their students in lively discussions not just of the story (Beck & McKeown, 2001), but also of the language used in the text. When that happens, read-alouds have been found to promote vocabulary growth, the development of literary syntax (Purcell-Gates, Mcintyre, & Freppon, 1995), and an understanding of language structure in informational texts (Duke & Kays, 1998; Duke, 2003). Stated simply, read-alouds by teachers offer children opportunities to discover how language is used in texts, but this happens only if their teachers call attention to language and invite the students to think about and discuss what the words, phrases, sentences, and passages communicate. There is barely enough instructional attention given to how language works in these texts to allow children to discover how academic language works. The additional worry is that children who can't read well by grade 2 will be sent off by *Units of Study* to select impoverished little books to read on their own where they will be exposed to none of the language features and vocabulary that are important.

Review Process

The review of this program began with a thorough reading of *A Guide to the Reading Workshop: Primary Grades* and *A Guide to the Writing Workshop: Primary Grades* to get a general overview of the program, its pedagogical approach, and its rationale. A more cursory scanning of the two volumes on assessment and learning progressions (*Reading Pathways* and *Writing Pathways*) provided additional background in preparation for the close study of the four-unit volumes for each of the grade levels this review covers: kindergarten through grade 2 reading workshop materials. Units for grade 3 were also examined (although not as closely studied) in an effort to determine whether the early grade units are promoting necessary language development for the reading children have to do in grade 4, when they are expected to learn subject-related content from the texts they read in school.

The main focus in this review is text complexity in the materials used in the *Units of Study* for K–2, and to consider especially whether the language used in those texts might provide children opportunities to discover and begin learning how the language of academic discourse works. The problem here is that the texts encountered differed from child to child, since outside of the mini-lesson, each child was provided materials geared to his or her reading level, and the bulk of student time each day ("Independent Reading and Writing; Conferring and Small-Group Work" for 35–45 minutes) was spent dealing with those materials either independently or with another child. Aside from the brief interludes of teacher-led reading, it is impossible for each child to have rich exposure to academic discourse and all the complexities of beautiful writing. Instead, children are directed to

work together using strategies they have been taught to make sense of the materials they have chosen or been assigned.

For that reason, special attention in this review was paid both to the language used in the texts that were identifiable in the *Units of Study* when given as examples of how teachers might carry out instruction in their daily 10-minute mini-lessons. (A list of the trade books and anchor texts used in the *Units of Study*, along with Lexile scores, helped to track down books for closer examination.) In particular, the texts that were identified as read-alouds and shared readings for each unit were studied since those are shared whole-class experiences. The questions that guided the study of these texts were these:

- How appropriately complex is the language as evidenced in the sample at hand for the grade level?
- What attention is given to any aspect of language from the text in the suggestions for teaching offered in the *Units of Study*?
- What attention is given to academic language features identified in the sample at hand?

Findings

1. **Read-alouds can and should go well beyond the leading edge of text complexity for a grade level, but the texts suggested as read-alouds for K–2 are mostly just a little above grade-level Lexiles.** While there is no expectation that the texts children read solo (or with a buddy) in K–2 would be highly complex, that is the expectation with respect to what children hear via read-aloud. Read-alouds can offer access to more interesting texts and richer language than children can encounter in books they themselves are reading, especially in the primary grades when they are just learning to read. The choice of interesting read-aloud texts that are above grade level provides children a look ahead at the language they will be encountering in texts before long. "Anchor texts" used by teachers as read-alouds in the *Units of Study*, or in shared (choral) reading, are intended as whole-class, common experiences for all. One read-aloud and one shared reading are included at the end of each K–2 unit. Again, the texts presented serve as examples, since the materials espouse that teachers can choose whatever books they like for these activities. The ones used as read-alouds are somewhat higher in Lexile ratings than those used for shared readings: for example, the read-aloud for the first kindergarten unit is "The Carrot Seed" (400L); the one used for the shared reading, "Mrs. Wishy-Washy," chosen for its repeating lines, is simpler at AD200L. For any text, fiction or nonfiction, to serve as the means by which children can discover how language works in academic discourse, it must make some use of the structures, expressive devices, and forms that epitomize this type of communication. Even then, there is just one such read-aloud lesson plan studied over multiple days for each unit, and while multiple sessions are devoted to each read-aloud, that is just one such experience per 5–6-week unit. While the materials encourage teachers to create similar shared reading and read-aloud experiences for students, neither the materials nor planning are provided; therefore, there are no assurances that these texts and experiences would ensure exposure to necessary rich language and ideas.

2. **While there is some attention to language of the various read-aloud texts used in the K–2 units, the focus is hardly ever on the language features that are arguably clear instances of academic or literary discourse.** When structures, expressive devices, and forms do show up in texts, it is important for teachers to call attention to them and to offer supportive guidance in understanding the text. The text must be understood—comprehended—to reveal its underlying structure. In the *Units of Study*, the read-alouds are presented as means for teaching children how to think about the texts they are reading, and while that may result in some children noticing how language per se figures in their thinking, attention to the words of the author and the sentences containing those words is not explicitly promoted. This is a crucial failing; only children already in possession of the ability to notice will glean any exposure to the various language structures and forms.
3. **Little information can be derived about the text complexity of the materials students are working with directly since they are self-selected or assigned by reading level (materials**

that individuals are able to read with 96% accuracy at any given time). A substantial proportion of each period devoted to reading (35–45 minutes) is spent with children working on their own or together with a partner, presumably at the same reading level. Much also depends on the materials available in the classroom's leveled reader collection at a given level. It is important to point out that there is no expectation that the texts children read solo (or with a buddy) would be highly complex in K–2. That being the case, the procedure for ensuring that children make progress upward from whatever level they happen to be at is crucial, and the *Units of Study* are silent on this. There is no assurance that every student is provided the instructional support needed to learn to read texts well at grade-level complexity. Indeed, children who have difficulty managing texts independently at a given Lexile level are provided texts at a lower level, rather than the instructional support needed to enable them to read at the higher level. This is an unseen, but powerful mechanism for suppressing progress in reading development for many children who are simply assigned materials they can read on their own.

4. **Most of the texts listed as anchor texts are storybooks, mostly aligned to Lexile levels for the grade level. Far fewer of the anchor texts are nonfiction, and they too are mostly at grade level, with two notable exceptions, which are discussed below.** This was surprising for a few reasons. Nonfiction books are ways students learn about the world and how things work, both of which are sources of deep pleasure for children. More, children can listen with comprehension to much richer and more complex books than they can read for themselves throughout elementary school.

5. **The design of units in *Units of Study* might not seem immediately relevant to the questions of text complexity and language development, but it does matter when units are designed around the teaching of reading strategies and behaviors rather than around content or specific topics.** While cultivating the strategies, behaviors, and practices of a reader are worthwhile and desirable, choosing texts to facilitate practice on learning those strategies and behaviors can result in an eclectic (at best) or random collection of materials. What is lost, then, are focus, continuity, and coherence in reading—all of which allow children to read materials they might not otherwise be ready for. The goal of inculcating in children the idea that they are independent readers right from the beginning leads to the choice of picture books with few if any words. The goal of having children select books they are able to read means putting together collections that are at a particular reading level rather than organized around topics the children might be interested in. This obviously does not preclude organizing collections around topics, but when the goal is for children to choose from books they can read with 96% accuracy, it becomes a great challenge to organize sets of materials for each child around specific topics! This seemed to be problematic especially in the grades 1 and 2 units devoted to getting children to see nonfiction books as ways to learn about the world and gets back to the two notable exceptions to the selection of read-aloud books that were close to grade level or higher. In each case, the texts mentioned or used as examples for the nonfiction units are on assorted topics. For the grade 1 nonfiction unit (Unit 2), there are books on monkeys, horses, fire-houses, doctors, owls, and super-storms. For the grade 2 nonfiction unit (Unit 2), the anchor books deal with forces and motion, while a couple are about tigers and knights in shining armor. What do these books have in common aside from all being nonfiction? Possibly, the books children are to work on themselves offer text on these and other topics, but, since children get to choose their own reading, continuity or coherence would depend on children finding other books on topics of interest only if those books are made available to them. The two read-alouds for these units seem almost like outliers, interesting and considerably more complex (S. Simon's *Super Storms,* 730L; G. Gibbons' *Knights in Shining Armor,* 930L) than the other texts mentioned or listed as anchor texts, but they, too, are unrelated to the other materials in their units. In each case, students are invited to call on their own knowledge and experiences to aid in their understanding of the text that is being read to them. But what of the children who don't have this knowledge or many experiences to draw on in these areas? There is both language and interesting information to be learned, but from the discussions in the unit guides, there appear to be many missed opportunities because these texts were not supported by other readings on weather and climate, or life in medieval Europe, or recommendations in the teaching guide to do so.

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Text Complexity 3–5

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Summary of Findings

Evaluating the pedagogical adequacy of access to complex text in the *Units of Study* program (grades 3–5) is not straightforward. In *Units of Study* there are almost no required readings outside of what the teacher reads aloud; the students themselves choose the texts they are to work with at their independent reading levels. The program places a strong emphasis on having students read texts that they can already read well at their prescribed levels—the kinds of texts that research has found to not stimulate much learning (Shanahan, 2019)—and has adopted text complexity targets that are far below those adopted by most states. Teachers are to discourage kids from attempting to read books that they would find to be challenging, and the instructional guidance is often inadequate for supporting success with more challenging books. Although the program pays lip service to the importance of complex text in reading development, on balance the approach is too unsystematic to ensure that students will encounter adequate challenge or receive sufficient supports for successful progress toward college or career readiness. This lack of exposure to text complexity may be one of the reasons that being taught in the "low group" carries a learning penalty for minority students (Sørensen & Hallinan, 1986).

Review Process

This evaluation was based upon a thorough analysis of the grades 3–5 levels of the *Units of Study* program. This review included reading the three guidebooks that accompany all three grade levels of the intermediate grades program (*A Guide to the Reading Workshop*, *Reading Pathways: Performance Assessments and Learning Progressions*, and *If…Then…Curriculum: Assessment-Based Instruction*), and the four reading program unit guides for each grade level that are the heart of the program). These readings identified all specific guidance provided to teachers about the selection and assignment of texts to students, the guidance offered to students about book choice (since it is the students who determine what should be read), the instructional supports or guidance provided to students to help them to access these texts, as well as any mentions of specific texts that teachers might include in their programs.

This set of instructional materials does not include texts for students to read. There are recommended anchor texts and extensive optional libraries that schools may purchase separately, but none of these are required. The program is written with optional guidance about purchasing these book collections so at least some schools do not.

Additionally, the four writing workshop guides at each grade level were skimmed to identify any additional text guidance, and the Lexile levels of all of the anchor texts (for reading or writing) recommended for use in these three grade levels were analyzed. The program website was also examined, particularly with regard to book recommendations, and the Lexile levels of the grade 3 library recommendations were analyzed.

Findings

1. **The program includes no student texts, only text recommendations, which means there is no guarantee that children taught with *Units of Study* will be exposed to sufficiently challenging texts or even texts at grade level, as called for in every states' reading standards**. The instructional units revolve around "anchor texts." To deliver the lessons as described, teachers need to use copies of the specific anchor texts (though the program says that teachers may alter these lessons by employing different locally selected text models). Anchor

books are not for student reading, but are teacher read-alouds used for demonstration and instruction.

Units of Study has created libraries for optional purchase: "We have also created complete grade-level classroom library collections, and individual 'shelves' on a variety of high-interest topics to support your reading instruction and the *Units of Study*" (*A Guide to the Reading Workshop: Intermediate Grades*, p. 12). These libraries appear to be of high quality and cover a wide range of levels, topics, and genres. If schools purchased the optional libraries or stocked classrooms with comparably varied book collections, it would be possible for a student to gain a considerable amount of experience with sufficiently challenging texts—as long as the particular student then chose to read the more challenging texts. This required chain of events points out a lack of assurance as to whether *Units of Study* would ensure that students would be reading complex text.

The program acknowledges that many schools will not purchase these libraries, so it offers general guidance for provisioning alternative classroom collections *(A Guide to the Reading Workshop: Intermediate Grades,* pp. 30–31) including scouring "tag sales and thrift shops." It is a hard to imagine that such a haphazard approach would lead to high-quality collections of appropriately leveled texts that would ensure students would be exposed to sufficiently challenging, high-quality texts.

2. **Students determine which books to read and, consequently, which features of text complexity to experience. Accordingly, some children might make wise choices that impel their reading improvement, while others might not be so lucky.** In *Units of Study,* teachers do not assign texts to students but make books available from which the students choose. Even if a school were to purchase the recommended classroom libraries or assemble similarly high-quality collections of their own, that would not ensure that students would be confronting sufficiently challenging texts or supportive progressions of text complexity in their reading. The workshop approach, in which students choose the books they want to read, is central to *Units of Study.* In reading workshops, teachers provide brief amounts of instruction, which is then followed by extensive amounts of student reading (at these grade levels, the recommendations are for 40 minutes of reading per day at school and at home).

   Student attitude and enjoyment are central to *Units of Study*. There is heavy emphasis on providing books that kids will want to read, constructing library spaces that students will enjoy, and on specific lessons that emphasize developing positive attitudes toward reading. Although in various points throughout the program, teachers are provided with advice for encouraging students to try harder books or to focus on different topics or genres, this guidance always has to be balanced against the amounts of self-selected reading in which students are to engage. (It should be noted that the program does include occasional requirements to read texts on a particular topic: for example, in grade 4 there is a weather unit and one on the Revolutionary War for book clubs or reading partnerships that might serve to broaden children's choices as well.)

3. **The program recommends the use of texts and instructs through read-alouds with anchor texts that are appropriate in terms of their levels of complexity and challenge. Read-alouds in this grade-band in *Units of Study* are used as models of reading that students will then replicate, thus text complexity at, or slightly-above, grade level is appropriate, though it could be argued students should be reading these sorts of texts themselves.** The average anchor texts at these grade levels match the college- and career-readiness expectations in many state goals, and the majority of these anchor texts fall within those grade-level bands or exceed them, but these texts are in teachers' hands only and not in the hands of children. Likewise, though the books recommended for inclusion in the grade 3 libraries are quite diverse, the majority of the books for grade 3 fall into the top tier of the grades 2–3 state readability bands.

   If schools were to use the specific anchor texts recommended by the program and purchased the books from the recommended libraries, students would be exposed to and would have the opportunity to read texts at levels of difficulty that are in accord with the state targets. However,

the claim here is not that all of the recommended books meet the state targets, only that there appear to be sufficient numbers and proportions of such books to do so (not all texts need be at the target levels to support success and there are sound pedagogical reasons for providing a wider range of text challenge within instruction). The actual likelihood that classrooms would obtain all of these texts appears somewhat dubious, but even if obtained, this could still result in particular children never or rarely reading these appropriate books.

4. **The program strongly urges teachers to encourage students to read books at "their levels."** That student choices determine what is actually read in the *Units of Study* program is one reason to doubt that students will necessarily read texts at appropriate levels of complexity or that they will read supportive progressions of text difficulty. Another reason for this concern is that the program is so forceful in its support for having students focus on texts that they can already read well without instructional support. The program provides assessments for determining which levels of books students will be able to read with "high levels of fluency, accuracy, and comprehension" (Calkins & Tolan, 2015, p. 11), and recommends organizing the classroom book collections by level so that students will be able to "locate books that are within reach for them… [since] children benefit from opportunities to engage in lots and lots of high-success reading" (p. 23).

   Although there are various suggestions—particularly in grade 5—for encouraging students to try somewhat more challenging texts ("Talk to kids about moving up levels and how they can deliberately choose [book] series that will help them move up levels of complexity," [*Units of Study for Teaching Reading*, grade 5, p. xiii), the vast majority of advice on these issues is cautionary, warning teachers against allowing students to read texts that may be hard for them. Or, "As you match students with nonfiction books, continue to aim for approximately 96% accuracy when students are reading without book introductions or other forms of support" (*Units of Study for Teaching Reading*, grade 4, p.xvi). Or, "You may find that despite today's instruction, some of your students are still reading books that seem too hard for them" (Calkins & Tolan, 2015, p. 31), and the text goes on to tell how to discourage this.

   Some educators have long claimed that students learn to read best with minimal levels of challenge (and errs in its citing of research that supposedly supports this proposition). Nevertheless, research studies that have tested the idea directly have found it wanting (Shanahan, 2019). Students make greater learning gains when presented with greater challenge levels than the ones recommended here. On pages 16–17 of *A Guide to the Reading Workshop: Intermediate Grades*, there is a chart showing text-level benchmarks that teachers are encouraged to strive for, along with an explanation of why these target levels do not match the text goals adopted by most states. Districts adopting this program will be out of alignment with most of their state standards, which consistently demand students be exposed to grade-level text complexity with clear definitions.

   One suspects that students who are already on or above grade level in reading may do fine in such a program (though they may not learn as much as they possibly could), but lower performing readers will find themselves strongly discouraged from working with texts that would allow them the greatest chance for learning gains, and teachers would be explicitly discouraged from trying to help them reach their state's educational goals.

5. **The program often provides reasonable and high-quality guidance in how to support the reading of complex text—though this assistance may be too inconsistent and haphazard to ensure learning.** The availability of sufficiently challenging books and requirements that students read is only one facet of guiding students to deal with increasingly complex text. Book availability is important, but so is the provision of explicit guidance and support for students who are reading these challenging texts, along with ongoing systematic instruction in relevant strategies or skills that would be supportive.

   With regard to this instructional support, the *Units of Study* story is decidedly mixed. Its units provide a plethora of wise advice (e.g., read multiple books on one topic or read an easier book

on a topic before reading a harder one) and introduce many research-based skills or strategies (e.g., text previewing, prediction), but the treatment of these is largely unsystematic, inconsistent, and at odds with the research that it cites. The guidance reads more like a really good book for teachers about literacy than a program capable of supporting daily student progress. For example, there are sound lessons on teaching students to use morphology or context to make sense of new vocabulary words, but research shows that such introductions would be insufficient and there would be a need for more systematic and ongoing treatments of these issues (Bowers & Kirby, 2010).

6. **Given that the individual students determine what to read, 25 children in a classroom could have 25 remarkably different reading experiences within *Units of Study.*** The program advises that teachers should confer with students about the texts that they read, and many of the lessons encourage kids to use particular strategies or to pay attention to particular text features that can help them to make sense of the texts (such as lessons in figurative language, predictions, text structure, literary elements, author perspective, book previewing, prediction, and so on). This is all to the good, but research does not support the effectiveness of such brief random introductions of these concepts (National Reading Panel, 2000) and one wonders how supportive or effective these teacher-student conferences will be given the probability that teachers will lack deep or thorough knowledge of the books that the students are reading or why those particular texts are complex (e.g., 25 kids reading 25 different books drawn from a recommended library of 1,000 books per class).

   Although the units provide guidance to teachers in how to ask general questions that will make it appear to the kids that the teacher knows something about the books, this should allay no concerns about whether guidance from someone who doesn't know a book will recognize when students are misunderstanding key points or which subtle text characteristics may have been the source of the confusion.

   Appropriately, the program suggests that teachers provide "guided reading lessons" for the lower-performing students—that is, small-group lessons with a common text a bit harder than what students could handle well on their own—that teachers would lead students through, but again, these recommendations are occasional and somewhat haphazard; they are probably not sufficient to help many students to read complex text successfully.

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Building Knowledge and Vocabulary Introduction

The dependence of literacy competence on vocabulary development derives from the fact that, even excluding proper nouns and specialist language, written English is made up of well over 100,000 different words, most of which arise rarely if at all in everyday conversational language (Brysbaert, Stevens, Mandera, & Keuleers, 2016; Nation, 2001). Research documents that to comprehend a text, the meanings of at least 95% of its words must be known to the reader (Hu & Nation, 2000; Laufer, 1988, 1992); meanwhile, conversational levels of vocabulary limit readers to word exposure at a grade 4-equivalent reading level or below (Chafe & Danielwicz, 1987). Not surprisingly, then, the sheer number of words in a reader's vocabulary has long been shown to correlate strongly with reading comprehension across age groups, years of schooling, and languages (e.g., Davis, 1942; National Reading Panel, 2000; Thorndike, 1973; Whipple, 1925).

Even so, it is not the number of familiar words on which reading comprehension depends, but the completeness and confidence with which the reader knows their meanings. The core definition of a word is only a tiny fragment of the meaning that makes it useful in understanding language. As confirmed through neuroimaging, the full meaning of any word consists of bundles of features and associations that are the cumulative product of the reader's experience with the word, the concepts it represents, and the contexts in which the word and concepts have arisen (Dehaene, 2009; Perfetti & Hart, 2002). When a given word is encountered in the course of reading, it activates this entire, extended complex of associations in the reader's mind. In turn, the same thing happens on reading the next word in the text, and the one after that, and so on. As the associations tied to each ensuing word are activated, those subsets of knowledge from the different words that overlap or fit together effectively become superactivated. As these overlapping associations correspond to the ways in which the meanings of these words are related to one another, they are the candidates for the intended sense and nuance of each of the words in this context. Meanwhile, the syntax of the sentence combines these overlaps, organizing their roles and relevance so as to create a "best-fit" reconstruction of the author's intended message in the reader's mind.

By implication, where the reader cannot recognize a word at all when reading, what is lost is not just the meaning of that particular word, but also the work it was supposed to do in selecting the appropriate dimensions of the meanings of the other words around it. Where the reader recognizes the word but has incomplete knowledge of its meaning and usage, understanding of the text is commensurately impoverished.

In short, knowledge is the very medium of understanding while the words and wordings of a text are the tools that enable the reader to construct the understanding intended by the author. Informational text presents a special challenge not only because it characteristically uses different words from narrative or conversational language (Biber, 2006; Chafe & Danielwicz, 1987, Gardner, 2004; Nagy & Townsend, 2012), but also because it uses words in different ways. Among differences, informational texts are characterized by more Latin- and Greek-based vocabulary, more morphologically complex words, more nouns and prepositions, and more abstractness. In addition, informational texts are characterized by greater informational density and less redundancy and by language that is syntactically more complex. Vocabulary is the principle means by which literary text increases its density, precision, and efficiency.
Given that the purpose of informational text is to convey new information—that is, information that the reader does not already possess—the "informativeness" of the text to the reader depends critically on whether she or he possesses the vocabulary and prior knowledge presumed by the text as well as the linguistic (lexical and syntactic) facility to interconnect those embedded propositions as intended. Research shows that lapses in both are characteristic of younger and weaker readers (Keenan & Brown, 1984; Kintsch, 1988, 1998; Kintsch & Keenan, 1973; Kintsch, 2005; O'Reilly & McNamara, 2007).

Research on how best to foster vocabulary development generally cites three key instructional components: (1) clear, direct explanation of the word's basic meaning so as to anchor it properly in memory; (2) attention to how words are structured semantically and morphologically, which usefully

includes activities or exercises designed to focus the students' attention on particular features of the word(s) in study (e.g., Carlisle, 2010), and (3) experience with the words in multiple diverse contexts, particularly including text, so as to refine and enrich knowledge of the word's meaning and usage. Though often omitted from overviews on best practice (e.g., Nagy & Townsend, 2012; National Reading Panel, 2000), research suggests that assistance in unpacking the syntactic relations of text should be added to this list.

Both comprehension and learning from text, including learning and deepening vocabulary, can be taught by use of strategies that encourage children to structure their understanding (build a mental model) and then to use inferential and problem-solving skills as they read text that requires those skills to be activated (see e.g., National Reading Panel, 2000; Elleman, 2017, for a recent meta-analysis).

Building Knowledge and Vocabulary K–3

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Summary of Findings

In general, a disconnect exists within the *Units of Study* program between the overall *A Guide to the Reading Workshop* (in which some research is cited), the recommendations for teaching in *If… Then… Curriculum: Assessment-Based Instruction,* and the units themselves. In particular, many of the suggestions and recommendations in the latter documents are based on research findings that are not cited in the former. There are occasions where research is apparently used in practice, but not cited in the *Guide*. More troubling is the insufficient translation of the research studies into recommendations for practice e.g., the detail of Beck & McKeown's work on teaching vocabulary (e.g., Beck, McKeown, & Kucan, 2013) as noted by the rather scant directives to teachers about how to teach/encourage children to learn unknown words.

Here are some specifics: even though the teaching units frequently suggest the use of these strategies, there are *no* entries for "(text) structure," "inference," or "comprehension monitoring/metacognition" in the *Guide to the Reading Workshop: Primary Grades*, and only a single page reference to "metacognition" in the *Guide to the Reading Workshop: Intermediate Grades*, which curiously advises *against* engaging children in metacognitive discussion (though monitoring is very frequently mentioned as a useful strategy in *If… Then… Curriculum*, and is widely recommended in the units). Thus, although many of the recommendations for teaching have a basis in research, they not only do not map very obviously onto the recommendations for teaching, but also, in one instance ("metacognition"), are actually contradictory.

Throughout the materials, there is reference to specific teaching strategies for learning and comprehension. These are important (see, e.g., NRP, 2000; Oakhill & Cain, 2012). However, there is scant reference to the research itself or details about the strategies that are supported by research. (There is only a general mention of the effectiveness of instruction in reading strategies in the introduction to Unit 2 in grade 1, with reference to NRP, 2000 and Pressley, 2000.) In these instances, because the relevant background literature is not cited, teachers cannot access the literature that would enable them to fully understand the nature and importance of these strategies so that they would be in a position to model them and encourage/support their use with children. These lapses are particularly worrying in a program that leaves so much to the teacher. Rather than being mutually exclusive, knowledge and strategies can be mutually supportive and form a virtuous circle.

In sum, a research-based focus is partially present in the *Units of Study*, but with such inconsistent application that it causes three main issues:

1. The failure to support research-based practices leads to insufficient support for teaching and learning vocabulary, for building new topic knowledge, and for practice.

2. The research base, and specific practices in particular, should be clearly linked to the recommendations and practices in the teaching units in order to support teachers' understanding of their importance. They are not.

3. Although many of the teaching units utilize findings from research, the research itself (or even the general area of research — e.g., inference skills) is not mentioned in the *Guides* or the online "Research Base Underlying the Teachers College Reading and Writing Workshop's Approach to Literacy Instruction," again failing to support appropriate implementation of the practices that grow out of this research.

In all cases, an opportunity to support teachers is lost. This is especially problematic for new teachers and teachers working in schools with a large number of high-need students.

Review Process

This evaluation reviews the links between the research base for the teaching of knowledge and vocabulary via reading comprehension (and, to a lesser extent, the use of knowledge and vocabulary in writing) based on an analysis of the grades K–3 levels of *Units of Study.* The review included reading the guidebooks for both the primary and intermediate grades (*A Guide to the Reading Workshop*, *If… Then… Curriculum*, and *Reading Pathways: Performance Assessments and Learning Progressions* for grade 3 only) and looking through the four units for each of the four grade levels. Also included in the review were the online resources "Research Base Underlying the Teachers College Reading and Writing Workshop's Approach to Literacy Instruction" and "Comprehensive Overview: Units, Tools, and Methods for Teaching Reading & Writing."

In addition, the evaluation reviewed the four writing workshop guides at each grade level to assess how children were taught to use their developing vocabularies and knowledge bases in their writing projects.

Findings

1. **There is insufficient support for teaching and learning vocabulary, for building new topic knowledge, and for practice.** One general issue is that there is insufficient support for teachers to translate the research findings into effective practice. For instance, the *Guide to the Reading Workshop: Primary Grades* mentions the challenges of vocabulary in reading books, but then there is little indication as to how teachers might deal with these challenges. The *Guide* states: "By levels G/H/I/J readers can begin to handle some Tier II words, which may not be part of their oral vocabulary. So now nonfiction books teach new words about topics" (p. 43), and "readers must grapple with unfamiliar vocabulary and figurative language and develop strategies for understanding…" (p. 45). However, it is not really clear how the children's learning will be supported (the books do not do the teaching), except that there is encouragement to use inference and metacognition (p. 45), which is in line with Cain, Oakhill, & Lemmon (2004), and an example of how strategies might be used in synchrony to support vocabulary learning. Later in the *Guide*, teachers are simply instructed that they should "introduce new vocabulary words and concepts" (p. 137) but are not given any explicit information about how best to do this (and might be tempted to simply define new words for the children). This lack of specificity means students are not assured of getting exposed to vocabulary that would greatly enhance their learning. The importance of explicit and rich vocabulary instruction is, for instance, highlighted by McKeown & Beck (2004).

2. **There is a "disconnect" between the overall *Guide to the Reading Workshop* (for both primary and intermediate grades) and the recommendations for teaching in the units and *If… Then… Curriculum*.** Research relevant to particular teaching principles was often delineated clearly in the online "Research Base…" resource, but did not appear in the printed *Guides*. This information should be included as a fundamental part of the background materials in the *Guides*. For example, the "Research Base" document has a section on the research relating to interactive read-alouds and talks about the importance of modelling practices, strategies, and habits. However, this research is not mentioned in the *Guides*. Teachers need much more support in understanding the various skills and strategies, and their relevance for supporting comprehension (with lots of examples), before they can be expected to model and support these strategies in their teaching. The lack of this support is particularly troubling in a program that leaves so much to teacher discretion. In particular, many of the recommendations are based on research findings, but those cited in one are not cited in the other. Thus, although many of the recommendations for teaching have a basis in research, they do not map very obviously onto the actual guidance for teachers, and in one instance (metacognition), the recommendation is actually contradictory to the specific program guidance.

3. **Research-based strategies for comprehension are reflected in the teaching materials, but citing alone is not enough. The *Guides to the Reading Workshop* should include explanations of the research, and the teaching units should refer to and reiterate these explanations, but this is not**

currently the case in the materials. The research on the value of teaching strategies for understanding and learning and for vocabulary development (e.g., Shanahan et al., 2010), as well as the work of Duke and Pearson (2002) and Allington (2012) on the integrated use of multiple strategies, is important. A critical point made in the *Units of Study* is that it is not enough to use strategies (which can be done fairly mindlessly in some instances); one must have a range of strategies at one's disposal and be a strategic reader.

4. **In general, the importance of the role of inference in children's text comprehension and knowledge representation is underrepresented and underexplained.** Coverage of inference for text comprehension, knowledge, and vocabulary acquisition is brief and rather vague (with only a few exceptions) and is disproportionally sparse given the amount of research on the importance of inference skills for comprehension, learning, and vocabulary development**.** There is a wealth of evidence to show that inference skills are (causally) related to reading comprehension in children (for an overview, see Elleman, 2017; Oakhill, Cain, & Elbro, 2019). However, the research on inference is not cited anywhere in the materials, and inferential reasoning does not get many mentions. Exceptions include Unit 2 in both grade 1 (p. 19) and grade 3 (p. 97), but the coverage is very brief and rather vague. Furthermore, where the role of inference in comprehension and learning is mentioned, the emphasis is on predictive inferences (especially in grade 3 materials). Other sorts of integrative inference (within a text, integration of text with prior knowledge) are rarely discussed, even though work with mature readers shows that inferences necessary for text integration are made during reading whereas (merely) elaborative inferences (such as predictive inferences) are not. Predictive inferences might be a useful tool to help children consider the gist of the text so far in order to entertain hypotheses about what might happen (and would also be useful in writing tasks to add suspense), but other types of inference (i.e., necessary inferences) should also be considered.

   In relation to vocabulary acquisition, the role of inference skills (in relation to the use of context) should be made clear (see, e.g., Cain & Oakhill, 2014). There are, throughout all grade levels, several allusions to the use of context to support learning of new words, but the mechanisms by which this might occur (i.e., inference from context) are not properly considered.

5. **The *If… Then… Curriculum* resource (Primary, pp. 8–17) contains lots of research-based ideas about how to encourage the learning of topic knowledge vocabulary from books, but as in the areas noted above, teachers need a better understanding of the research itself, and more information and guidance as to how to implement the recommendations that can be derived from the research, with examples and modeling.** The recommendations are not linked to the research base. Beck and McKeown's work on teaching vocabulary is mentioned in the "Research Base Underlying the Teachers College Reading and Writing Workshop's Approach to Literacy Instruction" document but not in the *Guides* or *If… Then… Curriculum*. There is variability between grades, though; it seems that the teaching units for grades 2 and 3 provide more examples and models for teachers. Furthermore, there are several recommendations in the units that teachers should encourage the use of morphological decomposition to support vocabulary development (though there is no explicit mention of morphology!). However, there is no explicit guidance for how teachers are to do so, and the relevant research findings are not mentioned in the program (see, e.g., Goodwin & Ahn, 2013, for a meta-analysis).

6. **The importance of lots of talk to develop reading comprehension strategies and use read-alouds as a way to develop vocabulary is rightly emphasized, and Beck and McKeown's "Text talk" paper (2001) is cited as support for these methods. What is lacking is a more detailed explanation of what constitutes helpful text talk.** It would seem that teachers would need to read Beck and McKeown's paper to understand better how to direct and manage appropriate talk about text. More generally, the importance of talk for language development (including vocabulary development) and later reading (e.g., Carroll, Bowyer-Crane, Duff, Hulme, & Snowling, 2011) should be considered.

7. **Use of other strategies (monitoring, use of text structure) for comprehension and knowledge acquisition is very widely mentioned throughout the materials, at all grade levels (K–3), with**

large sections of the grade 3 units taken up with lessons on text structure. But there is scant attention to what children should do if they recognize comprehension issues. As was the case with inference skills above, the research into the effectiveness in supporting comprehension and learning is not mentioned or explicated. There is good evidence that comprehension monitoring skills are important for children's reading comprehension (e.g., Baker, 1984; Garner & Kraus, 1981/2; Oakhill, Hartt, & Samols, 2005; for a summary, see Oakhill, Cain, & Elbro, 2019), and have a causal influence on comprehension development (Oakhill & Cain, 2012). It is also clear from the research that children need not only identify comprehension difficulties or failures while they are reading, but also that they need to know what to do about those difficulties/failures (Baker, 1984; Garner & Kraus, 1981/2). In the section on topic knowledge/expertise of *If… Then… Curriculum*, the emphasis seems to be on learning for retelling or teaching (another child), but that assumes that the child is aware of and can identify gaps in his/her own learning as they are retelling, which may not be the case.

8. **In the case of the research on monitoring for understanding, the relation between research and recommendations for practice in these materials seems bizarre.** As mentioned above, there is a single page reference to "metacognition" in the *Guide to the Reading Workshop: Intermediate Grades*, which actually advises *against* engaging children in metacognitive discussion, whereas, in fact, the teaching units are full of recommendations to use metacognitive strategies and discussion to support both vocabulary learning and knowledge acquisition!

   There is also mention of using text structure to support comprehension and knowledge acquisition throughout the materials. The recommendations on use of text structures are grounded in research, though, again, the relevant research is not cited (see e.g., Cain, 2003; Shapiro & Hudson, 1997; for a summary, see Oakhill, Cain, & Elbro, 2019). There is also causal evidence for the role of text structure understanding (e.g., Hebert, Bohaty, Nelson, & Brown, 2016; Oakhill & Cain, 2012) and from work on supporting learning with graphical models of text structure (Elbro & Buch-Iversen, 2013). None of this research is cited or explained as justification for the methods proposed, however.

9. **Use of imagery, acting out/role play/body language, and gesture are often suggested by *Units of Study* as a means to support children's understanding and to help them identify gaps in their understanding/learning.** As with other strategies, these suggestions are supported by research findings, although the research is not mentioned or referenced in the materials (see e.g., Berenhaus, Rusted, & Oakhill, 2015; Glenberg, Gutierrez, Levin, Japuntich, & Kaschak, 2004; Marley & Szabo, 2010; Oakhill & Patel, 1991; Rubman & Salatas Waters, 2000; Sadoski, 1985). But again, if the research is not cited or explained, it does not support teachers' broader understanding.

10. **The *Units of Study* focus on breadth of vocabulary development but ignore depth of vocabulary development, which has an important research base for comprehension and knowledge acquisition.** In the *Units of Study* materials, the focus is firmly on using context to work out the (relevant) meaning of a word — more or less its definition. Thus, the recommendations for increasing children's vocabulary all seem to focus on *breadth* of vocabulary knowledge (i.e., number of word meanings known) and, to some extent, finding definitions of unknown words (e.g., Unit 4 in grade 3 has a section on "Defining new vocabulary words"). However, there is now a substantial research base on *depth* of vocabulary knowledge and reading comprehension, and the way in which depth of vocabulary in particular can be used to support text comprehension in general and inference and text integration in particular. Thus, an important aspect of vocabulary development is to encourage children to think about associations between words and their broader semantic networks, not simply their definitions. The work on breadth vs. depth of vocabulary should be considered, together with the implications for teaching (see e.g., Ouellette, 2006; Tanenbaum, Torgesen, & Wagner, 2006; Oakhill, Cain, & McCarthy, 2015; Oakhill, Cain, McCarthy, & Field, 2012). It is completely absent in these materials or guidance.

11. **The chapter on reading nonfiction in *If… Then… Curriculum* does not reflect the research on the importance of activation of prior knowledge for learning (see e.g., Beker et al., 2016), and neither does it reflect the research on how children can best be taught to learn and integrate new knowledge (e.g., chapter 1 of Campbell & Campbell, 2008).** There is some reference to teaching and using different text structures to support learning at various grade levels, but the

research on the use of graphic organizers to support understanding and learning (see e.g., Elbro & Buch-Iversen, 2013, Campbell & Campbell, 2008) could provide more detailed recommendations for teaching (not only for reading but also for planning written compositions).

12. **Quantity of reading is important to improve knowledge and vocabulary, and the program recommends a volume of reading throughout the grades; the fact that students must constrain their volume of reading to their current Fountas and Pinnell level, however, means lower-ability students will not be exposed to rich sources of knowledge.** At all grade levels, the *Units of Study* program recommends that children should be encouraged to read as much as possible. The research base for the value of volume of reading is well-documented in the "Research Base Underlying the Teachers College Reading and Writing Workshop's Approach to Literacy Instruction" document, but not reiterated in the *Guides*.

    The trade books supplied to support the teaching provide many opportunities for challenging and increasing children's vocabulary and also provide opportunities to build knowledge in areas that children will find interesting. The recommendation that children should be encouraged to compare and contrast information gleaned from different books is consistent with the recent burgeoning of research on multiple-text comprehension (e.g., Britt, Goldman, & Rouet, 2012), but the research base for the teaching recommendation is not mentioned (even in the "Research Base" document). This is a miss. Moreover, there is no way of knowing what texts students choose. As students are constrained in their choices to their reading levels, lower-ability students will not have the opportunity to compare and contrast information gleaned from books rich in content.

13. **Although both knowledge and vocabulary development could be supported by writing (e.g., encouragement to think about how knowledge should be structured/explained when writing an expository piece, choice of appropriate vocabulary, variation in vocabulary when writing), these issues don't seem to be covered.** Tellingly, "knowledge" does not appear in the indexes of either level of the *Guide to the Writing Workshop,* and vocabulary is only referenced in relation to a section on ESL readers. Surely native speakers also need support and encouragement to vary, refine, and expand their vocabularies through writing? At each grade level, there are units that include writing to inform, but these sections do not seem to be well aligned to the research that addresses building knowledge and vocabulary. There does not seem to be any reference to seminal theories of writing development in children, and how those might be used to inform recommendations for teaching writing skills, including knowledge representation and knowledge transformation (e.g., that of Flower and Hayes: see e.g., Hayes, 2012).

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Building Knowledge and Vocabulary 3–5

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Summary of Findings

The purpose of this review is to evaluate the instruction offered in the *Units of Study* program for grades 3–5 as it supports students' vocabulary and knowledge development. As detailed below, vocabulary support within the program suffers from an overreliance on and weak instructional support for implicit vocabulary acquisition by readers. This is coupled with insufficient support of core meanings, of similarities and differences in the meanings of near-synonyms, of spelling, and of morphology. With respect to knowledge building, the program includes a number of units that are nominally focused in informational texts. However, with two exceptions, the instruction and activities for those units are focused on the texts' structure and on reading strategies at the expense of texts' content and language. Students are expected to read daily, which is a big plus, but both vocabulary and knowledge development are hampered by the fact that their reading materials are individually self-selected reading materials and leveled. Students frequently read different books. Thus, independent reading is rarely an opportunity for students to build knowledge and vocabulary. Where students silently read books that are different from their partners and chosen without regard for the theme of the mentor texts or foci of the lessons provided by the teacher, the promise of independent reading opportunity for building knowledge and vocabulary is variable and weak. While all students are short-changed when knowledge-building opportunities are missed, students who enter school having had fewer opportunities to grow academic knowledge and vocabulary depend critically on such opportunities to catch up and move forward.

Review Process

This evaluation was based on analysis of the grades 3–5 levels of the *Units of Study* program. Materials studied for the review included the three guidebooks that accompany all three grade levels of the intermediate grades program (*A Guide to the Reading Workshop: Intermediate Grades*, *Reading Pathways: Performance Assessments and Learning Progressions*, and *If…Then…Curriculum: Assessment-Based Instruction*), the four reading program unit books for each grade level, and much of the online material associated with vocabulary and informational texts, including the optional bookshelves for the children. In addition, all of the mentor books for grade 3 were read, as were those for grades 4 and 5 that were associated with units on informational text.

Findings

1. **Vocabulary: On the plus side, the program offers lots of top-level emphasis and encouragement to the students for accumulating vocabulary as they read, including creating word banks (jars, lists, logs) of new words they encounter while reading. There is also encouragement to use more precise or academic vocabulary in their conversations and writing. On the minus side, the program offers little, whether to teachers or to students, beyond such top-level endorsement with respect to the whys or hows of appreciating or acquiring vocabulary power.**

   Inferring from context. Inferring the meanings of words from context is the principal means that is encouraged and instructionally supported in the program. Research attests this to be an insufficient strategy for acquiring the meanings of new words when students are reading texts that are connected by nothing other than their reading level. Averaging over their many studies of incidental vocabulary learning, Anderson and Nagy (1992) estimate that the likelihood of

students' learning a new word encountered in reading material is approximately 1 in 20, depending on the difficulty of the concept represented by the word as well as the informativeness of the context and the overall difficulty of the text. A number of other researchers have also shown that such learning also depends strongly on the reading proficiency, comprehension skills, and vocabulary with which the reader approaches the text (e.g., Stahl & Fairbanks, 1986; Joseph & Nation, 2018). Through a meta-analysis of studies spanning grades 4 through 11, Swanborn and de Glopper (1999) affirmed these reservations and added that the likelihood of learning new words through reading also varies strongly with students' grade level (see also Fukkink, Blok, & de Glopper, 2001), with children in fourth grade only a quarter as likely to learn new words as those in 11th grade. In short, research documents that children in the grade-range for the *Units of Study* materials and, more so, those most in need of expanding their vocabularies are especially unlikely to do so by inferring meanings from context as they read. Within the *Units of Study* program, specific demonstration of and instruction on how to use textual clues to discover the meanings of unfamiliar words are scant and, where provided, disturbingly unhelpful, with teachers executing derring-do reaches into the text and somehow, from the many candidates seemingly available, divining a more or less related meaning for the word and declaring victory (See showcase examples in Grade 3, Unit 1, pp. 141–154).

Context and Core meanings. Sometimes children don't notice that they don't understand a word; other times, they just gloss or skip it (Stahl, 1991). However, research shows that even when elementary students (grades 2–6) are required to derive the meaning of unfamiliar words, they often pick up only part of the meaning, too much of the context, features that are incorrect, or combinations thereof (Fukkink, 2005; Fukkink & de Glopper, 1998). Consistently, research has long shown that providing a correct core definition of a new word hastens its acquisition. Moreover, doing so is as helpful for weaker as for stronger readers (National Reading Panel, 2000). The core meaning of a word is essentially the definition that good dictionaries strive to provide (although, for children, it may well be variously paraphrased, contrasted, or illustrated). It is its core meaning that the word will contribute to any context in which it arises. In complement to anchoring its core meaning, research shows that building a working and lasting understanding of a word is hastened by attention to its use in multiple, diverse contexts (for more recent discussion of the cognitive interplay of these two approaches, see Bolger, Balass, Landen, & Perfetti, 2008; Cain, Oakhill, & Lemon, 2004).

The emphasis on self-selected and individually leveled reading materials within the *Units of Study* curriculum precludes straightforward implementation of the definition + multiple exposure approach; one solution would be to add some interactive, instructional word games (see, e.g., Cain, 2007). Contextual enhancements aside, a more troubling weakness of the *Units of Study* curriculum is that attention to or support of the core meanings of words is bizarrely neglected. There is no suggestion that teachers provide core meanings in inference demonstrations even to affirm the astuteness of their own guesses; the students' word banks are only reviewed as partners share them with each other; neither appreciation nor regular use of dictionaries, whether paper or electronic, is encouraged or supported, and the very notion that words have specific, defined meanings is, at best, poorly conveyed to students.

Appreciating the value of less common words. At least as disappointing as the overreliance on inferring meanings from contexts is the failure to help kids see ***why*** it's worth learning the meanings of less common words. Less common words are labeled as "tricky." The children are told that it's okay to skip unfamiliar words if they're too much work. Just as discouraging, when the curriculum does offer a "synonym" for a less common word, what is offered is typically the nuclear meaning only (e.g., *terrain = land*). A sensible child might well ask why s/he should bother learning the "tricky" word when s/he already knows a perfectly straightforward synonym.

The problem here is that, as so oft and so correctly said in discussions of vocabulary, there are very, very few true synonyms in the English language. *Look* does not mean the same thing as *ogle, peek, stare*, or *glare*. *Say* does not mean the same thing as *mumble, whine, concede, lecture, rhapsodize, boast, blather, rejoin,* or *insinuate*.

Appreciation of the distinctions as well as the commonalities between word meanings is critical for vocabulary development. Moreover, readers and writers must come to appreciate that the value of less common words is that they enable the expression of meaning that simultaneously is more precise and requires fewer words. Building such semantic awareness is invaluable for writing as well as reading for it serves to refine the meanings of familiar words even as it hastens the acquisition of new words. And again, students with weaker vocabulary profiles are especially in need of such help. Without it, their reading and writing abilities will be stunted, while their peers continue to develop richer and deeper communication abilities.

Word parts. The reading curriculum lends little attention to spelling-sound correspondences or to correct spelling, whether in the explanatory material presented to teachers or in the discourse written for teachers to present to students. The inattention to correct spelling is short-sighted, as complete secure spelling is shown to affect vocabulary growth as well as be important for writing and to the speed and security of word access (Burt, 1996; Holmes & Castles, 2001; Fischer, Shankweiler, & Liberman, 1985).

Among the few sessions within the program in which the use of spellings for word identification is focal (Unit 1, Session 14 of grade 3), the guidance provided shifts opportunistically between thinking about secondary spelling-sound correspondences, syllables, free (stem) morphemes, bound morphemes, and contextual clues. Unfortunately, the session offers only a few examples of how to use word parts to figure out new words, and some of the syllables look seductively like stem morphemes. Students (and teachers) will need to pay close attention lest they take *terrain* to mean "*terrible storm*."

In the explanatory material written to teachers, the importance of attending to morphology is mentioned across manuals and grades. Notwithstanding such mention, however, morphology is barely addressed in the actual lessons for students.

In regard to prefixes, there is a suggested small-group lesson in the grade 3 session on using textual clues to interpret words (Unit 1, Session 15) that suggests the teacher present the derivational prefixes *un-*, *de-*, *in-*, *im-*, to show the kids how all mean "not" (the last two presumably as in, e.g., *impatient* but not *important*, and *inedible* but not *instruction*). There is a full session for grade 5 students (Unit 2, Session 6) that, by its title ("Inquiry into Using Morphology of Words to Tackle Tricky Vocabulary"), is devoted to derivational morphology. Yet all that this session offers on morphology is a mini-lesson on picking apart the word *indestructible* (not, destroy, able), and a highlighted exchange between two kids who conclude that the only thing they can glean from the word *obscure* is that it begins with *ob-* so it must mean something bad because "*obstacle* is a bad thing"; this insight is celebrated and charted. Regarding suffixes, the derivational prefixes in the grade 3 (Unit 1, Session 15) mini-lesson are complemented with a set of four suffixes, *-ed*, *-ing*, *-ly*, *-s/-es*), of which, puzzlingly, all but one are inflectional, all are Germanic rather than Latin, and all are beneath level — at least as spelling units, which is how they are framed.

Overall, the treatment of derivational morphemes is a serious lapse in this program. It is repeatedly stated in the materials for the teachers that derived words make up 60% of academic words. Except for the *ible = able* in the grade 5 session, derivational suffixes are hardly mentioned. Nor is any chart or explication of affixes and their meanings or functions provided to teachers on paper or online.

Young readers of English need to become comfortable with Latin and Greek prefixes and their meanings. Equally important, they need to become comfortable with how derivational suffixes change the grammatical form class of words (e.g., nouns into verbs: *-ize* (*energize*), *-fy* (*magnify*); adjectives into nouns: *-ness* (*happiness*), *-ity* (*density*); and verbs into nouns: *-ance/ence* (*difference*), *--tion/sion* (*consideration; conclusion*), *-ant* (*ignorant*), *-ment* (*excitement*). The form-class transformations afforded through derivational suffixing stand as the most ubiquitous and powerful ways in which academic language gains its informational density and lexical efficiency. Arguably, grasping the system is also promoted through at least an introduction to the roots of

derivationally complex words, including some that are stand-alone words in English (e.g., *transformers, conform, inform),* and some that generally are not (e.g., *transfer, confer, defer, reference odiferous*…; *produce, reduce, introduce, educate, conductor, deduction*,...).

Latin- and Greek-based words are not "tricky" words. They are essential and unavoidable building blocks of informational text, and learning about them significantly promotes vocabulary growth (Bowers, Kirby, & Deacon, 2010; Goodwin & Ahn, 2013), learning that is not supported by the *Units of Study*.

Vocabulary coverage. There is little guidance to teachers with respect to how to work with words in the mentor texts. How many words a child might learn through her or his own reading depends on the amount and level of the texts that s/he chooses to read as well as on the discipline with which s/he attends to the spellings and meanings of new words encountered therein. Even so, given the tools and guidance provided by the curriculum on learning the meanings of new words, vocabulary expansion should not be expected to be a strong outcome.

2. **Knowledge: There are some good units, but there are more units that are not so good. In the former, there are lots of texts (including duplicates and reproducibles) about the topic to which the kids themselves have access. The tasks in which the kids are engaged (e.g., building timelines, debating) actually require the kids to read and interpret those texts. For the less good units, by contrast, there are no common texts for the children to read — instead, all students are reading books of their own choice from the selections available at their designated level.**

   There are several units that lend focus to informational or nonfiction texts of various kinds at each grade level. Some may be quite good, where the qualification relates to the extent to which all of the kids are actually reading texts tied to the topics and activities of the unit during their reading time as distinct from, for example, only sampling or hearing read-aloud snippets during lessons. The grade 4 unit on the Revolutionary War is one: it offers lots of different recommended texts for students on different aspects of the war, which, if read by students, would promote growth of knowledge and language across texts. The grade 5 unit on Argument and Advocacy also has lots going for it. In this unit, close reading is motivated by search for supporting information as well as inconsistencies or disagreements across texts. This unit is also exceptional in that it includes a number of relevant online texts that teachers can opt to use with all students.

   Reading broadly and deeply on a given topic is how students build the knowledge structures that support understanding (Kintsch, 1994, 1998), but doing so depends on access to relevant texts as well as a classroom dynamic that encourages and guides their reading. That being so, it is worth noting that the texts and topics in the *Units of Study* program are optional. Toward creating a classroom library with a workable inventory of topic-related texts, suitable books are sometimes available for additional purchase but, for the most part, curation and population of the classroom library is left to the individual teacher.

   By contrast, in terms of building knowledge, the other informational units, including Units 3 and 4 in grade 3, and Unit 2 in both of grades 4 and 5 (all units focused on informational text), fall short. In each, "close readings" focus on strategies and text structure rather than content. One can't help but wonder how the instruction in these units might be understood or the assignments realized by children reading whatever books of whatever level, but the problem is worse than that. Unable to help with the language, information, or arguments in the particular texts that each student separately happens to be reading, the lessons end up trying to offer instruction on how to deal with informational texts in the abstract by focusing on generic difficulties of informational texts and on skeletal text structure rather than on the content and informational structure of the texts.

   With respect to the goal of knowledge-building, the problem with focusing on text structure and main ideas extends beyond accessibility concerns: Reading is not the inverse of writing (Kintsch, 1994, 1998). The writer begins with a complex, multidimensional, richly interrelated complicated

meshwork of knowledge that must be related in a linear string of words. As such, the author may usefully begin by outlining what s/he wishes to say through a skeletal organizational framework. The reader's job, by contrast, is to take the author's linear string of words and build a multidimensional, interconnected meshwork of information that as nearly as possible captures what the author had in mind. If instead the reader sees the comprehension goal as one of reducing all that the author has written into some skeletal organizational framework, she or he forfeits the very information that the author sought to convey through that framework.

It has been said that every informational text is an argument. Such texts variously present antecedents and consequences, facts and conclusions, parts and wholes, trends and extrapolations, points of view and dilemmas, conflicts, or resolutions, etc. As such, authors of an informational text have three jobs. The first is to present the building blocks (the premises, facts, viewpoints, …); the second is to convey how those building blocks lead to the author's main point (the consequences, whole, conclusions, dilemmas,…); and the third is to provide a sense of the certainty, credibility, or tenuousness of both the building blocks and the point or conclusion the author educes from or attributes to them. This is not normal conversational fodder as it requires meticulous clarity of reference and of connections throughout.

In short, the difficulty of Informational text is owed to the fact that it presents language, information, and modes of thought that rarely arise in conversational or narrative discourse. Further, the comprehension of informational text depends critically on the readers' possessing the language (including vocabulary), knowledge, and reasoning abilities that the author has presumed (Kintsch,1994 1998). Where students work to extract the skeleton rather than scrutinizing the content of an informational text, they lose on two levels. On the first level, they forfeit the knowledge and understanding that the text at hand was meant to convey. On the second level, they forfeit the language, information, and logic that will be helpful or even necessary for comprehending texts they will face in the future. It is precisely weaknesses in the latter that are signaled in U.S. high school students reading ability (ACT, 2006; Council of Chief State School Officers, 2010). Also worth mulling, NAEP reports the percentage of U.S. twelfth-graders who are at or above grade level ("Proficient") in Civics, Geography, Science, and History to be 24%, 20%, 22%, and 12%, respectively. It really is important to engage children in closely reading and interpreting informational text so to promote their ability to read, understand, and learn from it.

On top of such issues as discussed above, it is dispiriting that the overarching valence of the *Units of Study* lessons on informational text and complexity is decidedly negative. Major teaching points include: informational texts are complex; they tend to have multiple main ideas which are often hidden and hard to identify; they tend to be full of long complicated sentences, tricky words, and irrelevant inserts; it is wise to dismiss information that seems unimportant; and it's fine to skip hard words. While students who are already strong readers may be less affected by these cautions, students who are struggling won't receive the encouragement and support they need to tackle complex informational text. Achievement gaps will grow as some students embrace informational texts (and the knowledge they gain from it) while others avoid it.

3. **Reading Materials and Practices: The program includes a number of very good mentor texts. Further, that the program is designed to require independent reading every day is wonderful. With an eye toward student growth, however, these activities warrant strengthening as they rarely offer an opportunity for students to build knowledge and vocabulary.**

There are some very good mentor texts for all of these units, although it is not clear how the mentor texts and their conceptual and linguistic challenges will be read and unpacked with the kids because the books are used exclusively as read-alouds. Teacher guidance on how, and even whether to use, the mentor text is not clearly defined. Often, teachers are instructed to read only excerpts from the lovely mentor texts, not all of the text. Also worth noting is that a couple of the mentor texts are nearly identical to one another, and, as such, are missed opportunities: asking students to read on the same topic is not the same as asking them to read nearly the same texts.

For example, in grade 3, two of the mentor books on frogs overlap as do two of the books on penguins; all four are by Bobbie Kalman.

Students frequently read different books from each other—self-selected and individually-leveled texts—silently during reading time. Thus, independent reading is rarely an opportunity for students to build knowledge and vocabulary. While students are expected to discuss what they read with a partner, it's easy to imagine that the discussions can be minimally productive given that they are reading different books and guessing the meanings of different words. For younger and weaker readers, silent reading is not as productive as reading aloud to a listener. Reading aloud pressures the reader not to skip or gloss the hard parts. Reading aloud with a partner, e.g., turn-taking, is socially fun and educative when readers are asked to help each other read and think as they move through the text. That can't happen when students are reading different books.

Toward supporting vocabulary and syntactic growth alongside, the research on contextual diversity (e.g., Rosa, Tapia, & Peria, 2017) underscores the value of topical text sets, starting with easy overviews and moving to the more complex language and information of subtopics. The *Units of Study* encourage teachers to recommend topical reading sets. But recommending is different from providing and letting teachers see how magically well they work. Aside from offering powerful support for reading development itself, topical units also afford ways of offering instruction that is concrete, interesting, and helpful to whole-class instruction even when not all children are reading the same texts.

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English Learner Supports K–5

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English learners, having grown by 60% over the past decade, represent the fastest growing student group in the U.S. Many immigrant families have moved outside of urban centers, and now more than 55% of teachers have at least one English learner in the classroom, yet less than a third of teachers have any substantial training in how to effectively support these learners in simultaneously learning academic content and language (Quintero & Hansen, 2017). Despite the immense potential of English learners to academically thrive and to enrich the school community, accountability evidence shows that they have been and remain academically underserved. ELs face a persistent and sizable achievement gap, which is especially felt with regard to literacy skills including reading comprehension. For example, the 2011 National Assessment of Educational Progress (NAEP) demonstrated that 71% of grade 8 ELs scored below the basic level in reading, compared to 25% of their English monolingual peers. 2017 data showed a 31-point achievement gap between non-EL and EL students in grade 4 reading. Yet, according to the National Council on Teacher Quality's 2014 report, less than a quarter of teacher education programs provide any guidance for how to support ELs struggling in early reading. A body of research has consistently shown that students who don't attain reading proficiency by the elementary grades are far less likely to graduate high school and to attend college (Hernandez, 2011; Lesnick, Goerge, Smithgall, & Gwynne, 2010). Elementary reading proficiency is foundational and predictive of academic success in general. Unfortunately, the reading gap between ELs and their non-EL counterparts continues to grow as they progress through the grades.

One way to ensure that ELs have equitable access to well-prepared, effective literacy instruction is to provide teachers with educative and high-quality curricula that clearly articulate and embed effective pedagogical guidance *throughout* the learning materials as a form of professional learning for teachers who are addressing a range of student needs and assets (Davis et al., 2017). Research has demonstrated that educative curriculum materials promote positive learning outcomes (Grossman & Thomas, 2008; Hill & Charalambos, 2012; McNeill, 2009). This might be especially true for teachers who have received inadequate preparation to support EL academic success. Learning materials need to orchestrate teacher learning opportunities that are centered not only on literacy development, but also on the grade-level conceptual understandings, analytical practices, and academic language use specific to content areas that EL students need to master (Heritage, Walqui, & Linquanti, 2016).

Note on EL Supports

EL supports refer to instructional moves and materials designed to provide ELs access to core curriculum skills and content when instruction is overwhelmingly in English. These supports (often referred to as "sheltered instruction") include use of visuals, graphic organizers, physical activity and presentations, encouragement and supports for verbal participation, and primary language support such as brief translations and definitions of unfamiliar words in the students' home language. Supports also include targeting language objectives along with content objectives, activating prior knowledge and building background knowledge needed to access texts, pointing out cognates, using very clear and explicit instructional language, and moderating rate of speech to facilitate comprehension. EL supports can occur at the micro level (teacher moves) and at the macro level, for example a curriculum designed strategically and coherently to develop language, literacy, and content understandings over time (Walqui, 2019).

Practically, EL supports are essential to providing equitable access to educational opportunity if students are receiving core academic instruction (e.g., language arts, science, mathematics, social studies) in English while not fully proficient in English. According to Supreme Court decisions dating to the early 1970s, students *must* receive instruction that is comprehensible and meaningful. Providing EL supports is one way of accomplishing this. In a classroom with ELs, one would observe

instruction that is all in English, except for occasional use of students' home language for brief explanations or definitions. There would be prominent use of visuals and graphic organizers; instruction and instructional materials would be very clear; all students would be included and encouraged to participate in ongoing classroom activities. Because, as mentioned above, the majority of content-area teachers do not have the pedagogical knowledge to support ELs effectively, guidance for supporting these learners must be built into the architecture of a curriculum designed to attend to the diversity of student needs.

Summary of Findings

The research-based focus for EL support is barely present in the *Units of Study* materials. The reading and writing workshops in the curriculum do not effectively guide teachers to help ELs acquire the skills and knowledge necessary to attain high levels of literacy development. There is some generic guidance provided in each strand's overall guide, some of which is valid, but other parts are contrary to the research base. The program makes some claims that are not supported by any known research and are, in fact, contradicted by research. Aside from the guidance in the overview books, there are no specific EL supports grounded in the activities, in the lesson plans themselves, or in other printed materials. The online pdfs "Supports for English Language Learners" (identified as "Support for CA English Learners" on the website), appear to contain specific ELs support for the activities in the lesson plans but, in fact, do not.

Students who have yet to master English would have *very limited access* to best practices for supporting ELs' literacy development in the *Units of Study*. The more fundamental problem is the materials don't provide access to best practices in literacy instruction, particularly in the beginning and early stages of literacy development to build from. On top of this, ELs will also not have access to best practices in language development through use of the *Units of Study*. Language development is integral to literacy development, particularly for ELs, although they are distinct from each other. This review focuses on literacy development specifically.

Review Process

Components reviewed include the EL support sections in *A Guide to the Phonics Units of Study*, *A Guide to the Writing Workshop* (primary and intermediate grades), and *A Guide to the Reading Workshop* (primary and intermediate grades). Also reviewed were:

- the Phonics Units, including: the series overview of *Units of Study in Phonics*; Grades K–2 and Grade 1 Unit 1 phonics in detail; Grade 1 Units 2–5 phonics; and *Small Groups to Support Phonics* more cursorily;
- "Comprehensive Overview: Units, Tools, and Methods for Teaching Reading & Writing;"
- *Reading Pathways: Performance Assessments and Learning Progressions* (3–5);
- *Writing Pathways: Performance Assessments and Learning Progressions* (K–5); and
- *If… Then … Curriculum: Assessment-Based Instruction* (grades K–2, 3–5).

Finally, the "Supports for English Language Learners" pdfs were reviewed—15 online pdfs, six for the reading units, grades K–5, and nine for the writing units, grades K–8. (The website identifies these as "Support for CA English Learners.")

Findings

1. **The EL supports in the Phonics strand of the *Units of Study* is sparse. The support that is provided runs counter to the best evidence on how to support children, including ELs, in the beginning stages of literacy development. Moreover, it underestimates the challenge teachers and children face in teaching and learning to read English, and confounds language acquisition with learning to read (see p. 40). The two are not the same thing.** The *Guide to the Phonics Units of Study* has three pages in a section called "Supporting English Language Learners

in Phonics" (pp. 40–42). The units, sessions, and mini-lessons themselves have ZERO called-out EL supports. The assumption seems to be that teachers will take guidance provided in the guide (and the "Supports for English Language Learners" pdfs, available only online) and work on their own to apply it throughout the units.

The more fundamental issue is that the basic instructional model in the program is flawed, as it fails to highlight the critical importance of learning the grapheme-phoneme mapping system for learning to read English. (While not the focus of this review, it is worth noting the program is flawed for non-ELs as well.) The National Literacy Panel report (August & Shanahan, 2006), subsequent research reviews (e.g., August, 2018; Goldenberg, 2008, 2013), and intervention studies (e.g., Ehri, Dreyer, Flugman, & Gross, 2007; Vaughn et al., 2006) have shown that ELs benefit from similar reading instruction approaches as do non-ELs—phonological awareness, phonics, fluency, vocabulary, and comprehension instruction. These should not be considered exclusive of all other instruction, since ELs will need additional supports, but they are foundational for early literacy instruction *in general.*

For ELs specifically, additional supports and considerations are needed, due to the fact that ELs are learning to read and write in a language they are simultaneously learning to speak (and understand). Nonetheless—or actually precisely because children are learning to read in a language they are simultaneously learning, systematic and explicit instruction is vital. Phonics instruction and opportunity to practice (along with phonological awareness) are especially important for beginning reading because they provide access to the principal gateway to word recognition, which in turn is vital for early and continued reading success. As another important review of EL research noted, "focused and explicit instruction in particular skills and sub-skills is called for if ELs are to become efficient and effective readers and writers" (Genesee, Lindholm-Leary, Saunders, & Christian, 2006, pp. 139–140).

The *Units of Study* program fails to highlight the importance of explicitly and systematically teaching ELs phonic skills (decoding *and* encoding) and to make teachers aware of the complex relationship between *literacy development* and *oral language development*. Instead of informing teachers of the importance of explicit instruction and providing them with appropriate instructional and curricular guidance, the program provides general guidance, advises social integration of ELs, and embeds phonics instruction in children's writing ("within-writing support is critical … for English learners since it allows meaning to drive the phonics," *A Guide to the Phonics Units of Study*, p. 41). It recommends teaching practices that are entirely *un*systematic. Teachers are advised, e.g.:

> if you're writing interactively about animals, you'll want pictures of an elephant, a panda, a fish, and a crocodile ready to show your English learners for when you practice those words. (*A Guide to the Phonics Units of Study*, p. 41)

At best, this will not help beginning readers learn to read; at worst, it is a recipe for confusion for both teachers and students.

Social integration is certainly necessary, and reinforcing phonics when children write (if done appropriately) will help them cement their understanding of the grapheme-phoneme system. But these are not replacements for robust and systematic phonics instruction. This program provides essentially no support in this regard.

There are numerous examples in the *Units of Study in Phonics* of how EL issues and needs are given scant or no attention. Here are two:

- Teacher scripts tend to be word-heavy, and verbal instructions have no or inconsistent visuals. In Unit 1, Session 1, Extension 2 of grade 1, the teacher "invite[s] children to introduce themselves to someone sitting nearby" using only oral instructions. There is no modeling or other support at all to allow English learners equal access. A stronger approach would have included something such as this: Model this routine with a student:

Teacher says, "My name is_____." "What is yours_____?" S replies. Student then repeats to teacher, who answers. The teacher would then have two students demonstrate how they introduce themselves to the other, while the teacher makes sure it's done correctly and others watch. Then students practice in pairs as the teacher roams, listens, and checks for understanding.

- The scaffolds and prompts suggested to teachers are often unhelpful and don't recognize the limited literacy knowledge of students at the beginning stages of learning to read and write. In Unit 1, Session 2, Extension 1 of grade 1, "Using environmental print as a spelling resource," a scenario is presented where a student isn't sure she spelled the end of "summer" correctly. T "showed her that the ending of the word "paper" ("environmental print" in the room) could help her." This would be a hard task for English speakers; it would be excessively challenging for ELs. Why not instead first have the student isolate (say) the ending sound of "summer" that she thought was incorrect… that would be /r/. Then direct student to the illustrated alphabet chart or cards on the wall, and ask: "Can you find the word that goes with the /r/ sound?" then… "What's that letter?" Note also that the scenario in the unit does not teach the child any strategy that would transfer to other comparable situations: the teacher simply pointed to "paper" and "showed her that the ending of the word *paper* could help her." The teacher gave no clue as to how she picked out "paper" from all the other "environmental print" in the room. This would be unhelpful to both ELs and non-ELs for handling future similar challenges.

There are some accurate and useful ideas and suggestions in the phonics guide, although they do not have anything to do with phonics per se and need qualification to be fully accurate. For example:

- Literacy skills in the primary language generally lead to "quicker transfer of these skills to a second language" (p. 42 of *A Guide to the Phonics Units of Study* grades K–1). Although this can be true given effective guidance, the program offers no insight into systematic ways to encourage positive early literacy transfer in emerging bilingual students. While phonological awareness in the learner's first language/s predicts the ability to acquire literacy in both the first or primary language/s and the newly acquiring language, the faulty implication is that this transfer of literacy skills is an automatic process. In fact, there are many factors that interfere with students' ability to transfer, including negative transfer, wherein the learner generalizes syntax, spelling, phonology, or pragmatics of her first language to the second language (Bialystok, 2002; Brice & Roseberry-McKibbin, 2001). Positive transfer may also be hindered between languages with very different orthographies (e.g., Chinese and English) or phonologies. This suggests the need for teacher guidance on how to familiarize themselves with aspects of the primary language features (e.g., phonology and spelling in the L1) to help ELs gain metalinguistic awareness that supports additional language literacy development (Helman, 2004; Fillmore & Snow, 2000).

- Predictable routines and classroom structures are particularly helpful for ELs. However, it is not just the predictability of the routines and classroom structures that is helpful, but also the effectiveness of those routines to support literacy development.

2. **The reading and writing workshops provide brief (although not as brief as the phonics strand) EL support, but (a) the EL supports will not compensate for the absence of a sound instructional model with systematic and explicit instruction, and (b) none of the supports are integrated into the printed materials themselves.** As with the materials in *Units of Study in Phonics*, the basic problem in the reading and writing workshops is that the instructional model is not well-suited to ELs. In the absence of a sound instructional model, "English Language Learner supports" provided by the program will be largely irrelevant. Numerous reviews, and the studies comprising those reviews, demonstrate that effective instruction for ELs, in literacy and other content areas, has a great deal in common with effective instruction for students in general (August, 2018; August & Shanahan, 2006; Cheung & Slavin, 2005; Genesee et al., 2006;

Goldenberg, 2008, 2013). Research-based elements of effective instruction—e.g., clear content-based goals and objectives, well-designed and focused lessons that support students in building disciplinary knowledge, modeling, clear input, checking for understanding, opportunities for practice and extension, formative feedback—are necessary although not necessarily sufficient. ELs almost certainly need additional supports and a degree of explicitness that fully proficient students are less likely to need. But the research-supported elements named above are the foundation for effective EL instruction.

The *Units of Study for Teaching Reading* and *Units of Study for Teaching Writing* acknowledge elements emphasized in EL research as being important. But in the early grades, lessons layer on meaning-driven instruction that will dilute the necessary focus on the alphabetic principle and grapheme-phoneme mapping in the early stages of reading and writing development. Researchers cited in this program's bibliography (e.g., Marilyn Jager Adams, Linnea Ehri) have demonstrated that this mapping system is the principal means of word identification when reading (decoding) and converting speech into print when spelling and writing (encoding). Yet the majority of advice and teaching examples in the reading units are antithetical to these findings, e.g.:

> [The teacher] coached kids to rely first on meaning, by searching the picture and thinking about what was happening, and then to decode the print. She continued… assessing how children called upon the syntax and meaning on previous pages to support their new predictions. This work is especially powerful for supporting English language learners' growing understanding of language structure and for helping them connect that to the words on the page. (*A Guide to the Reading Workshop: Primary Grades*, pp. 108–09; for another example, see p. 106, bottom of first column.)

"Meaning" is, of course, critically important for *all* learners—and, in fact, is the whole point of reading and writing—but its relative importance in becoming literate varies developmentally and by learning task. In the early stages, the alphabetic principle and grapheme-phoneme mapping are fundamentally important. As students are developing these skills, vocabulary, background knowledge, comprehension strategies must be simultaneously developed—but not as a central part of reading instruction. This is the flaw in the above vignette. There is no research supporting the above assertion that this approach is "especially powerful" for ELs. In fact, the assertion is contradicted by a study that is cited—misleadingly—in the same *Guide*. In arguing that "learners need access to books that allow them to do a high volume of high-success reading" (p. 18), the *Guide* cites a finding by Ehri et al. (2007) that the best predictor of reading growth for ELs participating in a tutoring program for struggling readers was "the proportion of texts read at an independent level (98% to 100% accuracy)" (p. 441).

What the *Guide* fails to mention, however, is that the ELs from the Ehri et al study who became able to read texts with such a high degree of accuracy *were in a tutoring program based on systematic instruction in phonological awareness, phonics, fluency, vocabulary, and comprehension*. This is contrary to the instruction advocated in the *Units of Study* program, which promotes teaching students to "draw not only on phonics, but also on meaning when they encounter difficulty" (*A Guide to the Reading Workshop: Primary Grades*, p. 106). This and other means for deciphering the meaning of unknown words becomes more relevant once students have reached a certain level of reading proficiency. But in the early stages, using context and meaning as the teacher "coached" the students to do in the example above interferes with reading development.

The "Supporting English Language Learners" sections of the *Guide to the Writing Workshop* and *Guide to the Reading Workshop* offer general advice that is sound as far as it goes, e.g., the need for clear and consistent classroom routines, procedures, and instructional language; the importance of repetition and practice; contextualization; use of visuals and gestures; instruction/support in grammar, vocabulary, and figurative language; instructional planning with an ESL instructor; providing support in learning academic English; extending ELs' language.

The problem is there is no known research to support—and much to contradict—the claim that "The wonderful thing about a workshop is that it is incredibly supportive for English language learners…" (*A Guide to the Writing Workshop*, p. 86). The instructional model could have been strengthened somewhat if the program included "dictation" as a prominent instructional component. As it is, dictation is accorded a paragraph in the *Guide to the Phonics Units of Study* (p. 56), but the topic does not come up again. There is a robust literature on the value of *encoding instruction*—guiding students to transform spoken speech into written text—in other words, dictating words or longer pieces of text (Weiser & Mathes, 2011). There is no known research specifically with ELs on the benefits of dictation. However, for students who are learning the phoneme-grapheme system while simultaneously learning the language (and perhaps even for students in general), it is a reasonable hypothesis that encoding practice with individual words then larger stretches of text will also help promote the complementary processes of reading and writing development.

The second problem with the workshop sessions and activities is that there is no explicit support provided in the actual lesson plans themselves. There is no guidance in the printed curriculum to support instructing students who are English Language Learners *directly* and *concretely* tied to the activities, lessons, mini-lessons, and assessments in this program.

3. **The online "Supports for English Language Learners" pdfs from the website presumably would provide support and session-by-session EL guidance aligned to the California ELD Standards, but claims are misleading and they do not.** Each pdf contains an "English Language Development Toolkit" section that provides general teaching strategies similar to what is provided in the *Guides* discussed above. The "Toolkit" covers topics such as ensuring comprehensible input, building on prior knowledge, providing access to concepts and strategies, and structuring oral language practice. These offer some generally sound and research-based guidance on scaffolding instruction, but there are two issues. One is that this is not an English Language Development toolkit. If it were, it would include much more specific strategies and instructions for teaching and helping students acquire necessary language forms and functions. Or, at a minimum, it would give explicit guidance on how to provide support in developing ELs' foundational literacy skills while also developing English language skills. The *Units of Study* program in no way substitutes for a robust English Language Development program. The second issue is that the next to last page in the "Toolkit" contains a table called "Reference Guide to English Learner Supports in the *Units of Study*." There is very little in the table that will help teachers locate EL supports in the curriculum, aside from the final row of the table, which gives the pages for the "Supporting English Language Learners" section of the *Guides* (described above). With the exception of three or four pages, the other entries in the table have nothing to do with ELs or supporting ELs.

   Following the "English Language Development Toolkit," each pdf then has a section entitled "Detailed Discussion of ELD Supports in all Sessions." These are identified as "Lenses for Planning this Session with English Language Learners in Mind" and consist almost entirely of teaching strategies or recommendations for each unit, session, mini-lesson, and activity that are already built into the units, sessions, mini-lessons, and activities. For example, these are listed as already in the grade 1 lesson in Unit 1, Session 1:

   - Keep your teaching trim, tight, and engaging.
   - Break down content into more manageable, meaningful chunks to provide support.
   - Use think-aloud strategies to demonstrate your thinking process for students.
   - Build and/or use anchor charts with students and continually refer to them as you teach.

   And this is given as an "Additional recommended support":

   - Provide structured language stems or frames for English learners to refer to during instruction as well as independent and group work.

   No materials or models are provided for teachers to use.

It is unlikely that a teacher with limited experience teaching English learners, or even an experienced teacher needing to develop his/her own materials and instructional procedures for each session and activity, as the *Units of Study* demand, would find many of the strategies outlined here sufficient to support language and literacy development in a meaningful way. For example, the pdfs developed to fulfill the California requirement for ELD support advise teachers in every grade to use sets of books so that students are provided multiple exposures to the same vocabulary and schema (see for example, *Supports for English Language Learners* Grade 3, p.11). While this is generally a good practice, the curriculum must be intentionally designed so that there is a roadmap for how to move students to increasingly greater comprehension of what they are reading and writing about. There is no such guidance in this curriculum.

Finally, there is some ambiguity about the extent to which the online pdfs are geared toward a California audience, and even if they are, whether there is any actual alignment between California's ELD standards and the *Units of Study* program. The pdfs are identified as California-directed on the website ("Support for CA English Learners"), but the title of the documents themselves is "Supports for English Language Learners." The documents make a single reference to "CA ELD Standards" (p. 8), and the "alignment" consists of listing the "ELD standards aligned for this session" that follow the "Detailed Discussion of ELD Supports" for each session.

Since each session contains numerous activities, it's difficult to know what part corresponds to which of the standards listed. Moreover, if teachers are unfamiliar with the standards (which teachers outside of California will certainly be), it's difficult to know how useful this will be to them.

4. **Vocabulary Development: While the guides do provide some general guidance on developing vocabulary, few strategies are provided for doing this effectively.** The guides to the reading and writing workshop does not provide teacher guidance for the kind of systematic, intensive, and consistent vocabulary instruction, including the vocabulary needed to describe, analyze, and understand text structure that ELs need and research supports (Francis, Rivera, Lesaux, Kieffer, & Rivera, 2006; Nagy & Townsend, 2012; Zahar, Cobb, & Spada, 2001). The teacher guidance in systematic vocabulary development is insufficient for ELs, and not backed by research. For example, in Unit 1 of grade 2 (p. 65–66, Second Grade Reading Growth Spurt), guidance for supporting vocabulary includes leaving Post-its on pages where teachers think students are missing word meanings, asking students to use the Post-its to identify words that "mean something new," and sketching what they think the word means on the Post-it. This guidance provides no systematic strategy for identifying which words students might be struggling with, no guidance for the teacher on strategically teaching vocabulary that is *essential* for understanding the text or central to the discipline, and advocates a shoddy strategy for supporting ELs in understanding and incorporating new words.

   Another section in the *Guide to the Reading Workshop* suggests building a juicy word wall with words that are "interesting, fun to say, or useful to know" (p. 124) to encourage students to use the words in writing and conversation. Again, this strategy may not focus students' attention on the words that are essential for understanding the texts they are reading (August & Shanahan, 2006; Silverman & Hines, 2009), or words that frequently appear in texts on the same topic (August & Shanahan, 2006; Carlo et al., 2004; Lesaux et al., 2010), nor result in students incorporating those words into their working lexicons. In addition, this kind of random vocabulary development may even detract from effective reading comprehension.

   Robust vocabulary instruction requires a much more strategic and systematic approach. For example, students can be provided with text sets that center on a single academic topic and contain a variety of supplemental resources (videos, websites, infographics) that help build vocabulary and conceptual knowledge. In addition, the texts and resources in the text sets can be ordered in such a way to support vocabulary and knowledge building over time. Texts can be annotated with student-friendly glossaries or visual cues to support vocabulary development. Peer conversations can be structured and scaffolded in such a way that students are able to talk about

texts using essential language and vocabulary and supporting greater comprehension (Lesaux et al., 2010; Vaughn et al., 2009). Teachers can engage students in games and activities that will provide more exposure to new words. *None of these systematic vocabulary-building activities are built into the* Units of Study.

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Text Complexity Introduction

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