EARLY LITERACY RESEARCH

Findings Primary-Grade Teachers Will Want to Know

D. Ray Reutzel

What is the place of handwriting in early literacy? Why is letter-name learning so important? Read this article to find answers to these and other early literacy instruction questions.

Early literacy development is among the most fleeting yet vitally important phases of literacy development. All primary-grade teachers intuitively know that if young children get off to a good start, they will rarely stumble along the path of academic progression. On the other hand, if they do not, these young learners often struggle throughout their school careers (Snow, Burns, & Griffin, 1998).

My initial inclination when preparing this update of early literacy research was to share a summary of the findings of the National Early Literacy Panel (2008) and then discuss how these findings expand and update the earlier findings of the National Reading Panel (National Institute of Child Health and Human Development, 2000). But as I immersed myself in this task, to be frank, I was less than enthused about writing yet one more exegesis of the findings of these two significant but also already well-publicized national panel reports.

Instead, I decided to take a somewhat unusual approach. Having worked with teachers in schools across the nation and around the world in professional development for more than 30 years (more than 4,000 classroom observations), I am often asked questions on a variety of early literacy instructional topics for which I provide evidence-based answers.

So, in crafting this article, I eventually decided to share answers to a few literacy research questions that have come from my teacher colleagues in recent years. I invite you to take a journey with me across the topical terrain of selected questions asked me about the findings of early literacy instructional research. Although this is not intended to be an exhaustive review of early literacy research, I have endeavored to select questions and topics I believe will pique the interests of many primary-grade teachers across the U.S. and around the globe. I begin with the seldom-discussed question of handwriting.

Handwriting: Who Needs It These Days?

When I was a student in the K–12 school system in California during the 1960s, my sixth-grade teacher, Mr. Silva, gave me a D in handwriting. I can still remember my father's response. He looked me square in the eyes and said, "Son, this just won't do. Tomorrow we begin work on your handwriting every night." The next six weeks were a crash course in fluent, legible handwriting at the hands of

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an accountant father. The practice gave me very legible handwriting, just like my father's.

Fast-forward some 15 years, and I found myself writing on a chalkboard in front of my five-member master's degree committee defending my MA thesis. After filling three chalkboards with information to answer questions, I turned around to see one of my committee members shaking his head with a frown. He then sternly reprimanded me and said, "I hope your handwriting on the chalkboard in your classroom is far more legible than it was for us today!"

Frankly, over the past several decades, I was one of those who welcomed the move away from handwriting in the elementary language arts curriculum (Christensen, 2009). I and my like-minded teacher colleagues questioned the value of handwriting instruction in an already overcrowded language arts curriculum and particularly in an increasingly technologically oriented world. In short, I believed what many teachers believed—that handwriting instruction could be neglected without penalizing students. I was wrong.

Research over the last 30 years continues to show that handwriting speed and legibility, or what some call transcription fluency, predicts everything from a student's quality and quantity of written compositions to his or her ability to take notes and the scores and grades he or she receives on exams in college classes (Peverly, Garner, &

"Students…who lack transcription fluency struggle to get their ideas written down quickly enough…"

Vekaria, 2014; Peverly et al., 2007)! So, in an era of teaching with Common Core State Standards (CCSS), why should elementary teachers care about teaching young students handwriting—especially when the English Language Arts Standards (K–12) neglect handwriting altogether?

Achieving fluent transcription of handwritten letters is an essential prerequisite for achieving many, if not all, of the other CCSS writing standards. Students in early childhood, as well as college students, who lack transcription fluency often struggle to get their ideas written down quickly enough to remember what they were thinking about as they write (Berninger, 1999; Graham & Weintraub, 1996). And even though handwriting transcription fluency is considered a low-level skill, it appears to be nonetheless consistently related to and an accurate predictor of the amount and quality of the texts students produce—of students' creativity of thought, organization, coherence of ideas, comprehensiveness of topical coverage, and clarity of expression (Biemiller, Regan, & Gang, 1993; Christensen, 2009; Jones & Christensen, 1999; Graham, Harris, & Fink, 2000; Meltza, Fenton, & Persky, 1985; Peverly et al., 2007; Schlagal, 2007). Even in the current age of computing technology, Connelly, Gee, and Walsh (2007) found a high correlation between handwriting speed and typing speed; thus, children who struggle with automatic letter transcription fluency also struggle with automatic keyboarding as well.

Christensen (2009) summarizes the research quite succinctly:

> Taken as a whole, correlational studies indicate that the ability to produce letters automatically accounts for a remarkably large proportion of the variance in compositional fluency, and depending on the age of students, a large proportion of the variance in quality of written text (p. 168).

"Handwriting needs to be returned to the elementary language arts curriculum."

The takeaway message is clear: Handwriting needs to be returned to the elementary language arts curriculum. When handwritten letter transcription becomes fluent, young students can turn their attention to higher-level cognitive processes that allow them to compose high-quality written texts across a wide range of genres, as required in today's Common Core writing standards.

Phonemic Awareness: Of Rhyme (Rime) and Reason

Marilyn Adams's (1990) book *Beginning to Read*, published by the Massachusetts Institute of Technology Press, was one of the first publications to raise public and professional awareness of phonological and phonemic awareness. By 2000, the *Report of the National Reading Panel* had firmly established phonemic awareness as one of the two best predictors of future reading achievement and an essential ingredient in evidence-based reading instruction.

As the value of teaching phonemic awareness gradually crept into early childhood classrooms after the turn of the millennium, specific components of phonemic awareness instruction became firmly entrenched in preschool and kindergarten classrooms. As viewed through the lens of developmentally appropriate practices, early childhood educators often accounted rhyming and alliteration activities to develop phonemic awareness as developmentally appropriate for

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4- and 5-year-old children. It also didn't hurt that there were plentiful, accessible, and familiar resources available, such as poems, songs, chants, and raps, for teaching rhyming and alliteration that early childhood teachers could use to immediately engage young students in learning phonemic awareness. As a former kindergarten teacher, I, too, was all in on this one!

In fact, Runge and Watkins (2006) found, in one-factor analytic study, that phonological awareness was composed of two major constructs: (1) rhyming and (2) phoneme identification and manipulation. Unfortunately, the long-standing hypothesis that rhymes might be a developmental precursor of young children's full phonemic awareness (Goswami & Bryant, 1990) has yet to find strong support in research. Instead it appears that, for younger readers, that reading skill is better predicted by phonemic skills than rhyming skills (Hatcher, Hulme, & Snowling, 2004; Hulme, 2002; Muter, Hulme, Snowling, & Stevenson, 2004). Research has shown that phoneme-level skills account for unique variance in students' future reading scores, after controlling for the effects of rhyming ability in children. However, rhyme skills alone account for no unique variance after controlling for phoneme-level skills (Yeh & Connell, 2008).

In 2004, Yeh evaluated two approaches for teaching phonemic awareness to young children in a quasi-experiment: (1) rhyming, alliteration, and story activities and (2)

phoneme segmentation and blending activities. Results showed that 4- and 5-year-old children taught segmentation and blending experienced significantly greater gains in phonemic awareness and letter-sound knowledge than children taught with rhyme and alliteration activities. In 2008, Yeh and Connell replicated these findings in a second study showing that instruction emphasizing phoneme segmentation, blending, and letter-sound relationships was not only more likely to promote phoneme awareness but also more likely to promote future reading ability than rhyming, alliteration, or vocabulary activities, even for highly disadvantaged children as young as 4 years old. In a follow-up discussion of the National Early Literacy Panel's (2008) meta-analysis of early literacy research, Phillips and Piasta (2013) noted, "Some evidence suggests that teaching rhyming alone may not sufficiently promote advancements in overall phonemic awareness skills (Hatcher et al., 2004; Hindson et al., 2005; Phillips et al., 2008)" (p. 103).

As much fun as promoting phonemic awareness through rhyming and alliteration activities may be (and as much continuing allure these activities may have for many early childhood educators), the takeaway message from research is this: Focusing early phonemic awareness instruction on blending, segmenting, and manipulating phonemes has been shown to produce greater improvements in phonemic awareness and future reading

achievement in young children than time spent on rhyming and alliteration. This is not to suggest, however, that early childhood educators totally abandon rhyme and alliteration activities; rather, it is to point out the transitory value of these activities in relation to the more sustained outcomes associated with phonemic awareness instruction focused on phoneme-level activities.

Alphabet Letter Names and Sounds "Rn't" So Easy to Learn

Twenty-three years ago, I authored an article titled "Breaking the Letter-a-Week Tradition: Conveying the Alphabetic Principle to Young Children," published in *Childhood Education* (Reutzel, 1992). The gist of this article back then was that teaching alphabet letters at the rate of one letter per week, as was the "standard practice" in most kindergarten classrooms at the time, deserved to be drawn into question. Since that time, a great deal of research has been reported on how young children learn alphabet letters. It turns out that teaching alphabet knowledge to young children, something that ostensibly seems easy to teach in the minds of many laypersons and even other K–12 educators, is actually quite a complex, abstract task for young children to achieve. Complete and total mastery of all alphabet letters is a universal prerequisite in order for students to make progress in reading and writing. Alphabet knowledge is the single best predictor of later reading and writing success (National Early Literacy Panel, 2008). In addition, recent research has also demonstrated some interesting new findings about the order(s) in which young children develop their knowledge of the alphabet and how teachers can most effectively help them to do so.

In the past decade, research has identified six evidence-based alphabet letter learning orders through which young children may acquire knowledge of alphabet letter names and sounds (Justice, Pence, Bowles, & Wiggins, 2006). The first learning order is called the *own-name effect.* The own-name effect states that young children most easily and quickly learn the letters found in their given or first names. The strongest effect is for the first letter in the first name, such as *J* for Jamal (Hoorens & Todorova, 1988; Treiman & Broderick, 1998; Treiman, Levin, & Kessler, 2007). The second learning order is the *alphabetic-order effect.* The alphabetic-order effect is that letters at the beginning or end of the alphabet are learned more quickly and easily than those letters ordered in the middle of the alphabet (McBride-Chang, 1999). The third is the *letter-frequency effect,* which states that the more frequently exposed letters are in printed materials, the more quickly and easily they are learned (Fry, 2004; Hanna, Hanna, Hodges, & Rudorf, 1966). The fourth is the *letter-name pronunciation effect.* This effect occurs when a letter's sound is heard as the letter's name is pronounced. The fifth, the *consonant phoneme acquisition order effect,* states that young children learn consonant letters' names and sounds easier when they are mastered earlier in children's oral language development (Justice et al., 2006). And the sixth learning order is the *distinctive visual features letter-writing effect.* The letters of the alphabet are recognized through detection of a smaller set of distinctive visual features, which include (1) terminations, (2) straight lines, (3) curved lines, (4) diagonal lines, and (5) intersections (Fiset et al., 2008; Gibson, 1969; Townsend & Ashby, 1982). Teaching students to fluently produce this smaller

set of distinctive visual features before teaching them how to write all of the alphabet letters has been found to lead

to quicker mastery of letter transcription (Pantina, 1957). James and Engelhardt (2012) found that the production of

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Figure 1   Lesson Template for Teaching 12-Minute Letter Name and Letter Sound

Lesson Objective
Students will learn the name, the sound, and how to write the symbols for the upper- and lowercase letter *T/t.*

Supplies
- Bag of mixed alphabet letters
- Washable markers and lapboards
- Copies of enlarged print page
- Highlighter tape

Explanation
Today, you will be learning to name, say the sound of, and write the upper- and lowercase letter *T/t.* Learning the letter name, the letter sound, and how to write upper- and lowercaseletter *T/t* will help you to read and write many new words.

Letter Name Identification
This is the uppercase letter *T.* (Write and show the uppercase form of the letter.) This is the lowercase letter *t.* (Write and show the lowercase form of the letter.) Let's practicenaming this letter. What is this letter? *T/t.* (Point in different order to upper- and lowercase letter *T/t* at least three times.)

Letter Sound Identification
The letter *t* makes the /t/ sound. Say the /t/ sound with me: /t/, /t/, /t/. What is the sound of the letter *t*? /t/ (Point to upper- and lowercase letter *T/t* at least three times, asking students to make the sound of the letter.)

Sort the Letters
Here are some upper- and lowercase letter *T/t*'s. (Show bag with 6–8 upper- and lowercase *T/t* magnetic letters, foam letters, or dye cuts.) They are all mixed in this bag. We need to sort these letters into upper- and lowercase categories. (Begin with a closed sort, and in subsequent review lessons, use an open sort.) I'll put each letter on the board, and if it is an uppercase letter *T,* you say, "Uppercase *T*, /t/." If it is a lowercase letter *t,* say,"Lowercaset, /t/." (Place letters on whiteboard one at a time for students to identify and sort.)

Find the Letters
Now, let's see how many letter *t*'s we can find on this page. (Be sure to pick short pages of enlarged print with no more than four lines of print. Run a pointer underneath the words in each line of print.) When you see a letter *t*, point to the *t*. (Call on one student to come up and place a piece of highlighter tape over the letter *t* on the enlarged print page. You can also pass out a copy of a 3- or 4-line page out of a children's picture book and ask students to find a certain number of letter *t*'s on the page, using a highlighter pen or crayon. Using a timer or stopwatch to increase intensity, pacing, and motivation is also advised.)

Write the Letter
(Name and demonstrate the proper formation of the uppercase *T.*) The uppercase letter *T* starts at the top of the line and goes straight down to the bottom of the line. Then it has a straight line across the top. (Next, name and demonstrate the proper formation of the lowercase *t.*) The lowercase letter *t* also starts at the top of the line and goes straight down to the bottom of the line. Next, make a line that crosses the other line between the middle and top of the line. (Pass out white boards, gel boards, or lap boards and ask students to take letter dictation. Ask students to write 3–6 dictated upper-and lowercase *T/t* letters, and also quickly review other letters learned. Have students write and cover their letter. Then ask them to show you, using a choral response mode, the letter they wrote. Using a sticky note or clip board, notice when students show you their written dictated letters which were successful and which may need additional help in small-group settings.)

handwritten alphabet letters activated areas of children's brains identified as the "reading circuit" more than any other sensorimotor training.

Research by Jones and Reutzel (2012) showed that letter-a-day instructional pacing was significantly more effective than letter-a-week pacing in promoting students' mastery of the alphabet letter names. They attributed this finding to a total of 6–7 distributed reviews of the alphabet letters in a single academic year, compared to only 1.5 distributed reviews when pacing instruction at a letter a week. Neuman (2006) cautioned teachers of young children that as important as alphabet knowledge is, it should not require an hour per day of instructional time in pre-K and kindergarten classrooms. Piasta and Wagner (2010) found that the most effective alphabet knowledge instruction is multicomponential, meaning that lessons should include learning activities that require letter recognition, naming, associating the symbol with a sound, writing, discriminating the letter to be taught from other letters, and categorizing letters into upper- and lowercase, to name a few. Jones, Reutzel, and Clark (2012) describe just such a multicomponential alphabet knowledge lesson format that requires only about 12 minutes per day to teach, as shown in Figure 1.

With knowledge that there are multiple learning order effects associated with young students who are learning alphabet letters and names, teachers of young children may want to consider changing up the order and focus for teaching the alphabet as they teach a letter a day, rather than a letter a week, to provide the recommended 6–7 distributed review cycles per year. Teaching students brief, multicomponential alphabet letter lessons daily followed up with multiple review cycles provides strong support for young students' alphabetic knowledge acquisition.

Concepts About Print: Don't Assume It!

Marie Clay (1972a, 1991), perhaps more than anyone else, was responsible for drawing educators' attention to the oft-overlooked and seldom assessed importance of print awareness and print concepts. She maintained that as children learned to read, they needed to develop clear understandings about basic print concepts such as letters, words, sentences, directionality (top, bottom, left, right, first, last, etc.), and book handling, and they needed to be able to connect these concepts to the academic or instructional terms used to refer to them. Clay (1991) cautioned years ago, "Teachers cannot assume that beginning readers can isolate for attention the things that labels refer to. If they cannot and the teacher uses the terms without checking, the teaching-learning interaction goes astray" (p. 141).

Where do children acquire print awareness? They get it from seeing environmental print and seeing people use print for various purposes (Hiebert, 1983). According to Adams (1990), children from middle-class families arrive at first grade having experienced 1,000 to 1,700 hours of one-on-one storybook reading as well as another 1,000 + hours of print experience in their homes and communities. In comparison, children coming to first grade from families in poverty typically have experienced only 25 hours of storybook reading and less than 200 hours of general guidance about the forms and nature of print. Consequently, there are likely to be some children in every classroom who need concepts about print (CAP) assessment and instruction.

The National Early Literacy Panel (2008) identified CAP and print awareness as 2 of 10 variables that were moderately to strongly predictive of later literacy proficiency. Johns (1980) found that proficient first-grade readers performed significantly better on the CAP test (Clay, 1972a, 2000) than did average or below-average first-grade readers. In 1987, Lomax and McGee tested a five-component model where CAP influenced letter awareness; letter awareness influenced phonemic awareness, phonemic awareness influenced phoneme (sounds)-grapheme (letters) awareness, which ultimately influenced the word-reading component of the model. CAP also directly influenced the phoneme-grapheme component in the model. Morris, Bloodgood, Lomax, and Perney (2003) tested another model and found that *concept of word*, one element of CAP, followed awareness of beginning consonants in words but preceded full phonemic segmentation, which in turn led to word recognition. Reutzel, Young, Fawson, Morrison, and Wilcox (2003) found that students' classification as "Conventional Readers" by their level of knowledge on the CAP test (Clay, 1972a, 2000) reliably predicted how well these same students could read

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environmental print when degraded from its original context to simple black-and-white block print. Taken together, it appears that assessing and teaching CAP may not be the single most important element of early reading instruction, but it certainly seems to provide a bridge to later literacy proficiency.

Reutzel, Oda, and Moore (1989), in an experimental study, found that an immersion approach to teaching CAP in kindergarten produced significant effects on reading readiness and word-reading test scores. The immersion approach embedded CAP instruction in a shared reading where the teacher would operate on the enlarged print as if all children in the class were seated in her lap. Children could hear their teacher using unfamiliar CAP terminology and at the same time see the teacher pointing, framing, highlighting, matching, and so on as she referred to the print features verbally. A real favorite in this immersion approach was the "verbal punctuation" technique, where children and teacher read a text and give each punctuation mark a sound and a hand motion. An engaging and humorous example of verbal punctuation can be found on YouTube by searching for Victor Borge's phonetic punctuation.

In conclusion, CAP are effectively taught to young children by immersing them in shared reading experiences using pointing, circling, framing, counting, highlighting, verbal punctuation, matching, and so on. As children develop CAP, teachers can invite them to follow along using fingerpoint reading in their own copy of a text as they develop increasing control of the visual system.

Of Workshops and Writing Strategies: Writing in Early Literacy

Process approaches to writing instruction in the primary grades are a

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ubiquitous practice. Often embedded within a writers' workshop, process writing approaches involve teachers and children in a variety of prewriting activities such as minilessons to define audience, purpose, discourse styles, planning, resource use, and drafting. Following a prewriting phase, which results in the production of a first draft, process writing approaches next involve teachers and children in conferencing, revising, and editing to improve the quality of the first draft. At the conclusion of the process writing approach, students and teachers disseminate their writing using a variety of activities and media such as an author's chair, books placed into the classroom library, or digital books shared on the school's website. Process writing approaches became popular in the mid-1980s, stemming from the early work of scholars such as Donald Graves (1983), Janet Emig (1971), Peter Elbow (1973), Lucy Calkins (1983), and Glenda Bissex (1985).

As a former primary-grade classroom teacher, I found the writing process model as embodied in descriptions of the writers' workshop difficult to implement in a classroom of 25 + primary-grade students. I guess I should not have been surprised, since the original research on process writing was largely conducted by four researchers (Calkins, Elbow, Emig, and Graves) working with a total sample size of less than 25 participants. In fact, much of this early writing process research consisted of a series of micro-studies focused on the writing processes of individuals or small groups of students.

Nevertheless, over the intervening years, dedicated classroom teachers have found ways to implement the process approach to writing in classrooms with relative success.

So, just how powerful is the process writing approach for improving students' writing quality in elementary classrooms? Graham & Sandmel (2011) reported a meta-analysis of process writing studies including studies of primary-grade students in classroom settings. They reported a mean average weighted effect size of .34 of a standard deviation (small effect size) with 84% of the comparisons resulting in a positive effect for writing process approaches. Consequently, one is safe in concluding that process writing was consistently superior to other traditional writing approaches to which it was compared. On the other hand, process writing is not without its critics. Cramer (2001) summed up the situation as follows:

> It is best to face this truth: the writing process has its weaknesses; it is poorly implemented in many instances; it is not a panacea. But it is a better candidate for improving writing performance than the traditional approach…there is not sufficient evidence to cause us to abandon the writing process (p. 39).

Consequently, there seems to be good reason for primary-grade teachers and students to continue to use process writing approaches as embodied in the near-ubiquitous practice of writers' workshop. Conversely, the effect size of the process writing approach, although consistent, was relatively small. One must wonder if there isn't

"If teachers…want to 'power up' their writers' workshop, use…highly effective SRSD writing strategies."

a more powerful writing approach teachers might use in addition to or embedded within current process writing approaches to increase outcomes in a CCSS writing environment.

The answer to this question is a resounding *yes!* For many years now, researchers Harris, Graham, Mason, and Friedlander (2008) have been conducting studies of powerful writing strategies called Self-Regulated Strategy Development (SRSD). In a meta-analysis, Graham (2006) reports a mean effect size of 1.32 standard deviations (large effect size) for all examined effects of SRSD writing strategy instruction. This effect size is a whopping four times the average effect size on writing quality and quantity realized from a process writing approach alone!

Harris and colleagues (2008) describe writing strategies for enhancing word choice, writing stories, persuasive text, explanations, descriptions, and reports. They provide additional strategies for teaching revising, test-taking, and planning a writing project. Each strategy is easily remembered by the use of several mnemonic devices, such as POW + WWW (Pick my idea; Organize my notes; Write and say more + Who, When, Where and What 2; How 2) or TWA + PLANS (Think before reading; think While reading; think After reading + Pick goals; List ways to meet goals And make Notes; Sequence ideas).

SRSD writing instruction follows a sequence of instructional stages, not to be used as a "cookbook" but as a general format or framework for instructing each SRSD writing strategy to the point of self-regulation. The sequence of SRSD writing instruction begins with developing students' background knowledge, followed by discussions about the strategy to be learned; then teacher modeling, followed by guided, supported practice; and finally, independent performance of the strategy. Students initially work to memorize each acronym for the several SRSDs to be taught. Students also spend time analyzing well-written or considerate text examples of the genre or type of writing they are learning to produce with teacher guidance. Thus, the text examples students read become mentor texts or "windows" of understanding for them to learn about how to produce a quality written product.

If teachers of young children want to "power up" their writers' workshop, there are more than 40 experimental studies showing the effectiveness of teaching students using Harris and colleagues' (2008) highly effective SRSD writing strategies. As a complement to writers' workshop, teachers of young children can embed SRSD instruction within a writers' workshop framework with little effort by replacing the minilessons with SRSD lessons. During writing time, teachers can then provide guidance and support and gradually release these strategies to students' self-regulated use in producing quality and quantity writing products that will address many, if not all, of the current writing CCSS.

Talking Text Structure: If You Can Say It, You Can Read and Write It!

Prior to entering my PhD program in 1980, I had never heard of text structure. During my first doctoral seminar

on teaching reading comprehension, I was introduced to P. David Pearson and Dale D. Johnson's (1978) book, *Teaching Reading Comprehension*. It was here I first learned about micro and macro structures in text. Like many other educators of my vintage, I had learned about Bloom's Taxonomy of Educational Objectives and asking questions at higher levels of thinking, but I had never entertained the idea that analyzing a text for its implicit structure would help me as a learner organize, remember, learn from, and make richer connections with my own background knowledge or with other texts I had read. Since that time, I have wondered why, in my 30 + years of classroom observations and content analyses of core reading programs, I have observed so very little teaching of text structure. Admittedly, I have seen more teaching of story structure than I have seen teaching of informational text structures. This may explain why a recent large-scale, longitudinal observation study of reading comprehension instruction in grades K–3 revealed that primary-grade teachers spend very little time teaching text structures (Donaldson, 2011).

The finding that primary-grade teachers spend little time teaching text structure is especially concerning when viewed through the lens of implementing the CCSS for Reading, in which Anchor Standard 2 is, at least in part, focused on analyzing literature and informational texts for text structures.

Teaching young children text structures to support reading comprehension in early reading may seem at odds with most teachers' experiences. They might question how or why it would be important to teach young students text structures when the students are struggling to identify letters, associate sounds, decode unfamiliar words, and attain a level of reading fluency

that would facilitate reading comprehension. Why, then, would a recently published IES practice guide titled *Improving Reading Comprehension in Kindergarten Through 3rd Grade* recommend that primary-grade educators explicitly "teach students to identify and use the text's organizational structure to comprehend, learn, and remember content" (Shanahan et al., 2010, p. 17)? Preliminary research evidence suggests that students as young as 4 may benefit from instruction that targets the development of listening and reading comprehension skills by teaching informational text structures (Culatta, Hall-Kenyon, & Black, 2010).

In a longitudinal study, Oakhill and Cain (2012) found that higher-level oral language skills, such as inference and comprehension monitoring, at age 7 were reliable predictors of reading comprehension at age 11. Cognitive profiles of elementary school–aged students with reading comprehension difficulties have shown they often evidence simultaneous weakness in oral language comprehension and processing (Duff & Clarke, 2011; Duke, Cartwright, & Hilden, 2013). In fact, Catts, Fey, Zhang, and Tomblin (1999) found that approximately 70% of students with poor reading comprehension in the second grade had also demonstrated significant oral language deficits in kindergarten. Similarly, young students with poor language skills in kindergarten have been shown to be at a higher risk for developing reading comprehension problems in later years (Catts, Fey, Tomblin, & Zhang, 2002). Notably, Nation, Cocksey, Taylor, and Bishop (2010) found that oral language weaknesses in poor comprehenders at age 8 were not a simple consequence of students' reading comprehension impairment; rather, they reflect persistent prior weaknesses in expressive and receptive language,

listening comprehension, and grammatical understanding. As a consequence, weakness in oral language in the early grades is increasingly viewed as a contributing and causal factor affecting poor reading comprehension in later grades (National Early Literacy Panel, 2008; Duke et al., 2013).

So then, what is the takeaway message from all of this research on early comprehension instruction and oral language? It seems that if children can listen to texts read aloud, learn to identify the texts' structural components and organization, and then use this text structure knowledge to generate "text structure talk" in spoken texts, their later reading comprehension is empowered. The strongest evidence to date showing that oral language and story structure instruction improves listening and reading comprehension has come primarily from work with narrative texts (Duff & Clarke, 2011; Gillam & Gillam, 2014; Gillam, Gillam, & Reese, 2012).

Gillam et al. (2012) report results of a federally funded development project in which young language-impaired students were first taught the causal structure within the setting of narrative text structure elements (e.g., setting, problem, goals, episodes, and resolution), then this instruction was coupled with storytelling instruction and guided practice using wordless picture books as initial scaffolds working toward independent storytelling. Students' reading comprehension for stories was assessed from the baseline of the intervention to the conclusion the development project that resulted in the Supporting

Knowledge in Language and Literacy (SKILL) program (Gillam, Gillam, & Laing, 2012; see www.eejecerc.usu.edu/news/skill.php). Results showed that improving young language-impaired students' knowledge of story structure and then applying this knowledge in the generation of oral "well-structured" stories significantly and positively impacted these students' listening and reading comprehension of stories. In short, providing students story structure instruction while listening to stories and then applying this knowledge first in oral language rather than in reading produced positive effects on later story comprehension.

Another message for teachers of young children from these research findings is this: *There is no reason to delay the teaching of reading comprehension strategies such as text structure until children can read fluently.* Comprehension strategy instruction using story structure instruction and story maps can be effectively accomplished while listening to stories and then applied in oral language usage prior to expecting students to apply this knowledge to the reading or writing of stories.

A logical extension of these findings should be considered for teaching informational text structures to young children. To begin informational text structure instruction, young students need to be taught about typical informational text structures such as description, sequence/procedural, problem-solution, cause-effect, compare-contrast, and mixing or multiple uses of these within a single text. Teaching students to study an author's

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Figure 2   Graphic Organizer to Represent a Sequential-Cycle Text Structure

A Butterfly is Born:
Life Cycle Graphic Organizer

Egg

Caterpillar

Pupa
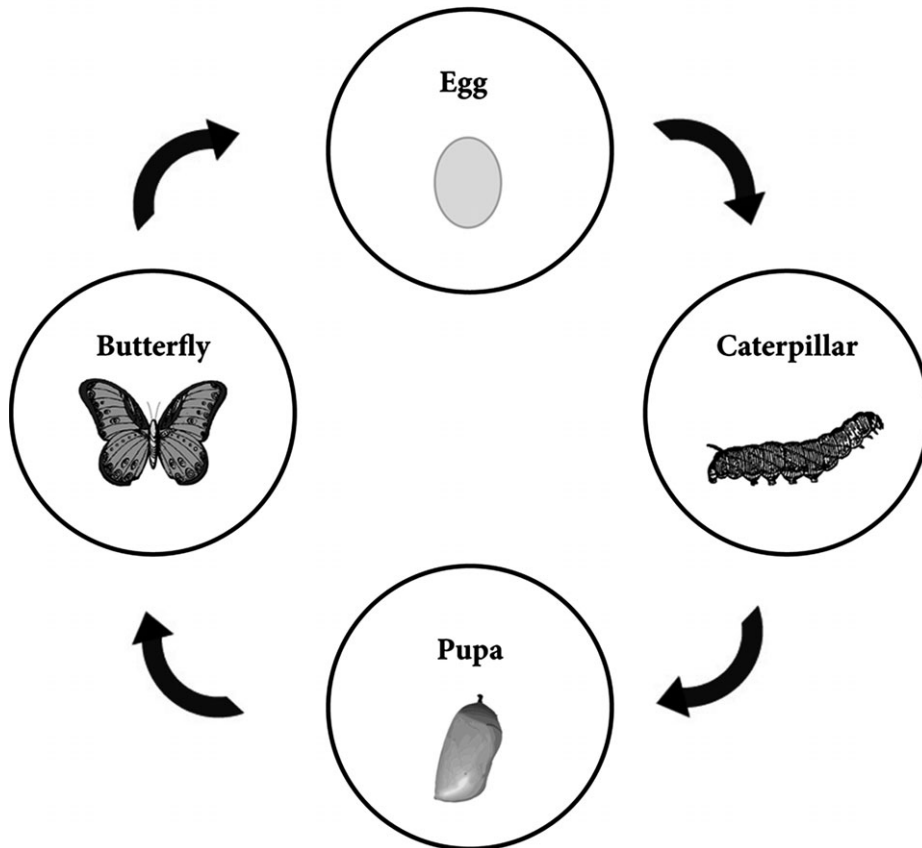
Butterfly

use of headings, subheadings, diagrams, photos, and so on in informational text helps them to unpack the way a text may be organized. For example, suppose a first-grade teacher, Ms. Gilly, was going to read aloud the book *A Butterfly is Born* by Melvin Berger (1993). She begins by taking her students on a guided "text feature walk" through the book to determine how the author has organized the presentation of information. Once this is done, she assists her young students in determining if this text is a narrative or informational text. After they decide it is an informational text, it is helpful for Ms. Gilly to show

the students a visual of the text's organization using a graphic organizer, in this case perhaps a sequential or cyclic visual, as shown in Figure 2.

Once students see the text's organization or structure visually represented, it is often helpful for teachers to closely reread the text aloud with students in a shared reading to fill in the slots in the graphic organizer. Over time, teachers engage students in scaffolded "text talk," where they orally describe, compare and contrast, enumerate steps in a procedure, explain cause and effect or a problem and solution, and so on. Studying the structure

of texts can help even the youngest of students construct more complete, connected, and coherent mental models of meaning and knowledge as they actively listen to oral readings of narrative and informational texts.

Wrapping Up: Little-Known Findings on Early Literacy

Early literacy instruction sets the stage for all later literacy progress. If the foundations of literacy are secured early on, then students are placed on a trajectory leading to probable academic success in later schooling. The specific questions I addressed about early literacy instructional practices and research described here weren't those that have been propelled to the center stage of prominence in the past—phonemic awareness, phonics, fluency, vocabulary, or comprehension (National Reading Panel, 2000). Rather, they were in most cases related to additional elements of early literacy recommended by the National Early Literacy Panel (2008), such as oral language, concepts about print, letter-name knowledge, and writing. By adding these vital elements to early literacy instruction, teachers will be able to more completely and effectively address the requirements of the CCSS in English language arts and provide students with an effective programmatic framework for acquiring the necessary early literacy understandings, concepts, and skills for literacy success in primary-grade classrooms.

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