

# Meeting Primary Literacy Needs Post-Pandemic: Maximizing the Instructional Power of Early Reading Texts

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## Abstract

There is no question that elementary teachers are feeling added burdens regarding early reading instruction since returning to the post-pandemic classroom. Much discussion is occurring about lags across all areas of language and literacy development. At present, teachers have few empirical resources upon which to draw. This article considers the 2022 nine-year-old reading results from the National Assessment of Educational Progress as well as voices from virtual primary teachers in relationship to instructional recommendations made prior to 2020. Now more than ever, it is imperative that early literacy include not only foundational skills development, but also direct instruction in comprehension, vocabulary, and the development of background knowledge. This article proposes a way to integrate early language arts instruction across the curriculum by harnessing the power of texts written for young readers. Differentiating reader needs is always a consideration. What lies within the text is considered far less often. Walter Kintsch's (1998) construction-integration and situation models include the surface level, the reader base, and the textbase, providing a paradigm for considering how these three components can work together instructionally to help developing readers gain literacy proficiency. Young children need to practice foundational and comprehension skills in text at their decoding levels. This inquiry pairs expert genre analysis of possible informational text written at a low decoding level with three types of instruction research indicates must happen in the primary grades, illustrating instructional methodologies for a) abstract and concrete high frequency sight words, b) deep comprehension, and c) text structure.

**Keywords:** beginning readers, foundational skills, reading comprehension, instructional text, situation model, inferential thinking, critical questioning, text structure

## 1. Introduction and Literature Review

Much is being said about the lagging development of young readers over the course of the pandemic. It stands to reason that virtual instruction was not, and probably could not, be as effective as in-person classroom time. Recognizably, students who were required to continue their schooling in virtual environments may have lost out (i.e., Crosson & Silverman, 2021). In the days ahead we will likely get more information about this effect on the country's population of elementary school students. The immediate question centers on how we, as professional educators, respond to these challenges now that students are back in our classrooms full time.

It is important to not panic. We need to remain responsive as opposed to reactive. These challenges are not taking place in one classroom. It's a national phenomenon. We would do well to remember that many current variables remain similar to pre-pandemic conditions. Not only do issues affecting students, teachers, and schools remain, many are exacerbated. The child poverty rate went from 12% in December, 2021, to 17% in January of 2022, and has disproportionately affected Black and Hispanic students. Poverty, and increased poverty, has snowballing effects (D'Souza, 2022; Fry-Bowers, 2020). More of our young students may have fewer experiential, vocabulary, linguistic, and language skills than before. (Crosson & Silverman, 2021). Of course, all literacy instruction should be research-based and implemented by knowledgeable practitioners. Thus, it's wise to consider what the most current reports indicate in light of recommendations made pre-pandemic.

### *1.1 Where Are We Now?*

To start thinking about what should happen, we can draw upon two significant sources. The reading portion of the 2022 National Assessment for Educational Progress (NAEP) (NCES, 2022) measures what our readers can do. But the voices of teachers are also important. Learning about their experiences with virtual instruction informs next steps.

### 1.1.1 NAEP Reading Results

In 2022, NAEP conducted a special Covid administration of reading and math assessments. On the 2019 NAEP reading test only 34% of fourth-grade students scored at or above proficient (NCES, 2019). Results of the 2022 NAEP reading administration showed a five-point drop from 2020 to 2022 among nine-year-old students. Representing the biggest NAEP reading drop since 1990. What's more, lower performing students scored less well than their higher-achieving peers (NCES, 2022).

It's important to understand what NAEP reading does and does not measure. Primarily, NAEP measures reading comprehension, and includes much informational text. There are six total passages. Three are literary: fiction, poetry, and literary non-fiction. Three are informational: exposition, argumentation, and persuasion. NAEP utilizes an item mapping tool to identify each type of comprehension question. These are broken down by whether they are literary or informational and whether the expected competency is basic, proficient, or advanced. For example, grade 4 basic- "Recognize an explicitly stated detail in an informational text." Compare that to a proficient level question- "Based on information from two expository articles, choose two reasons why the problem described in the articles is hard to solve" (NCES, 2022). The NAEP questions assess students' level of proficiency with *text negotiation* to determine whether students can analyze what the question is asking and match it to the appropriate text-based evidence.

### 1.1.2 Teacher Voices

The 2022 NAEP scores may also be reflective of an increased number of nine-year-old students who lack appropriate foundational skills. Students in grade four now, would have transferred to virtual learning mid second-grade. Recent work on the effects of virtual instruction during the pandemic indicate gaps across all areas. While comprehension received less attention during virtual instruction, mimicking pre-pandemic statistics, students also lost instructional time and effectiveness across critical foundational literacy skills. Crosson and Silverman (2021) conducted a study of virtual reading instruction for emergent bilingual readers during the pandemic. Fifty kindergarten through second-grade teachers representing ten states reported that early literacy instruction across all skills decreased when they shifted to virtual education. The researchers also uncovered a large discrepancy between early foundational reading skills and competencies related to vocabulary and comprehension. Pre-pandemic, over 80% of participating teachers reported teaching awareness of sounds in speech, decoding, and word identification on a daily basis. During virtual instruction, the percentage of teachers reporting the same fell to between 64% and 72%. A striking contrast exists in relation to comprehension-based competencies. Pre-Covid, 76% of surveyed teachers reported teaching reading comprehension strategies daily, 71% reported directing daily discussions about the meaning of text, and 72% reported engaging in daily vocabulary work. During virtual instruction, those fell to 38%, 35%, and 42% respectively. Notice that those pre-pandemic percentages were already lower than foundational skills percentages, echoing previous findings (i.e., Northern & Petrilli, 2018). Finally, two practices supporting both foundational literacy and comprehension suffered significant decreases: ensuring that students had opportunities to read went from 90% to 40%, and supporting writing for audience or purpose went from 66% to 12% (Crosson & Silverman, 2021).

Through interviews, teachers reported they did not perceive their instructional effectiveness to be as high during virtual instruction, highlighting hindrances such as ineffective technology and lack of peer-to-peer interaction. They also consistently reported a lack of small group time. This is especially significant because the focus of much primary reading instruction and intervention occurs within differentiated small groups (Wanzek, et al., 2018). Indeed, Crosson and Silverman (2021) highlight pandemic decreases of elements critical to early literacy interventions: small-group or one-on-one, daily for 30 minutes or more, and very targeted, intensive, differentiated instruction (Foorman et al., 2016).

### 1.2 Where Were We Pre-Covid?

While impacts of the pandemic are not insignificant, we must also consider research recommendations made pre-covid. Those still remain true. In their article *Improving Reading in the Primary Grades*, (Duke & Block, 2012) review the earliest mandates for more comprehension instruction. Beginning in 1999 with the publication of *Preventing Reading Disabilities in Young Children* (Snow, et al., 1999) and reiterated by the National Reading Panel (NRP) (2000), there have been calls for change in primary instruction. Those documents were followed by the release of the Common Core State Standards (CCSS) in 2010. All strongly recommend or mandate a) more comprehension instruction in elementary reading programs, and b) specifically that young children be exposed to informational text during instruction. Duke and Block (2012) indicate that since 2000, very little attention has been given to comprehension, vocabulary, or conceptual knowledge in the primary grades. Indeed, the time devoted to these activities has actually decreased. What has increased is a focus on word reading skills, and those efforts have transferred to test scores. The authors posit that the problem is short-sightedness. In their immediate efforts to raise primary reading scores, schools do not focus on the long vision of how instruction will impact overall literacy proficiency. They state, "The neglect of informational text in the primary grades constitutes a missed opportunity not only to build social studies and science knowledge through text but also to

build knowledge about this type of text” (Duke & Block, 2012, p. 60).

Echoing this, in 2018, the Fordham Institute published an enlightening survey of 1200 English Language Arts (ELA) teachers, considering whether ELA teachers between 2012 and 2017 made progress toward the three shifts in practice outlined by the common core. They define those shifts as: (a) regular practice with complex text and its academic language, (b) reading, writing, and speaking grounded in evidence from texts, both literary and informational, and (c) building knowledge through content-rich curriculum (Northern & Petrilli, pp. 5-6). Between 2012 and 2017, 34% of elementary teachers (n=417) reported choosing less text that provided students with multiple strategies for extracting the author’s message, and spending more time on out-of-text discrete skills. In 2012, 37% of elementary teachers reported using a text-based curriculum. By 2017, this decreased to 30%, indicating an increased shift toward a skills-based, word level reading curriculum and even less emphasis on the text-based programs that would easily incorporate the comprehension and vocabulary instruction recommended by Duke and Block (2012).

### 1.3 How Do We Reconcile?

This leaves elementary teachers in a bind. The pandemic did not alter the fact that a debate still exists about *how* to teach early literacy. However, the question does change a bit. How do we address all of the requisite literacy skills as efficiently as possible given the current post-pandemic context of schooling? We absolutely must consider that students did not just ‘lose’ in reading. They lost in content, they lost in the building of background and experiential knowledge, they lost in language and vocabulary development. All of these elements are critical to the types of reading comprehension tasks expected of students (i.e., Castles, et al., 2018; Foorman et al., 2016; NCES, 2022). These new challenges make it difficult to decide where to focus instruction. To be sure, students need foundational literacy skills. But that’s not the *only* thing they need. Crosson and Silverman (2021) indicate that students will also be lacking in critical language and vocabulary competencies that directly impact literacy growth. These findings only confound those same deficits Duke and Block reported in 2012.

It’s important to not lose sight of our overall goal. In kindergarten, we begin the process of insuring that every child can become a contributing member of society, ideally taking advantage of the rights afforded to all citizens. To do so, we must help students attain all requisite literacy proficiencies. These are not just about reading the words on a page. They are competencies that proficient readers possess: thinking critically with text, understanding how text works, and being able to critically evaluate authors’ messages. As Duke and Block (2012) indicate, they need to be built alongside foundational literacy skills. Failure to do so leaves instructional gaps in the critical areas of vocabulary and deep comprehension as well as background knowledge and experience.

We need to consider how to present foundational reading instruction without the short-sightedness to which Duke and Block (2012) refer. There is significant evidence to support teaching decoding and word level skills simultaneously with comprehension strategies. In their article *Ending the Reading Wars: Reading Acquisition from Novice to Expert*, Castles, et al., (2018) state that “the challenge of reading is to learn to associate arbitrary visual symbols with word meanings” (p. 8). They further indicate the need for the development of both morphology and syntax. This requires abstraction and inference that can easily be taught early on as part of both reading comprehension and orthographic instruction. In this way, understanding morphology and vocabulary builds a link between word level skill and comprehension, because it “allows for information and ideas to be integrated across phrases and sentences” (Castles et al., p.30).

Castles et al., (2018) also posit that the process of comprehension requires the understanding of how cohesive devices such as pronouns and connectives work. These words are often taught very early as high frequency and/or non-decodable sight words. Even so, the comprehension of such devices requires abstraction and inference skills that must be taught. Consider two simple sentences: “*Mom sent Carol to the store. She bought bread.*” (Russell & Scott-Roller, in press, p. 63). What does the reader have to do to create meaning? The reader must determine whether “she” is mom or Carol. How do readers determine this? The reader must use context to create a linkage across the two sentences, inferring that it is Carol who went to the store and therefore Carol who purchased bread. Thus, “she”, refers to Carol. Further, the reader must also make inferential background knowledge connections to understand why Carol went to the store, to say nothing of the connection the reader must make to understand that Carol purchased bread with some form of currency (Russell & Scott-Roller, in press).

### 1.4 Common Assumptions

Although these linkages seem obvious, if you are comprehending this article, you are a proficient reader. Your brain automatically fills in both prior knowledge gaps and the requisite inferences across words and sentences: Mom needed bread; one buys bread at a store with currency. Carol purchased it and took it home to mom (Russell & Scott-Roller, in press). It is dangerous to assume young readers will do the same. Their acquisition of orthographic knowledge, fluency, and vocabulary does not automatically ensure the creation of necessary cognitive linkages. Struggling and developing readers process each detail as a discrete, stand-alone piece of information because they are not skilled at making

inferential connections and have not developed mental models for text (Meyer & Poon, 2001). However, the necessary inferential thinking can be directly and easily taught alongside word level skill. Simply asking who “she” is and how you know that from text, effortlessly adds an element of necessary inferential comprehension.

Before we dive into thinking differently about foundational skills and critical comprehension instruction, it’s also important to address things that *do not* automatically lead to comprehension because we cannot assume that developing readers simply make those linkages.

#### 1.4.1 We Have to Teach Phonics First

Teaching decoding without the requisite comprehension instruction could leave an instructional and developmental gap. We know reading, writing, speaking, and listening occur together (Adams, 1990; Clay, 1979). From the outset of their document, Castles et. al. (2018) tie word-level instruction to the larger goal of making meaning. They state, “The high confusability of written language together with limitations on memory means that this strategy would be very unlikely to scale up to a full vocabulary. Instead, children need to learn to *analyze the printed forms* of words and map these onto meaning” (Castles, et al, 2018, p. 8). The authors imply there is little point to phonetic instruction without relating it to meaning-making. Pulling apart the requisite inferences and background knowledge for the *Carol* example makes this point clear.

#### 1.4.2 Comprehension Always Follows Oral Reading Fluency

While phonics and oral reading fluency are strong predictors of literacy proficiency and comprehension, they are a necessary but not sufficient component. The development of oral reading fluency is not just about words per minute. It also includes prosody, or expression, which by nature, indicates some level of comprehension. Unfortunately, in our skills-driven era, oral reading fluency is often translated into a measurable words per minute score. The addition of inflection and expression actually *slow down* reading rate because prosodic oral reading is dependent upon both comprehension and interpretation in spoken language. Further, it is possible to orally word-call with or without prosody and lack comprehension (Seidenberg, 2013), particularly when students know that words-per-minute is the primary measure. While Solari et.al, (2017) indicate that combining strategies is pivotal in providing an integrated reading program, most fluency studies concern themselves with the predictive validity of fluency on comprehension (Fuchs, et al., 2001). However, although Uysal and Bilge (2018) found fluency a statistically significant predictor of comprehension, they also discovered that while the mean rates of accuracy and speed were high (92.13 and 80.59 respectively) in informational text, the mean comprehension score was only 45.59. Results with narrative texts were similar.

To put this in perspective, Lai, et al., (2014) suggest there is actually a reciprocal relationship between comprehension and fluency. While fluency does predict reading comprehension, increased reading comprehension is actually a far stronger predictor of reading fluency. This makes logical sense. The more familiar one becomes with a text and the more one understands about that text, the easier that text becomes to orally read with prosody and inflection. If you have ever practiced before reading something orally to a group, you are aware of this. This calls into question the validity of repeated readings without purpose in an effort to increase fluency scores. Meaningful, purposeful, prosodic re-reading can increase comprehension. Word-calling for speed does not.

#### 1.4.3 We Can Save Comprehension for Shared Reading

In their summary of reading acquisition, Castles, et al., (2018) remind us that oral and written languages, while related, are different. Shared readings rely on spoken language to model comprehension strategies. This does not mean that transfer to during-reading comprehension in black and white print will automatically occur (Seidenberg, 2013). Solari, et al., (2017) recommended that primary reading comprehension extend beyond interactive and shared reading. Students need to practice the modeled reading comprehension strategies during guided reading *while* they are engaged in other fluency and word-level work. Castles et. al, (2018) make clear that understanding spoken language is a different process from comprehending print on a page for oneself, and therefore “the task of reading comprehension brings its own challenges” (p.30). This is particularly concerning in relation to informational text. While read-alouds during science and social studies will build content knowledge, vocabulary, and some understanding of how text works, students still need to practice those reading skills for themselves in similar texts.

## 2. Theoretical Frame: Early Literacy and the Situation Model

How can we provide effective early reading instruction that accomplishes the foundational skills of phonics, decoding, and fluency while also ensuring that comprehension, critical thinking, and vocabulary occur? Most elementary teachers are excellent at foundational skills instruction. We can build upon that to include comprehension-based strategies. Walter Kintsch (1998) theorized a model of proficient reading that has gained research support (i.e., Butcher, 2006; Gutierrez de Blume, et al., 2021; Prinz, et al., 2020), and can help us determine how to think about readers and text. In his *construction integration* model of reading, printed words on the page are *surface level*. Readers take in surface level

print encoding it into words and sentences. From there, the *textbase* and the *reader's base* continue to interface to construct meaning. The reader parses information from the surface level into *propositional representations* to which nuggets of meaning are attached. Whatever meaning the reader is making with the textbase is heavily dependent upon the reader's base, which is made up of all the reader's experiences, background knowledge, and vocabulary understandings. A reader creates meaning by attaching personal knowledge to the textbase as reading occurs. This integration of the readers' base with the textbase is known as the *situation model*. (Kintsch, 1998).

Even very young children can start to develop knowledge of *how text works*. This becomes part of the developing reader's base, and can be used in all future reading situations. Returning to the *Carol* example, part of the textbase which must be transferred to the reader's base is how pronouns work. The reader must understand that *she* refers to another character *in the textbase*. Gender must also be attached to the word *she* (Russell & Scott-Roller, in press). Foundational understanding about how text works is the basis for helping young readers identify differences across genre. Some things apply across all genres, such as author's purpose. However, others apply exclusively to narrative or exposition. For example, in elementary students learn story structure. It's a basic building block of narrative text. Informational text requires different foundational understandings. The rhetorical patterns of exposition are nothing like story structure. Students must develop concepts such as time-order or argument, and learn how to make inferences with text features. Once these foundational understandings are in place, we can build upon them to help readers identify genre-specific components, such as the difference between opinion and descriptive writing.

### 2.1 Critical Questioning, Comprehension, and the Situation Model

The two sentences about Carol are similar to those showing up in early readers. Small group instruction can still focus on foundational skills. By simply adding one good critical question, we can include the requisite knowledge of how text works, build vocabulary, and teach the application of accurate background knowledge.

*Who went to the store and why?*

If we ask this question, we force students to determine who *she* is. A discussion can then ensue about what the author does and does not tell the reader. The group can discuss why Carol might have gone to the store instead of Mom, how she might have gotten there and, how she bought bread.

*How do you know?*

Following the first question with this second one, developing readers can begin to determine the difference between information taken directly from the text (Carol is she. She used some form of currency to buy bread because mom wanted it.) And information we cannot take from the text but that comes from our own brains (how Carol might have gotten to the store, why mom wanted bread, what kind of currency Carol used.) Teachers can encourage re-reading to determine what we can and cannot *prove* with text. (Russell & Scott-Roller, in press).

A discussion of this nature might take three extra minutes during small group reading. And, those two questions walk students through the process of integrating the surface level, textbase, and reader's base, helping the reader differentiate between text-based evidence and prior knowledge sources while building background and vocabulary via discussion. Decoding, fluency, and word identification are practiced repeatedly as students return to the text to prove their answers. We can integrate everything at the same time and worry far less about whether we focus on phonics or comprehension.

### 2.2 English Language Arts, Core Content, and Informational Text

Duke and Block (2012) as well as Crosson and Silverman (2021) indicate the need for more time with informational text, language, vocabulary, and experiential knowledge. Importantly, many basic, real-world concepts get built through the reading of non-fiction (Lupo, et al., 2018). However, over the past two decades little has changed in the types of texts used for reading instruction, particularly in the early primary grades. By this I mean instructional reading time during which students actually have their noses in print text. This is striking because for twenty years and across multiple research and political sources (i.e., CCSS, 2010; Duke & Block, 2012; Snow, Burns & Griffin, 1998), there has been a call for young children to be exposed to non-fiction and to be specifically taught the cognitive processing strategies that will allow them to make meaning from informational text. The common core (CCSS, 2010) requires a balance of 50% narrative and 50% informational literature by grade 4. In their guidelines for publishers released in 2012, Coleman and Pimentel state that "Achieving the appropriate balance between literary and informational text in the next generation of materials requires a significant shift in early literacy materials and instructional time so that scientific and historical text are given the same time and weight as literary text" (p.5). It only makes sense that if students are to be prepared for 50% of their instruction occurring in informational text by grade four, curriculum must change kindergarten through third-grade. It's possible that some common assumptions about young children and informational text are preventing its increased usage in primary reading instruction.

### 2.2.1 Foundational Skills and Informational Text.

Reading is historically taught in the narrative, and a dearth of informational text remains in primary reading programs (Dreher, 1999). Indeed, analyses of primary reading series reveals that few selections are informational in nature (Braker-Walters, 2014; Moss & Newton, 2002). If we are to provide students with all the reading proficiencies they need, more informational text needs to make its way into early reading instruction.

This is accompanied by the belief that young children have difficulty with non-fiction text comprehension; an antiquated notion disproven in research (Kletzien & Dreher, 2004). In a recent study of content literacy instruction during literacy block, Connor, et al., (2017) discovered that children as young as kindergarten could engage in social studies comprehension leading to content knowledge learning without jeopardizing the acquisition of other skills. This is logical given that language learning processes occur simultaneously (Adams, 1990). It makes even more sense when one considers the excitement young children exhibit about their world. An ant on the sidewalk can occupy a four-year-old for ten minutes. Primary teachers are masterful at capturing that excitement in other content areas, why not in literacy? Indeed, in a study of first- and second-grade readers, Solari, et al., (2017) determined that not only could young children be directly taught informational reading strategies, but were also able to monitor their strategy use during reading.

### 2.2.2 Narrative and Informational Text Require Different Thinking Processes

Narrative and expository texts are not created equal. This means that the cognitive demands put upon readers in each are quite different. We also cannot assume that proficiency in one will automatically lead to proficiency in the other. Best, et al., (2008) discovered that among third-grade students, comprehension in narrative and expository texts was related to completely different sets of cognitive competencies. Overall, comprehension in narrative was far better across measures. The authors also discovered that students' decoding skill was the strongest predictor of narrative comprehension, while world knowledge was the strongest predictor of students' expository comprehension. The authors concluded that "children with less prior knowledge will struggle to form a coherent situation model when reading expository texts because they are not able to generate the necessary inferences." (Best et al., 2008, p 153). During primary reading instruction, children learn to read in the narrative. During health or state history, they get a textbook and are directed to read chapter one and answer the questions at the end. We cannot expect students to negotiate exposition without direct strategy instruction in a) how to glean the author's message from expository text, and b) understanding how non-fiction text works (e.g., text structures, author's choices, text features). Because expository comprehension strategies are less natural than are narrative (Best, et al., 2008), it stands to reason that strategies used with informational text should be practiced during reading comprehension instruction at least as much as narrative strategies.

### 2.3 Cross-Curricular Use of Critical Questioning and the Situation Model

What can teachers do to meet the literacy demands their students face? Research indicates that extended time in reading and writing activities is crucial (Troia et al., 2009). Re-thinking the instructional day and instructional supports may provide an avenue for responding to these challenges. It seems unlikely we will ever meet today's heightened needs focusing only on reading during the traditional literacy block. It is perhaps time to truly start implementing English Language Arts skills in a cross-curricular fashion. This paradigm shift would allow teachers to think about the entire primary day from the standpoint of differentiating supports, as they do during literacy block. Infusing informational text and the requisite comprehension strategies into guided reading would help teachers consider both word level skills and comprehension in non-fiction. Further, altering science and social studies instruction to include informational text that students can read (decode) would force the inclusion of requisite ELA strategies needed for accessing and comprehending genre-specific text types. Including time (often lost) for writing instruction is also imperative. Texts used in guided reading or core content can easily become mentor texts for writing, creating yet another opportunity to apply all requisite literacy proficiencies in a purposeful context.

## 3. Text Analysis: What Can Text Offer?

Considering the situation model from an instructional standpoint requires thinking about both the reader *and* the text because its effectiveness lies in the interplay between the two. Rawlins and Invernizzi (2018) recommend choosing text very purposefully. We often think about student needs. We think less often about what the textbase can lend to instruction. Texts written for different purposes offer developing readers varied opportunities. Using decodable or repetitive texts is common to help readers gain the requisite foundational skills. Informational texts do something different. They are often full of two things young readers need: high frequency sight words, and common content-bound words. To illustrate multiple instructional possibilities, I use a short paragraph on thunderstorms that might appear across a two-page spread in a text for young children. (Figure 1). To be sure, fiction text can offer similar opportunities. The key is to analyze and determine what the textbase holds. I chose informational text to highlight the multiple

instructional uses of similar text that might be found in small guided reading books.

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*Thunderstorms can happen at any time of the year. But they most often happen when the ground is warmest. This is usually during the afternoon in the spring and summer. Heat from the sun makes the rising warm air that storms need.*

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Figure 1. Thunderstorms Sample Text

This text is adapted from public domain websites to mimic student reader texts written either as part of a reading or science curriculum. As is true of much informational text for young children, it is full of words considered to be high frequency sight words. Thus, it is different in nature from either decodable or repetitive text. Although repetition of phrases in informational text for young readers is also quite common.

### 3.1 Foundational Skills and Early Reading

This text provides opportunities for both embedded word identification strategies that can take place during reading as well as for word identification in isolation. As a point of clarification, I use the term ‘sight words’ to mean words that readers add to their lexicon of automatically identified words to which meaning is attached. Words that become automatically identified are not all memorized. They may follow common spelling or phonetic patterns. But they may not. For example, *Can*, and *at*, have predictable one to one correspondence of letters and sounds. They are also both common phonograms. However, in the word *of*, neither sound follows a regular, predictable pattern.

#### 3.1.1 Abstract Versus Concrete High Frequency Sight Words

I analyzed this text using the Fry list of first thousand sight words most commonly occurring in print (Fry, 1980). The first noticeable feature is the high percentage of words teachers expect young readers to learn in kindergarten and grade one. Figure 1 illustrates how many of those sight words appear in this 42-word sample. The brain has different routes for helping young readers to learn automatic identification of various types of words. Notice the number of Fry words that are abstract and have little semantic meaning (*at, the, and*). Almost 50 % of the text is comprised of this type of word. They are crucial because they are among the first two hundred words most frequently found in print. They are difficult to recall in isolation because they carry little semantic meaning. Words that carry concrete meanings and lend themselves to visual imagery are easier for students to recall (*thunderstorms, summer, spring, ground*).

Ehri (2014) suggests that words become sight words (automatically identified) after repeated opportunities to engage in the process of recoding letters into sounds and *attaching a meaning* to the combined sounds. Ehri (2014) further suggests that graphophonemic analysis of amalgamating meaning, sound, and spelling is critical for automatic word recall (identifying a sight word) *and* semantic recall (knowing what that word means). This needs to happen in isolation and in context. In this text, abstract words *are* surrounded by far more concrete words that carry common meanings. And, very young readers *do* rely on context to learn words. (Rawling & Invernizzi, p. 713). Words like *sun, thunderstorms, and ground* help young readers contextualize and understand the linguistic purposes of words such as *at, of, and the*, which also aids in memory recall of non-decodable or irregularly spelled words.

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First 100 Fry Sight Words – can, at, any, of, the, time, but they, when, the, is, this, in, and, from, that (16/42 38%)

Second 100 Fry Sight Words – year, most, often, air, need (5/42 – 11.9%)

Fourth 100 Fry Sight Words – ground, usually, during, sun (4/42- 9.5%)

Fifth 100 Fry Sight words – heat, warm

Sixth 100 Fry Sight Words – summer

Seventh 100 Fry Sight words – spring

**Total words in the first Fry 300- (32/42 76.1%)**

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Figure 2. Number of Fry sight words contained in *Thunderstorms Sample Text*

#### 3.1.2 Spelling Patterns

Analyzing what this text has to offer foundationally also includes common spelling patterns. The word *make* is on the first 100 Fry list. Adding ‘s’ to words is an early primary, even kindergarten skill. Phonemic awareness, too, is a critical component of early reading instruction (Castles, et al, 2018; Foorman, et al., 2016). A popular way to work on phonetic to phonic skills is through word sorts using phonograms. The phonograms ‘-an’, ‘-un, and ‘-ound’ are present. Work with inflected endings is also possible. *Happened* is on the Fry List – 4<sup>th</sup> hundred. The word *happen* is not. However, direct instruction in ‘ed’ endings is taught in early primary. *Warm* is on the Fry List, 5<sup>th</sup> hundred. The *est* ending is not.

Direct instruction in “er” and “est” endings typically happens by grade two.

To be sure, a teacher would not choose to work on all identified spelling patterns at once. Choices would depend on the phonic, phonological, and spelling pattern skills appropriate for students at the time. Further, the text does not contain enough of these regularly patterned words. What can happen is study of a phonogram such as *-ound* using word sorts either before or after the word *ground* is identified in text. This allows for crossover opportunities between words in isolation and words in context suggested by Rawlins and Invernizzi (2018). Nor would a teacher choose to review every high frequency Fry word. However, because the words are presented in the context of sentences, readers have opportunity to identify them based on their *linguistic usage*, a component of graphophonemic analysis (Ehri, 2014), identified by Castles et al., (2018) as a critical early language understanding.

### 3.1.3 Foundational Skills and the Situation Model

Kintsch’s (1998) construction-integration model includes word decoding and identification at the surface level, but does not include attaching word meanings. Attaching a word meaning occurs when the readers’ base interacts with the textbase, allowing the reader to make sense of the author’s message. In the case of young readers, they also must learn *how the textbase works*. Pairing abstract parts of speech such referents, prepositions, and noun-markers with concrete nouns and action verbs allows the reader to utilize the textbase to increase knowledge of how the parts of text work together. Similar to Ehri’s (2014) idea of graphophonemic analysis of words, the situation model suggests the reader simultaneously examines all parts of the textbase to expand their readers’ base by combining this new information with existing knowledge.

### 3.2 Comprehension Work-Critical Questioning

Let’s return to the idea of *Thunderstorms* being purposefully chosen and consider how to infuse a comprehension element. Simply adding a critical comprehension question can actually tie together comprehension and foundational skills. Ehri (2014) recommends *repeated exposure and analysis* when learning new words. Further, frequency and volume of reading or re-reading during questioning can decrease the need to rely on context as young children begin to remember or recall words more quickly. Also note that as this word analysis happens, students will be re-reading for *specific purposes* to answer the questions, simultaneously increasing both oral reading fluency and text comprehension.

### 3.3 How to Decide the Question: Setting the “Level of Challenge”

The content of this text is so common adults, as proficient readers, might assume that comprehension automatically follows. After all, in many places in the country, thunderstorms are a common occurrence. It is likely that students have experienced a thunderstorm in their short lifetime. And, 73 % of words in these sentences are found on the Fry list. The content-bound words are also common. However, *putting them together* may not be as simple, and requires an understanding of a) how text works, and b) background knowledge of how these ideas connect. Just because the words are ‘easy’ and the topic is familiar does not mean students cannot be challenged. A common topic is an excellent place to begin helping students to think critically with text to start learning about how text works.

Consider two comprehension questions:

1. *When do thunderstorms most often happen?*
2. *Why doesn’t the author talk about fall and winter?*

#### 3.3.1 Question 1- *When Do Thunderstorms Most Often Happen?*

The first question appears to be literal, right? It is primarily a literal question. However, it has a three-part answer:

- When the ground is warmest
- During the afternoon
- Spring and summer

To answer this question, the reader must first analyze the question by zeroing in on *most often*, and decide to look beyond the first sentence. The reader then has to connect *ground is warmest* to *afternoon, spring, and, summer*. To do that, the reader needs to infer that *this* refers to the time when the ground is warmest. All three parts can be directly pulled from text and the question can be answered in the form of a literal list. However, that literal list cannot happen without the requisite inferential connections. A young reader may not make all of those connections. Consider the following possible scaffolds:

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Teacher: Read the page to answer the question, *When do thunderstorms most often happen?*

(1) Reader: (Reads the page orally)



(2) Reader: “at any time of the year.”

Teacher: “Does that answer the question of *most often*?” Where does the author talk about *most often*?

(3) Reader: “when the ground is warmest.”

Teacher: “Do we need any other parts to answer the question?”

(4) Reader: “spring and summer?”

Teacher: Why spring and summer?

(5) Reader: because the ground is warmest?

Teacher: Why is the ground warmest?

---

Figure 3. Possible Comprehension Scaffolds for Question 1

The reader may understand that spring and summer have warmer months. If not, the teacher can follow up with a known analogy such as: “What kinds of clothes do you wear in the summer?” or “When can you go swimming outside?”

### 3.3.2 Question 1 and the Situation Model

Through questioning and scaffolding, the reader was encouraged to draw upon information from the reader base to make an accurate prior knowledge connection between warm ground and the seasons. Additionally, the reader realized she had to look beyond the topic sentence, as well as include information from across two sentences to create the inference. The numerals indicate the number of times the reader returned to re-read the text. Thus, she was repeatedly practicing both high frequency and content-bound words *for different purposes*, allowing for semantic mapping in relationship to understanding how text works.

### 3.3.3 Question 2: *Why Doesn't the Author Talk About Fall and Winter?*

This question is trickier and relies on knowledge acquired through answering the first question, but can be answered with the text when accurate inferential thinking is employed. The following excerpt is adapted from an actual questioning sequence between a teacher and elementary student. The initial transcript is far longer, as the student needed repeated scaffolds to connect ideas. Take note of the ideas the teacher might have *assumed* the student connected had she not probed more deeply. As the conversation occurs, the teacher also scribes thinking place holders allowing for opportunity to make linkages across the important details.

---

Teacher: Let's answer the second question. *Why doesn't the author talk about fall and winter?*

Student: because they need to make the thunderstorm, you need warm, like spring and summer. You need hotness.

Teacher: Tell me more.

Student: (reading) “Heat from the sun makes the rising warm air that storms need.”

Teacher: What heat?

Student: Warm. The ground is warm.

Teacher: What heat?

Student: The ground heat?

Teacher: Yes. Heat from the ground. And you are saying the storm needs...

Student: Warm air to make a storm.

Teacher: That comes from where?

Student: Ground

Teacher: So why are they not as common in the fall and winter?

Student: In summer, spring they need warmness, hot heat.

Teacher: What do we know about the ground in spring and summer?

Student: That it's hot?

Teacher: Okay, so why doesn't the author talk about fall and winter?

Student: They don't happen in fall and winter.

Teacher: Why not?

Student? They need heatness.

Teacher: What kind of heat?

Student: The ground heat

Teacher: Heat from the ground. What do we know about the ground in the fall and winter?

Student: That its cold?  
 Teacher: So, what do we know about thunderstorms in the fall and winter?  
 Student: Because the storm needs the ground heat.  
 (Teacher Scribes) *Storm needs ground heat*  
 Teacher: How does that help us answer that question?  
 Student: So, it can make up a storm.  
 Teacher: Can you find me a clue in the text? What happens as a result of the ground being warm?  
 Student: (reading) "Heat from the sun makes the rising warm air that storms need."  
 Teacher: Which part is a result? What happens because the ground is warm?  
 Student: It creates rising warm air.  
 Teacher: What does?  
 Student: The warm ground.  
 Teacher: Just read me the fact.  
 Student: (reading) "heat from the sun makes the rising warm air"  
 Teacher: What happens?  
 Student: Warm air rises.  
 (Teacher scribes) *Warm air rises*  
 Teacher: So why doesn't the author talk about fall and winter?  
 Student: Because storms can only happen when its heat, only in the spring and summer.  
 Teacher: Can we mention fall and winter in the answer? What do you know about fall and winter?  
 Student: That it's cold?  
 Teacher: What does that mean for thunderstorms?  
 Student: That it can't happen because they need ground heat.  
 Teacher: And we know that the ground is what in the fall and winter?  
 Student: Cold?  
 Teacher Answer the question.  
 (Teacher scribes a sentence starter) *Because in the fall and winter...*  
 Student: It is cold.  
 Teacher: What is cold?  
 Student: The season?  
 Teacher: The season is cold, but use the clues from the text. What do storms need? What starts a thunderstorm?  
 Student: Ground heat  
 Teacher: What do we know about the ground in fall and winter?  
 Student: The ground is cold. Because in the fall and winter, the ground is cold.  
 (Teacher Scribes *the ground is cold*, adding it to *because in the fall and winter.*)  
 Teacher: So why doesn't the author talk about fall and winter?  
 Student: Storms don't happen in fall and winter because the ground is too cold.  
 Teacher: And the author is talking about?...  
 Student: How thunderstorms need rising heat from the ground in spring and summer.

---

Figure 4. Possible Comprehension Scaffolds for Question 2

### 3.3.4 Question 2 and the Situation Model

In this excerpt it is easy to see how many connections the student would not have made on her own. Much text for young children is quite short. When that happens, more inferential linkages are left up to the reader. This creates a perfect opportunity for helping students to practice inferential thinking across details. First, the student had to make inferences across pieces of the text from the textbase. Second, the student had to rely on prior knowledge of seasons from her readers' base and accurately merge the two. In so doing, she repeatedly returned to and reread the text. Her volume of reading is very high as is her interaction with the content. Beyond that, she's expanding her reader-base understanding of *how to use text* to make accurate inferences.

### 3.3.5 Asking not Telling

As teachers, we are taught to build in success and are inclined to provide students with answers. But telling students how to make an inferential connection is not the same as walking them through their own thinking. In order to move students' *own* thinking, they must actively synthesize the text. Through questioning and scaffolding this teacher helped her student to connect the textbase and readers' base in meaningful ways by pointing her thinking toward critical analysis. The level of challenge required a perfect amount of scaffolded assistance, allowing the student uncover and

make connections. For example, initially, the student's use of prior knowledge was incomplete because she indicated that fall and winter are cold. In this case, she needed to further infer from the text that because fall and winter are cold, the author is implying that the ground is colder (than in spring and summer). Giving away this information would have deprived the student of the chance to make her own cognitive connection. Furthermore, telling would have stopped the analysis. Had the student not inferred when the ground is colder, she could not have made the critical comparison between the times of year, adding both comparison skills and a realization about seasons and weather to her readers' base.

### 3.5 Comprehension Work- Using Text Structures

In the above excerpt, the teacher did not record her use of text structures. However, once the questions were answered, the teacher helped the student put together the cause-and-effect chain of events. There are many ways to graphically show how cause-and-effect works. However, I use the term *falling domino* from the Chambliss and Calfee (1998) writer's model of text structures. It is concretely illustrative. We can line dominos up on the table, push the first one down, and each causes the next to fall. Figure 5 is an illustration of how the *thunderstorms* example would text-map into a falling domino text structure.

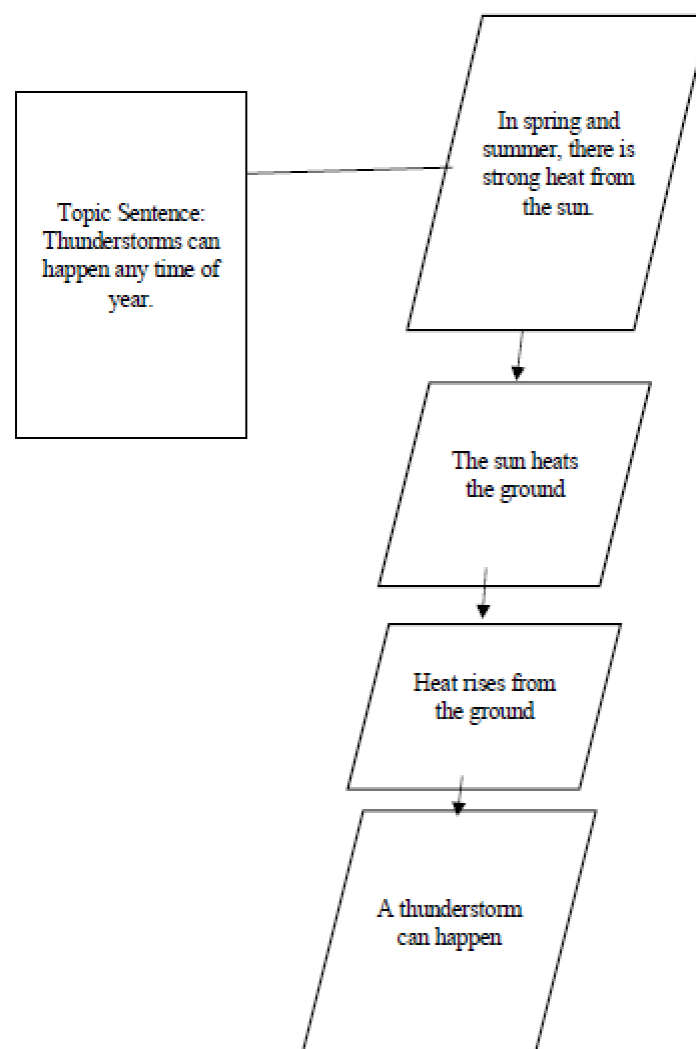


Figure 5. Falling Domino cause-and-effect text structure of *Thunderstorms Sample Text*

The trick with cause-and-effect is to get the *very first event* in the first box. Once the teacher and students build the falling domino together, it can be used check the domino backwards using the word *because*.

- (4) *A thunderstorm can happen because* (3) *heat rises from the ground?* (yes)
- (3) *Heat rises from the ground because* (2) *the sun heats the ground?* (yes)
- (2) *The sun heats the ground because* (1) *in spring and summer there is strong heat from the sun?* (yes)

Or, the word *so* can be used to read the domino forward. In either case, students are checking that the cause-and-effect sequence in the falling domino makes sense.

- (1) *In spring and summer there is strong heat from the sun. so,*
- (2) *the sun heats the ground. so,*
- (3) *Heat rises from the ground. so,*
- (4) *A thunderstorm can occur.*

Finally, adding a critical question about how falling dominoes work can help readers use their graphic to attach the *language* of cause-and-effect, solidifying new knowledge of this text structure and encouraging inferential and metacognitive awareness.

### 3.5.1 Text Structure and the Situation Model

Research clearly shows that understanding text structures assists in both reading comprehension, particularly as it relates to author's purpose, and in the expressive act of writing. However, identifying an underlying structural pattern almost always requires inference (Russell, et al., 2022). Learning to infer structure and purpose adds another piece of the textbase to the readers' prior knowledge of how text works. Cause-and-effect structure is common across both the social and life sciences. The more readers are able to identify this pattern, the more likely it will become an innate mental model for text the reader can employ when reading new or more difficult text. Creating the falling domino and checking for accuracy requires returning to the text to pull out needed pieces. This requires discussion of how cause-and-effect is written in English. It is not always written in order and the word *because* means that the *effect* comes *first* in the sentence. However, events *must occur* in order. It is impossible to create the causal linear chain without first understanding the event that starts the chain. Identifying sequences of this nature (without any sequence words) can be difficult for young readers. The falling domino text structure creates a concrete representation of how events work together.

## 4. Discussion: Overall Implications for Tackling Multiple Components of Text

This analysis considered the multiple functions of one small piece of primary informational text. It can be used for foundational reading skills, for literal and inferential comprehension, and for identifying the author's text structure. Taken together, these elements comprise all of the skills and strategies readers must employ to make sense of a new textbase. As that occurs, the reader is also expanding her existing readers' base across all those same areas. This text might initially seem a bit difficult for young readers. But consider how much teacher scaffolding occurred. Because the topic is familiar, and the teacher scaffolding was extremely effective, the student's initial challenges with word identification were mitigated, increasing both her ability and her efficacy. The student had multiple lexical opportunities to add both abstract and concrete immediately identified sight words to her word bank. The inferential ideas about thunderstorms built new knowledge of how to inference across details and of how thunderstorms occur. Creating the falling domino allowed her to analyze the text, uncovering how authors organize cause-and-effect. Each of these component parts interfaced and were added to the readers' base. This is a good way to think about close reading of challenging text. The challenge is not always about topic or readability level. The challenge is about how the parts of the text work together to carry an author's message.

## 5. Suggestions for Instructional Implementation

In the thunderstorms example, three ways of using the text were explored: foundational skills, critical questioning, and text structure. It would be difficult to carry out all three components during a 20-minute small group reading session. In a cross-curricular integration model, some things could be accomplished during small group while others are implemented during a science lesson. Take note that while the critical questions were focused on the *process* of negotiating text, they were certainly not devoid of content. Indeed, given the number of times the reader returned to the text, it is far more likely the science content will be recalled. Compare the student's development of content-based knowledge while interacting with text during questions 1 and 2 as opposed to using the text to complete a worksheet about thunderstorms. At the same time, she is also learning about how cause-and-effect works in science text.

While small group differentiation may look different during content instruction, it can still occur. Teachers frequently use table groupings or a think-pair-share model for encouraging class discussion. Similar to small group reading time, groupings are often purposefully based on what each student contributes to the group. These configurations can also be differentiated to meet reader needs during both content instruction and writer's workshop. If the text is used during small-group reading with a focus on foundational skills and basic comprehension (perhaps using Question 1). During science, students can engage close and critical reading to answer question two, beginning with table group discussion followed by a whole class debrief, prompting a third critical read to identify and create the cause-and-effect text

structure together. That falling domino structure can then be used as a mentor text for shared writing to model cause-and-effect during writer's workshop.

## 6. Conclusion

Considering instruction through the lens of combining the reader's base and the textbase gives teachers the flexibility to think about all required elements of proficient reading in a way that fully supports research-based recommendations. One thing research makes clear is the critical nature of small group differentiation to the development of early literacy proficiency. In the example above, students are able to engage in more than one small group configuration. Along with a continued focus on foundational skills (i.e., Foorman et. al., 2016), other research recommendations include more time in informational text (Duke & Block, 2012), increased proficiency with the syntax and semantics of text (Castles, et. al, 2018), increased and varied opportunities for the development of language, vocabulary, and prior knowledge (Rawlins & Invernizzi, 2018), the need for close and critical reading of text (Dougherty Stahl, 2016; Fisher & Frey, 2014), and an understanding of how text structures work (Bogaerds-Hazenberg, 2021). Combining these proficiencies requires thinking more fluidly about the instructional day. If practice is grounded in critical questioning with texts and other media across reading, writing, science, and the social studies, we provide students with opportunities to actively *apply* developing proficiencies in purposeful ways.

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