State Reform Policies and the Task Textbooks Pose for First-Grade Readers

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Abstract

Since the late 1980s, reading reform efforts in California and Texas have led to changes in beginning reading textbooks. This article examines the effects of these policies on the task that current (2000/2001) texts pose for beginning readers. I begin by reviewing trends in textbooks over the past 80 years and continue by identifying cognitive and linguistic dimensions of the beginning reading task. These dimensions, such as word repetition, are used to describe the beginning reading task of current and historical textbooks. Analyses showed that 41% of the unique words in current textbooks appear once in 10 consecutive texts. Further, between 1962 and 2000, the number of unique words increased substantially, whereas word repetition was curtailed. One conclusion from these data is that current entry-level first graders are expected to acquire new words at the same pace as exiting second graders.

Texts can take a variety of forms, but, by definition, reading involves a text. The texts that constitute at least part of the reading experience for most first graders come from textbook programs (Baumann, Hoffman, Duffy-Hester, & Ro, 2000). Ball and Cohen (1996) have identified textbook programs as primary sources for reform in that these programs are already "scaled-up." This observation is not new to policy makers in California and Texas. Over the past 2 decades, textbooks have formed a central plank of their reading reform efforts. The size of the school populations of California and Texas and their centralized textbook adoptions mean that the mandates of these two states exert considerable influence over U.S. reading textbook programs. Children and teachers in other states are likely to be subject to the reading reform efforts initi-

ated by policy makers in California and Texas.

In its 1987/1988 guidelines, the California English/Language Arts Committee (1987) mandated that language arts/reading textbooks contain only authentic literature. Prior to this mandate, the characteristics of beginning reading textbooks had been fairly stable for decades (Chall, 1967/ 1983). The number of words in texts increased as a result of Chall's review in 1967 but, for almost 60 years prior to the 1987/ 1988 California textbook specifications, generations of U.S. first graders read texts that emphasized high-frequency words. The new California guidelines indicated that texts that had been written to comply with readability formulas would not be purchased with state funds. In its 1990 guidelines to educational publishers, Texas followed suit (Texas Education Agency, 1990). The subsequent textbook adoption in California in 1995/1996 retained the same guidelines but, by the late 1990s, many concerns were being raised about reading textbooks, particularly for first graders. The rhetoric for reading reform mounted when the National Assessment of Educational Progress's (NAEP) first state-by-state comparison reported California as tied with Louisiana for the thirty-ninth out of 40 ranks (Campbell, Donahue, Reese, & Phillips, 1996). With its 1997 guidelines, Texas (Texas Education Agency, 1997) shifted gears and called for a different type of text for beginning readers—decodable texts. In its 2000 guidelines for its 2002 textbook adoption, California followed Texas's lead (California English/Language Arts Committee, 2000).

Presumably, the recommendations of policy makers are derived from the prominent perspectives of the scholarly community. However, the interpretations that result from political lobbying and decision making may deviate considerably from the original models (Kingdon, 1995). In this article I describe the beginning reading textbooks that publishers produced in response

to the recent mandates of Texas as well as the textbooks produced in earlier eras. Text features are considered through the lenses of the cognitive and linguistic processes that the tasks present to beginning readers. The selection of the cognitive and linguistic processes emanates from a theoretical framework on the role of texts in beginning reading acquisition—the Text Elements by Task (TExT) model. The label for the model reflects its emphasis on defining the task that a text presents to beginning readers. The foundation for this theoretical framework will be presented after a review of prominent texts that have been used for beginning reading instruction in the United States over the past 80 years. It is only against this backdrop that the need for a model of text and a focus on the tasks posed by texts become evident.

Models of Text in Reading Acquisition

Dick and Jane: A Behaviorist Model

William S. Gray's model of text for beginning reading acquisition (Elson & Gray, 1930; Gray & Leary, 1935) was sufficiently transparent that it has been caricatured by generations of individuals who learned to read from these texts. Texts such as "Go, go, go. Go, Dick, go. Help, help!" (Gray, Monroe, Artley, Arbuthnot, & Gray, 1956) complied with Gray's model of optimal texts for beginning reading acquisition. The model is straightforward: If the most frequent words in written English (Thorndike, 1921) are taught to children initially in accordance with Thorndike's (1903) four laws of learning—effect, exercise, readiness, and identical elements—children will learn to read. In the 1956 first preprimer of Scott Foresman[1] (Gray et al., 1956) that operationalized the model, each of 17 unique words appeared a minimum of 12 times (the laws of exercise and identical elements). The law of readiness was evident in the pacing of words, with no page presenting more than one new word and no story introducing more than three new words. The law of effect meant

that correct reading of the story led to "a satisfying conclusion" (Gray et al., 1956). After Gray implemented this model with the 1930 edition of Scott Foresman (Elson & Gray, 1930), prominent scholars such as Gates, Bond, and Betts applied the behaviorist model at other publishing houses (Smith, 1934/1965).

Publishers also applied Thorndike's laws of learning (1903) to texts where the unit of repetition was the phonetically regular, rather than the high-frequency, word (e.g., Rasmussen & Goldberg, 1964). Such phonetically regular texts never dominated beginning reading instruction to the degree that programs based on high-frequency words did. During every wave of reading reform, however, phonetically regular text has been and continues to be proposed as a primary solution for reading problems (e.g., Flesch, 1955; Grossen, 1997).

Cognitive Science: Debunking Readability Formulas

The primers of basal reading programs were less pure in their implementation of Gray's model after Chall's (1967/1983) critique of the model and the involvement of psycholinguists in textbook design in the 1970s (Goodman et al., 1971). But the basic model remained intact until researchers used cognitive science perspectives to examine the effects of readability formulas on comprehension. These studies were conducted with texts for older students, not the preprimers and primers of first-grade reading. Second graders were the youngest students in the studies that demonstrated that texts changed to conform to readability formulas created difficulties for comprehension (Brennan, Bridge, & Winograd, 1986).

In presenting findings on text in *Becoming a Nation of Readers*, Anderson, Hiebert, Scott, and Wilkinson (1985, p. 118) differentiated between the earliest texts for beginning readers and those for slightly older readers: "Reading primers should be interesting, comprehensible, and give children opportunities to apply phonics. . . . After the very earliest selections, primers should tell complete, interesting stories." In response to the question, "Is it possible to write interesting, comprehensible, and natural-sounding selections for young readers while at the same time constraining the vocabulary on the basis of letter-sound relationships?" (p. 47), Anderson et al. (1985) suggested three guidelines: (*a*) creating a sequence of letter-sound relationships that permit as rich as possible a set of words, (*b*) including some useful irregular words, and (*c*) including some regular words that embody letter-sound relationships that have yet to be introduced but contribute to interesting and meaningful stories.

The call to loosen the control of high-frequency words in elementary texts struck a chord with U.S. teachers. But substantial attention had not yet been directed to designing or studying alternatives for beginning readers when policy makers in California issued their 1987/1988 mandate for authentic literature. Although models of the processes of beginning reading and growth in word recognition had emanated from cognitive science (Adams, 1990; Ehri, 1991; LaBerge & Samuels, 1974; Perfetti, 1992; Stanovich, 1991, 2000), these models had not described how particular text features support or detract from reading processes.

Authentic Literature: Predictable Texts

Whereas cognitive scientists conducted the research that underlay the elimination of texts based on the behaviorist model, a perspective grounded in social constructivism influenced the form that the new texts took. For example, Alvermann and Guthrie's (1993) identification of reader engagement as a central construct in reading was the basis for evaluating the new texts that were provided in response to the Texas mandate for authentic literature. Based on measures of design, content, and language, Hoffman et al. (1994) judged 1993 first-grade textbooks filled with recognizable trade book selections to be significantly

more engaging than their 1987 counterparts filled with controlled vocabulary. In comparing the decodability and predictability (e.g., repeated syntactic and story patterns) of the 1993 and 1987 texts, Hoffman et al. reported that the proportion of words that fit into the simplest decoding categories was substantially smaller for the 1993 than for the 1987 texts and that over 50% of the selections in the 1993 texts had features associated with predictable text compared to 20% of the earlier texts.

The predictable texts that Hoffman et al. (1994) described as prominent in the 1993 programs had a long history in reading instruction. Primers in the nineteenth century had texts such as "The House That Jack Built" (Stickney, 1885). Prior to Gray's involvement with Scott Foresman, that publisher's first-grade textbook (Elson, 1912) included selections of traditional tales with predictable text structures, such as "The Little Red Hen." The domination of Gray's model over a 50-year period, however, meant that mainstream texts had not incorporated predictable text.

As predictable texts loomed large in the first-grade components of literature-based reading programs of the 1990s, a theory for these texts was promoted (Holdaway, 1979). This perspective holds that children's engagement will be sustained with rhythmic and rhyming texts, ensuring that they attend to the text through repeated readings. The rhyming nature of the texts will support children's attention to similarities in the letter-sound relationships of English. But the theory and its empirical validation remained limited. Answers to questions such as these had not been addressed when predictable texts began to dominate the mainstream textbooks of California and Texas, and subsequently the rest of the country. Only a few studies on predictable texts existed (Hiebert & Martin, 2001), and some of the findings in this extant research contradicted the use of predictable texts as a means of developing independent word recognition (e.g., Leu, DeGroff, & Simons,

1986). The texts began to be criticized, and a number of groups began to advocate decodable texts. One group in particular, the National Center to Improve the Tools of Educators (NCITE) based at the University of Oregon, advocated campaigns to improve reading achievement based on scientifically based reading research. As Carnine (1999, p.6), the director of NCITE, described the campaign in California, "appropriate use of research-based instructional material" was central to this effort. In California, these appropriate, research-based instructional materials meant a particular reading program that had decodable texts in its entry grade 1 level. As part of the NCITE campaign, this reading program with decodable texts was implemented in the state's largest school district (Los Angeles Unified) and other districts through funding by a private foundation (Carnine, 1999).

Decodable Text

Applying the criteria used to analyze the 1993 texts (Hoffman et al., 1994), Hoffman, Sailors, and Patterson (2002) reported that the first-grade texts on the Texas-approved list in 2000 scored lower in predictability but higher on decodability than those in the 1993 textbook programs. The findings reported by Hoffman et al. (2002) reflected the Texas Education Agency's mandate (1997) that first graders read from texts where 80% of the words have the "potential for accuracy" (Beck, 1981). Potential for accuracy is ascertained by matching the words in students' texts with the scope and sequence for instruction of phonics elements in the teachers' manuals. For example, if lessons on the consonants c, t, and n and the short vowel a have appeared in the teacher's manual, the words *can*, *cat*, and *Nat* in the student text have the potential for accuracy. If *nag* were introduced and a lesson on the consonant g had not yet occurred in the teacher's manual, this word would have only a partial potential for accuracy. Beck and McCaslin (1978) applied this criterion to eight series published in the mid-1970s

and reported that texts from the first-grade textbooks in phonics programs had significantly higher percentages of decodable words (69%–100%) than texts from traditional basal programs (0%–13%).

Stein, Johnson, and Gutlohn (1999) examined the texts of four programs, including several submitted for the 2000 Texas adoption, for compliance to the 80% decodability criterion. Recognizing that many high-frequency words are not decodable, Stein et al. (1999) established the potential for accuracy of a program by adding the percentage of decodable words to the percentages of high-frequency words. They reported that the texts for one program had only words that achieved the potential for accuracy criterion, whereas those for three other programs were close to the 80% level. Stein et al. (1999) and Beck (1981; Beck & McCaslin, 1978) did not report on children's learning with texts that met the 80% criterion. Nor did either group of researchers—or other researchers, for that matter—examine the number of lessons that children require to recognize a letter-sound correspondence in unfamiliar words or the number of patterns and new words beginning readers can manage in a single lesson.

A review of research on the learning of highly regular words in text is not the aim of this article. In the reviews of research groups on the learning of letter-sound correspondences (Ehri, Nunes, Stahl, & Willows, 2001; National Reading Panel; 2000; Snow, Burns, & Griffin, 1998), the evidence has been and continues to be that consistency in the letter-sound relationships that children are taught supports reading acquisition. The operative word in the last sentence is *taught*. The studies for basing conclusions about phonics instruction are of instructional routines that may include texts with phonetically regular words but where the focus is not on learning words from texts.

Further, although children's learning in existing texts that vary in the number of phonetically regular words has been considered in a few studies (e.g., Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998; Juel & Roper/Schneider, 1985), experimental studies that vary the amount and type of regularity (e.g., vowel patterns with one-to-one correspondences or those with more complex correspondences) in texts with beginning readers are virtually nonexistent (see Hiebert & Martin, 2001, for a review).

The Task of First-Grade Texts: Linguistic-Cognitive Processes

Debating the percentages of decodable words in texts or the advantages or disadvantages of using predictable stories in beginning reading instruction has not proven particularly productive. A more productive route was suggested by Anderson et al. (1985) in *Becoming a Nation of Readers* as they concluded a review of research on problems with the then-dominant high-frequency texts: "The important point is that a high proportion of the words in the earliest selections children read should conform to the phonics they have already been taught. . . . However, a rigid criterion is a poor idea. Requiring that, say, 90% of the words used in a primer must conform to letter-sound relationships already introduced would destroy the flexibility needed to write interesting, meaningful stories. . . . What the field does need is an understanding of the concepts at work" (p. 47).

In the 2 decades since Anderson et al.'s (1985) recommendation, state policy makers and publishers have initiated many changes in reading textbook programs. In contrast, educational researchers have directed little attention to understanding the concepts at work, that is, the cognitive and linguistic processes involved in learning to read. Until these concepts are understood, shifts in policies are likely to continue as legislators scramble to respond to state and national data on students failing to attain literacy standards. It is to the task of understanding the concepts at work that the TExT model is directed.

The efforts of cognitive scientists have yielded critical insights into children's capabilities for processing written and spoken language, including constructs such as modularity (Stanovich, 2000), automaticity (LaBerge & Samuels, 1974), and verbal efficacy (Perfetti, 1992). The lenses of cognitive science, however, have been applied less frequently to examining how texts support or detract from these initial word-recognition processes. Presumably, if particular processes are critical in beginning reading acquisition, differences in the features of beginning reading texts will influence the development of these processes. Even when students have the same phonics instruction, there are indications that the texts of the first period of beginning reading instruction create different competencies, although these differences wane when texts of subsequent instruction are similar (Juel & Roper/Schneider, 1985). To date, however, there has not been a comprehensive framework for the features of texts that support or detract from critical learning processes. To begin building such a framework, I chose two constructs: (a) linguistic knowledge and (b) cognitive load. As the following descriptions suggest, these two constructs have theoretical and empirical justification as the foundation for a model of how text influences beginning reading acquisition.

Linguistic Knowledge

In learning to read, children need to make numerous distinctions among graphemes, phonemes, and grapheme/phoneme relationships (Adams, 1990). To read the apparently simple sentence "So what did the cat do?" a beginning reader needs to be able to differentiate between words where all of the letter-sound correspondences are consistent—*so, did, cat*—and those where one or more patterns are inconsistent—*what, the, do*.

Excerpts from the entry first-grade texts of 4 decades' copyrights of the longest-published U.S. reading textbook program—

Scott Foresman—in Table 1 illustrate the types of words with which beginning readers are confronted in beginning texts.

The words in Table 1 are of four general types. The first, and largest, group of words is composed of phonetically regular words. Twenty-six letters represent the 44–46 phonemes of spoken English. Even words that have idiosyncratic letter-sound relationships (e.g., *the*) relative to the typical use of the vowel pattern (e.g., *he, she*) are alphabetic in nature. Words with a one-to-one correspondence between letters and sounds are often exaggerated in texts for beginning readers to ensure children's facility with this fundamental characteristic of English writing. The excerpt from the 2000 copyright in Table 1 illustrates such an emphasis with the words *slip, kick,* and *hid*.

The second group of prominent words in Table 1 consists of high-frequency words. These words, including prepositions, articles, and conjunctions, occur frequently in connected discourse. A small group of these words—25—accounts for around 33% of the total words in texts (Zeno, Ivens, Millard, & Duvvuri, 1995). According to Adams (1990), 15 of the 25 most frequent words have at least one inconsistent or uncommon letter-sound correspondence, such as *have* or *of*. Even when words with consistent letter-sound correspondences are exaggerated, such as in the text from the 2000 program in Table 1, high-frequency words with irregular letter-sound correspondences, such as *what*, can be found. If children persist in applying the same decoding strategies to high-frequency words as they do to phonetically regular words, they will not become fluent beginning readers (Adams, 1990).

A third group of words is represented by *wiggliest* in the excerpts in Table 1. Words such as this one are morphological derivatives. Simple derivatives, such as verb tenses, plurals, possessives, and comparisons (*colder, coldest*), typically do not generate much attention among reading researchers in the debate over what to teach beginning readers. But the more complex

TABLE 1. Excerpts from the Eighth Text of Four Copyrights of Program A: Two Levels

Copyright	Grade 1 Entry	Grade 1 Exit
2000	I went[a] to the *park*.[b] What did I see? I **saw** a *slide*. **Slip**! I saw a *ball*. **Kick**! I saw a **duck walk**. *Quack*! I saw a big *hill*. I *win*! I saw a *tree*. I *hid*. I saw a *rock*. Oh, no. *Trip*! I saw *kids*. *Lucky* **me**!	Mom and **Louise** helped out with the costumes. "*Hold* still," said Mom. "I **hope** I'm scary **enough**," said Dexter. It was time for the play. Fox *peeked* out from behind the **curtain**. There was a big *crowd*. "I hope everything *goes okay*," said Dexter. "What could go *wrong*?" said Fox.
1993	I **can't wait for** school to be **over**, can't wait to **rush down** the **street**, for I *have* a new brown puppy with *funny* white *socks* for **feet**. *He's* the **wiggliest** *bundle* of wiggles you *ever could* **hope** to see. I can't wait and I hope my puppy is waiting.	Each was *afraid* the other would get the biggest piece. They **argued**, and they *growled*, and they **began** to *fight*, till a fox came by. "What are you arguing about?" the *sly* one asked the bear cubs. "We don't know how to divide the cheese so that we'll **both** get equal parts."
1983	Look at the bird. Can the mouse and the bird play with a bat? A mouse can't play with a bat. A bird can't play with a bat. **They** can't have fun with it. A bat is not fun for a mouse and a bird. Now look at this ball.	"May we try to help you?" asked her father. "No, **thank** you," said Jean. And she went upstairs again. "She doesn't want our help," said Jean's mother. "No, she **doesn't**," said her father. "Maybe she doesn't need so much help," said her grandmother. "Too much help makes her angry."
1962	**Oh**, Jane. Look **at** Sally. Dick! Jane! Come here. Help **me**! Help me! Look, Jane. Look at me. Look at **Tim**.	They wanted the children to go home. They called to the merry-go-round, "Stop! Stop! It's very, very late. **Night** will come soon. Our children must go home at once. Please stop! Please stop!" The merry-go-round did not stop. It called to the fathers and mothers, "Go away! Go away!"

[a]Bold faced = first-time appearance of a word.
[b]Italicized = single-appearing word.

morphological derivatives, such as compound words, may be challenging to beginning readers, and, for linguistically diverse children in particular, developing automaticity with this group of words should not be assumed (Carlisle, 2004).

The excerpt from the 1993 copyright contains a fourth type of word—words such as *puppy*—that may be infrequent in texts but that are either familiar in young children's life experiences or thought to be of interest to them. I refer to these as high-interest words. When children learn to read prior to formal schooling, they acquire high-interest words first (Durkin, 1966). These words are idiosyncratic to children, often consisting of their own names and names of favorite objects and people. However, as another instance of this group of words illustrates—*bundle of wiggles* from the 1993 copyright in Table 1—high-interest words in textbooks for a mass market encompass a wide selection of words, some of which may not be personally meaningful or interesting to young children.

Cognitive Load

Cognitive load has to do with the amount of new linguistic information to which readers need to attend to read a text. For proficient adult readers, cognitive load becomes a factor only when they are confronted with unfamiliar topics as occurs when nonspecialists are presented with a report on current biophotonics research. Theories of cognitive processing often focus

on the competing demands of recognizing words and comprehending the meaning of the text (LaBerge & Samuels, 1974). However, children who can recognize only a few idiosyncratic words, such as their names, may not have previously encountered most, if not all, of the words in the entry grade 1 texts in Table 1. Each unknown word that appears on a page of text can consume beginning readers' cognitive processing, at least until they can recognize some words automatically.

In the behaviorist model of reading acquisition, three aspects of cognitive load were used in designing beginning reading texts: (a) pacing of new words, (b) repetition of these words in subsequent texts, and (c) the ratio of new words to total words in a text. As I have already described, these principles were evident in the Scott Foresman preprimer that Gray et al. (1956) authored. Across the preprimers and primer of the program, a core group of words would be repeated at least 35 times. This number was based on the findings of Gates and Russell (1939), that average first graders required that number of repetitions to learn high-frequency words such as *the*, *of*, and *where* in highly prescribed texts, such as the example in Table 1 from the 1962 program.

When the perspectives of cognitive science were brought to word learning, features of words other than their frequency were shown to influence the exposure required for beginning readers to learn words. For example, words that represent easily imagable objects or events, such as *pumpkin* or *Halloween*, may require fewer repetitions than abstract words such as *the* and *of* (Laing & Hulme, 1999). Words that have consistent and common rimes—the vowel and any accompanying consonant(s)—require fewer repetitions than words with infrequent and/or uncommon rimes (Thompson, Cottrell, & Fletcher-Flinn, 1996). Further, when phonetically regular words are also highly meaningful, they may be learned more rapidly than phonetically regular but less meaning-

ful words (Metsala, 1999). The orthographic patterns of known words in children's word-recognition corpora can also influence acquisition of new words (Ehri, 1991).

Although many variables related to readers, texts, and instructional context influence word recognition (Adams, 1990; Stanovich, 2000), most studies of word learning have been conducted over short durations and with words presented individually, in phrases, or in a few sentences, at best. In Reitsma's (1983) study, midyear first graders and older, reading-disabled students read sentences with target words presented two, four, or six times. For the first graders, but not the reading-disabled students, the optimal number of repetitions appeared to be four. However, Reitsma's study does not shed light on the number of repetitions required by children at the very earliest stages of reading. All of Reitsma's mid-first graders had received 6 months of reading instruction and were not designated as reading disabled.

In Juel and Roper/Schneider's (1985) study of children's word learning in classrooms with two different textbook programs, the learning of words in the mainstream program, which had more multisyllabic words than the phonics textbook, was influenced by the number of times a word was repeated. The children who read from the phonics textbook were more influenced by a word's phonetic regularity than by its repetition. However, it is important to note that, because both programs were based on behaviorist principles of word repetition, words in the phonics program were repeated an average of 26 times and those in the mainstream program an average of 15 times.

As social constructivist perspectives have become prominent, features of entire texts have been advocated as lessening the cognitive load for beginning readers. A widely used application of social constructivist perspectives to texts is the leveling system of Reading Recovery (Peterson, 1991) and guided reading (Fountas & Pin-

nell, 1999). Texts are sorted according to four characteristics: (*a*) book and print features that include length of text, the match between illustrations and words in the text, punctuation, and layout and font; (*b*) content, themes, and ideas; (*c*) text structure, such as the predictability of episodes and accompanying text; and (*d*) language and literary features, including word difficulty.

Although percentages of high-frequency and phonetically regular words are not addressed in the guided and Reading Recovery leveling systems, it should be noted that, by definition, high-frequency words would be expected to appear prominently in these texts. By the same token, words with simple vowel patterns would be expected to appear in leveled texts as in most texts. For example, an analysis of all seven of the grade 1 levels of four prominent "little book" programs showed that 20% of the unique words were among the 100 most frequent words and 25% had vowel patterns with a one-to-one correspondence between phoneme and grapheme (Hiebert, 2001). In both cases, however, the appearance of these words varied substantially. That is, words among the 100 most frequent, such as *have* or *was*, might appear several times in a book of one level and then not again for several levels.

Although the presence of illustrations that support word recognition may lessen the cognitive load for beginning readers, research confirming that children's learning of words is enhanced by a strong picture-text match and by predictable text structures has been limited in scope (Hiebert & Martin, 2001). By contrast, researchers have established that poor readers over-rely on illustrations (Samuels, 1970) and predictable text structures (Leu et al., 1986). In a study of first graders' reading with books leveled according to the Reading Recovery and guided reading criteria, Johnston (2000) found that even the highest readers remembered only a small portion (30) of the 160 unique words in books over a 3-week intervention, whereas average readers recog-

nized 15 words, and the lowest readers recognized six words.

In all likelihood, many features of words and texts influence acquisition of new words. Further, these word and text features can be expected to interact in multiple and complex ways with reader factors. Research has yet to address many of the potentially critical variables and complex relations among variables that influence beginning readers' word recognition in texts. One topic is the manner in which illustrations and predictable text structures can be used to scaffold particular processes at certain points of development. However, there remains a theoretical and empirical foundation for addressing the principles of pacing and repetition of new words and ratio of new to total words (Ehri, 1991; Logan, Taylor, & Etherton, 1999; Stanovich, 1991). By examining how the words in current texts are introduced and repeated, the factors that influence cognitive load can begin to be delineated.

Overview of the Application of the TExT Model

The purpose of the TExT model is to describe the task that first graders confront in reading texts. In the section that follows, I use this model to describe the nature of the task represented by texts for beginning readers as a result of the mandates of California and Texas. The nature of the task is examined in two ways. First, I compare the features of texts that met the mandates for the 2000 Texas textbook adoption (Texas Education Agency, 1997) with those of a sixth program that was not submitted for consideration in Texas. Second, the features of the current programs are compared with historical antecedents.

For several reasons, I chose copyrights of Scott Foresman for the historical analysis. First, Scott Foresman was the focus of William S. Gray's framework beginning with its 1930s edition (Elson & Gray, 1930). Second, Chall (1967/1983) used it as one of two[2] programs to demonstrate problems

with mainstream textbook programs based on the behaviorist model. Finally, Scott Foresman has the longest publishing history of the current reading programs.

Task demands for a substantial portion of text were established for three points in current and historical programs. Task characteristics at entry level were the first interest. The knowledge that children are either expected to have or the amount of knowledge that they are expected to acquire during the first instructional unit sets the stage for children's school reading experiences. The nature of the task at the end of grade 1 and how this task compares to that for the beginning of grade 1 are also important. For a point of comparison, I examine exit levels of grade 1 against those of grade 2. The expectation has been that a substantial amount of solidification occurs in decoding and fluency during grade 2. By applying the same criteria to the end of grade 2 as to the end of grade 1, the quantity and nature of growth that is expected from first to second grade can be ascertained.

The application of the TExT model that follows, then, is aimed at (a) comparing textbooks that were written to comply with the Texas (1997) mandates and a non-Texas program and (b) comparing a textbook program over 4 decades: 1962, 1983, 1993, and 2000. In both sets of analyses, I focused on measures of linguistic and cognitive characteristics of the tasks of texts: total and unique words, number of repetitions of words, and types of words (i.e., high frequency, phonetically regular). The tasks of texts were established for the entry and exit levels of grade 1 and the exit level of grade 2.

An Examination of First-Grade Texts: Past and Present

Selecting Textbook Components

Program selection. This analysis focused on the five textbook programs that met the criteria of the Texas Education Agency (1997) for its fall 2000 textbook adoption. The names of the programs and the letters by

which I refer to them in the subsequent analyses are (a) *Scott Foresman Reading* (Afflerbach et al., 2000)—program A; (b) *Collections: Harcourt Reading/Language Arts Program* (Farr et al., 2001)—program B; (c) *McGraw-Hill Reading* (Flood et al., 2001)—program C; (d) *Literacy Place* (Scholastic, 2000)—Program D; and (e) *Open Court Reading* (Adams et al., 2000)—program E. A sixth program— Houghton Mifflin's *Invitations to Literacy* (Cooper et al., 2001)—is widely used but was not submitted for consideration in Texas. This program—program F—was included in the present analysis because it illustrates a program not governed by the Texas mandates. Three of the six programs had copyrights of 2000, and three had copyrights of 2001. Because the program used in the historical analysis, program A, had a copyright year of 2000, I used that year throughout for the most recent programs.

To obtain the historical data, I analyzed copyrights from 1962 through 1993[3] for program A. Characteristics of this program prior to 1965 are summarized in Chall's review (1967/1983) and were determined to be stable from 1920 through the early 1960s. Consequently, this historical analysis begins with the 1962 copyright (Robinson, Monroe, Artley, & Huck, 1962). The other two copyrights chosen were (a) 1983 (Aaron et al., 1983) subsequent to Chall's (1967/1983) critique of mainstream textbook programs but prior to the questions about texts based on readability formulas that were raised in *Becoming a Nation of Readers* (Anderson et al., 1985) and (b) 1993 (Allington et al., 1993), by which point all major programs consisted of authentic literature.

First-grade programs have many components available for purchase in addition to textbooks, including audiotapes, CD-ROMS, and workbooks. Even within the category of textbooks, clients can select from sets of trade books; small, single-text books described as little books; guided or leveled readers; and phonics readers. But each program contains a collection of texts that is typically called an anthology. Most

publishers provide five or six anthologies for first grade. When Texas and California provide funds to districts, it is for the core components of textbook programs. In the 2000 Texas adoption, the allocated expenditure per first-grade student—$95—was almost exactly the cost of the anthologies for programs A through D. Other components would need to be purchased with district funds that are often not available in schools serving lower-income populations.

The use of anthologies as core program components was confirmed by, first, studying publishers' catalogs and Web sites. On the basis of this examination, I purchased a program's core texts and the accompanying teacher's guide. Next, I examined the teacher's guide to determine the components that were the focus of lessons. If entire lessons were based on a text, the text was identified as core. For programs A through D and program F, lessons centered on the texts in the anthologies. For example, 40 pages in the teacher's guide of program A are devoted to instructional recommendations and activities for the text that illustrates the 2000 copyright in Table 1. The teachers' guides for all of the programs except program E followed a similar pattern. Consequently, the text features that I describe in this study for programs A through D and for program F are those of the anthologies.

In program E, a set of phonetically regular texts form part of the core instruction. Program E also presents a set of six paperback anthologies for the first half of grade 1 and two hardback anthologies for the second half of the year as core to instruction. Because the instruction in the teacher's guide features the phonics readers as well as the six anthologies, I analyzed text from both sources for this study.

Selection of texts from anthologies. Children and teachers experience a textbook program through individual texts that form the centerpiece of lessons. But when texts are presented as an instructional program rather than as trade books that are se-

lected or sold individually, links across individual texts are assumed. A large portion of an instructional program needs to be studied in order to identify its salient characteristics. At the same time, the instructional unit studied cannot be so large that it obscures the unique characteristics of the initial period of instruction where particular features may be emphasized at one point and not another. In her landmark study, Chall (1967/1983) used 10 texts as the unit for analyzing text features. I also used this procedure for this study, because it yields a sizable corpus of text. Three units of 10 texts were analyzed: (*a*) entry texts of the grade 1 core components, (*b*) exit texts for grade 1, and (*c*) exit texts for grade 2.

Coding Categories

A hypertext program called the TExT Analyzer (Martin & Hiebert, 2003) was developed to aid in the analyses of texts. The features of 10 texts in a unit (i.e., entry grade 1, exit grade 1, and exit grade 2) were analyzed for total words, unique words, repetitions of unique words, high-frequency rating of unique words, and the vowel decodability of unique words. A description of each of these features follows.

Number of total and unique words. Total words are reported as a function of a unit of 10 texts. In the analyses that follow, the average number of total words per text is reported.

A word was counted as unique in its first appearance within the 10-text unit. Because texts are of different lengths, I report unique words as a function of 100 running words of texts. In that each unique word is counted only a single time in the entire unit, this measure refers to the number of *new*, unique words within the unit of 10 texts. In addition to the new, unique words in a 100-word excerpt, there are likely to be a number of other words that have already been counted as unique in the unit. This distinction between "new, unique" words and "unique" words in an excerpt can be illustrated with the text in this paragraph.

There are six *new* unique words that have not appeared in this article prior to this paragraph: number, function, lengths, running, counted, excerpt. However, the entire text of this paragraph has 55 unique words in all, 49 of which have been used in this article before.

Number of repetitions of unique words. The TExT Analyzer counts all occurrences of a word in a unit. For the present analysis, I chose to attend to one aspect of repetition—the number of words that appeared a single time in a unit. Not only was there a lack of repetition of words in texts, but initial analyses showed that the vast majority of words were repeated fewer than five times and that only a small percentage—the 300 most frequent words—appeared more than five or six times. Further, these analyses showed that a significant percentage of words in current copyrights appeared a single time. I focused on this aspect of word repetition in the present analysis because of the potential influence of single-appearing words on children's reading and learning to read. When a word appears a single time in a text—especially when that word is an infrequently occurring word—children's understanding of the word needs to be developed. Further, even in a repeated-reading context, opportunities to read the word are limited. This aspect of word repetition is also important to understand in school contexts where an increasing number of children are learning to speak English proficiently at the same time that they are learning to read.

Types of words. To keep the focus on the influence of state policies, I addressed only two types of linguistic content in this study: high-frequency words and phonetically regular words. Although the other two types of words, morphological derivatives and high-imagery words, are critical in understanding children's learning words from text, neither group of words is addressed in current state policies that are the focus of this study.

The simple morphological derivatives of unique words were classified with their root or related word. Simple morphological derivatives were defined as inflected endings (-s, -es, -ed, -ing), comparisons (-er, -est), and possessives (-'s, -s'). The TExT Analyzer was programmed to accommodate these derivatives. Thus, *walks, walked,* and *walking* were coded as the word *walk; bigger* and *biggest* were coded as the word *big.* This integration of morphological derivatives with root words decreased the number of unique words per 100 as follows: .6 for entry grade 1 texts, 1 for exit grade 1 texts, and 2 for exit grade 2 texts.

The linguistic content of a unique word was classified a single time for the present analysis. The first classification was according to a word's high-frequency status. I classified the remaining words—that is, less frequent words—according to their vowel pattern. The criteria for high-frequency status and vowel patterns are described after the reasons for single rather than dual coding of a word are explained.

I chose to code words once rather than to use dual coding for both high frequency and phonetic regularity for two reasons. First, although many high-frequency words have phonetically regular vowel patterns, a substantial portion—particularly those among the first 100 most frequent words—have either variant vowel patterns or complex consonant clusters. The percentage of words with vowel patterns of vowel-consonant (VC), consonant(s)-vowel-consonant(s) (CVC), consonant(s)-vowel-vowel-consonant(s) (CVVC), and consonant(s)-vowel-consonant(s)-e (CVCe) among the 300 most frequent words in the TExT Analyzer program is 53 and among the 100 most frequent words 50. Although phonetically regular, a quarter of the latter group has complex consonant clusters. Second, the frequency of appearance in texts, including those that children are likely to see in reading beyond the instructional program, is highly discrepant between the 300 most frequent words and words beyond this point. For example, in considering the words in the excerpt

from the 2000 program in Table 1, data on word frequency indicate that children are 117 times more likely to have encountered the highly frequent words *went* and *me* than the less frequent but phonetically regular words *quack* and *kick* in any texts previously (i.e., texts beyond their instructional program) (Carroll, Davies, & Richman, 1971; Zeno et al., 1995). The high-frequency words, then, can be considered words with which children are likely to have had more encounters, both in and beyond the instructional program. The phonetically regular words are ones that depend on children's ability to apply their phonics knowledge.

High-frequency words were derived from two databases: Carroll et al.'s (1971) corpus based on approximately 5 million words of text from grades 3 through 9 and Zeno et al.'s (1995) corpus of 17.25 million words from grades kindergarten through college. I used the rankings of words from these two lists to establish a group of the most frequent 1,000 words, with words identified in clusters of a hundred. That is, a word such as *tree* falls within the "300" group, whereas *the* is in the first 100 group.

With regard to phonetically regular words, the TExT Analyzer sorts words on an eight-point scale of easy to difficult vowel patterns: (*a*) simple long-vowel (e.g., *go*) words; (*b*) simple short vowel without blends or digraphs (e.g., *at, cat*); (*c*) simple short vowel with blends or digraphs (e.g., *chat, bath*); (*d*) long vowel represented by two graphemes, without blends or digraphs (e.g., *meet, ride*); (*e*) long vowel represented by two graphemes, with blends or digraphs (*shine, teeth*); (*f*) r-controlled vowels (e.g., *car*), l-controlled vowels (e.g., *ball, hold*); (*g*) vowel diphthongs (e.g., *oil*) and variant vowels (e.g., *bread*); and (*h*) multisyllabic words (e.g., *geranium*).

The choice of using the 300 most frequent words and the phonetically regular patterns through category (*f*) on this scale— that is, r- and l-controlled vowels—was based on an analysis of assessments used at the end of grade 1. Four assessments were

examined: the California Achievement Test (CTB/McGraw-Hill, 1992), the Stanford Achievement Test (Harcourt Brace, 1996), the Developmental Reading Assessment (Beaver, 1997), and the Basic Reading Inventory (Johns, 1997). An average of 90% of the words on these assessments was accounted for by the 300 most frequent words (Carroll et al., 1971; Zeno et al., 1995) and monosyllabic words with the vowel patterns through r- and l-controlled vowels.

A curriculum of the 300 most frequent words and words with simple, long, and r- and l-controlled vowel patterns is more challenging than the content of the first time period of beginning reading programs. At this point, one would expect the 100 or even 25 most frequent words and words with simple vowel patterns to be the focus. Further, the exit second-grade curriculum would be assumed to be substantially more difficult than the 300 most frequent words and phonetically regular words with vowel patterns through r and l controlled. However, to permit comparisons, I applied the same criteria to all three levels of entry and exit first-grade and exit second-grade texts.

Results

The summary of the 2000 programs is the point of comparison for the description of the historical copyrights of program A. Consequently, the analyses begin with descriptions of the six textbook programs published in 2000. The patterns in these programs across the three time periods are presented initially, followed by the summary of patterns in the historical copyrights of program A.

Characteristics of Textbooks: 2000

The data on cognitive load and linguistic content features of the six 2000 programs are presented in Table 2. As is evident in Table 2, when five features of three units of six textbook programs are the focus, the amount of data is substantial. On closer examination, however, the similarities across the programs at particular levels (e.g., entry

TABLE 2. Features of Six Reading Programs (2000) at Three Levels

	Number of Words		Unique Words (%)		
Level/Program	Total per Text	New Unique per 100 Words	Singletons	High Frequency	Phonetically Regular
Grade 1:					
Entry:					
A	83	21	40	50	42
B	95	21	37	34	56
C	115	19	38	55	30
D	124	21	47	45	37
E	95	21	43	32	54
Mean A–E	**100**	**21**	**41**	**43**	**44**
F	76	38	66	16	36
Exit:					
A	334	19	40	37	30
B	336	17	40	40	33
C	435	16	38	37	26
D	366	20	45	32	29
E	425	17	42	34	29
F	351	21	49	33	30
Mean A–F	**375**	**18**	**42**	**36**	**30**
Grade 2:					
Exit:					
A	630	18	41	25	30
B	569	22	48	23	27
C	781	17	40	24	27
D	1081	14	37	21	27
E	1020	16	42	20	24
F	809	16	42	23	30
Mean A–F	**851**	**17**	**42**	**23**	**28**

grade 1) and across levels are substantial. Consequently, with one exception, I chose to describe a "typical" text for each level. In light of the focus of this article on the influences of state policies on reading materials, I deemed identifying general patterns of reading textbooks over the critical period represented by grades 1 and 2 to be of greater importance than delineating the often slight differences across programs.

I use the excerpts of texts from entry and exit grade 1 levels as well as historical time periods in Table 1 to illustrate the prototypical patterns. These excerpts consist of 50 words, in compliance with copyright laws. The 50 words that appear in Table 1 come from the middle of either entry or exit grade 1 units of program A's copyrights (Aaron et al., 1983; Afflerbach et al., 2000; Allington et al., 1993; Robinson et al., 1962). As can be seen, the 1962 entry grade 1 program is represented by fewer than 50 words. This ex-

cerpt is the entire text in the middle of the program. As will become evident in the presentation of results that follows, the primary difference between exit grade 2 texts and exit grade 1 texts is length. Because differences in total number of words cannot be captured within the constraints of a 50-word excerpt, examples of exit-level second-grade texts are not included in Table 1.

The entry grade 1 level of the non-Texas program is described separately. This program differed substantively on most features from the five Texas-approved programs. At the other levels, however, the characteristics of the non-Texas program matched those of the Texas-approved programs. Thus, except for the entry, grade 1 description, the prototypical text represents the average of features across all six programs.

The task for beginning first graders. The data in Table 1 indicate that the typical text

for beginning first graders will be similar, whatever choice a school district makes from among the five Texas-approved textbook programs. A typical text is 100 words in length. For every 100-word text, 21 unique words will appear for the first time in the program. Nine of these new words will appear a single time in that text as well as in the entire unit. That is, about one in every 10 words will be a new word that, once figured out, will not appear again in either the text or unit. In terms of the linguistic content of a typical 100-word text, nine (43%) of the new, unique words will be among the 300 most frequent words. Another nine (44%) will be phonetically regular with either CV (e.g., *me*) or CVC (e.g., *cat*) patterns.

Because I chose the excerpts in Table 1 from the middle point of a unit, an excerpt does not necessarily have the "average" features. In the excerpt from the 2000 entry first-grade text, note that the cognitive load is higher than in the typical text. The excerpt has almost twice the number of new, unique words—18 rather than the 10 or 11 that are typical. The rate of single-appearing words (77%) is also higher than the typical rate of 41%. Because most of the singletons have the CVC vowel pattern that typically is an early instructional focus—*slip, kick, quack, hill, win, hid, rock, trip, kids, luck(y)*—this rate of singletons reflects the underlying perspective that children should be able to read words with letter-sound correspondences that have been presented in lessons in the teacher's manual.

The higher number of new, unique words in the excerpt in Table 1 for entry first-grade text indicates the kind of text throughout program F's first unit. At 38 new, unique words per 100, program F has almost twice as many new, unique words as the other five programs. Further, two out of three of these new, unique words will appear a single time in program F. Whereas almost 90% of the new, unique words will be among the 300 most frequent or have phonetically regular vowel patterns in the

typical text of the other five programs, only about half (52%) of the words in program F are of these types. If numbers of single-appearing new, unique words are a factor in young children's reading acquisition, the task confronting beginning readers in schools with program F is even more challenging than the task in schools with programs A through E.

The task for exiting first graders. Unlike the entry level for grade 1, the texts of program F are similar to those of the five Texas-approved programs for the exit first-grade unit. The typical exit first-grade text across the six programs is 375 words long. For every 100 words of text, there will be 18 new, unique words. Of these 18 new words per 100 running words, approximately eight will appear a single time in the text as well as the unit. In the 50-word excerpt from an exit-level, grade 1 text in Table 1, this pattern is evident. In the excerpt, 10 new, unique words are introduced. Six of these 10 words appear a single time in the text and unit.

The typical text will have six (36%) new, unique words that are among the 300 most frequent words. Another five of the 18 (30%) new, unique words will have vowel patterns through r-controlled vowels. Both numbers of new, high-frequency words in the exit grade 1 excerpt in Table 1 and of new, phonetically regular words are close to the typical rate of introducing new linguistic content.

The task for exiting second graders. The typical text during the last unit of second grade is 815 words long. Every 100-word section of text introduces 17 unique words that have not appeared in the unit previously. Seven of these words will appear only in this 100-word portion of text and not again in either the rest of the text or unit.

With respect to linguistic content, four of the 17 (23%) new, unique words per 100 running words of text will be among the 300 most frequent words in the typical text. An additional five words (28% of new, unique words) will have phonetically reg-

ular vowel patterns (those represented by categories one through six in the scheme used in the TExT Analyzer).

A comparison of the tasks from entry grade 1 to exit grade 2. With respect to cognitive load features, the largest difference across the texts from entry grade 1 to exit grade 2 lies in the length of texts. At the point where children are beginning to read, the amount of text that needs to be processed to provide a complete story is substantially less than at the end of grades 1 and 2—100 words per text relative to 375 at the end of grade 1 or 851 total words per text at the end of grade 2.

On only one other feature do the entry first-grade texts differ from the exit first-grade and exit second-grade texts: the presence of more phonetically regular words in the entry first-grade texts. Although there is a developmental progression in linguistic content, textbooks expect beginning first graders to recognize these phonetically regular words at the same pace as exiting first- and second-grade students. Within every 100-word text, there will be 21 new, unique words for entry first graders and 18 and 17 words per 100, respectively, for exiting first- and second-grade students. The assumption that entry first graders can handle the same cognitive load in their reading as students at the end of first and second grades is also evident in the similar rate at which words appear a single time across a unit: 41% for entry first-grade texts and 42% for exit first- and second-grade texts.

Patterns in Historical Copyrights

As is evident in Table 3, where the cognitive load and linguistic features of the three historical copyrights of program A are presented, even summarizing a single program over 3 decades involves a substantial amount of information. To ensure that critical patterns are evident for the comparison with current texts, I summarize the most distinguishing patterns of a copyright.

1962. The unique pattern of the 1962 copyright is the brevity of the entry-level,

first-grade texts. Although the average entry-level, first-grade text in 1983 also has few new, unique words and a low percentage of single-appearing words, the entry-level text in 1962 is more than four times shorter than the any of its counterparts in subsequent decades. The excerpt that appears in Table 1 is an entire, average text in the entry level of the first-grade program.

1983. In 1983, the number of unique words per 100 falls by half from that in 1962. At the same time, the average text is almost 10 times that of the entry first-grade texts of 2 decades prior. On other features such as the types of words and singletons, however, the characteristics of 1983 are remarkably like those of 1962. Particularly by the exit grade 1 level, the typical texts from the two historical periods are almost indistinguishable.

1993. Two substantial changes occurred in this copyright: (*a*) new, unique words per 100 words increased by 500% (beginning of grade 1) and 100% (end of grade 1) and (*b*) the percentage of these new, unique words that were single-appearing words was nine times greater (beginning of grade 1) and 2.5 times greater (end of grade 1) than in the previous copyright. The 1993 copyright is the first one where the number of new, unique words per 100 is higher at the entry first-grade level than for subsequent levels. The excerpt of an entry-level, first-grade text (1993) in Table 1 illustrates the increased number of unique words that are new and single appearing.

The 2000 copyright in relation to previous copyrights. The uniqueness of the 2000 copyright, relative to that of the previous decade (1993), is the increase in phonetically regular words in the entry first-grade texts. The typical entry first-grade text in 2000 has almost twice the number of phonetically regular words (44% for 2000; 24% for 1993).

Although there were changes in phonetically regular words, the shifts in cognitive load that occurred with the 1993 program have not been modified in the entry first-

TABLE 3. Features of Historical Texts at Three Levels from Three Decades of Program A

Copyright Year/Level	Number of Words		Unique Words (%)		
	Total per Text	New Unique per 100 Words	Singletons	High Frequency	Phonetically Regular
1962:					
Grade 1:					
Entry	18	10	0	50	39
Exit	378	8	7	60	17
Grade 2:					
Exit	603	11	19	40	29
1983:					
Grade 1:					
Entry	144	5	5	50	33
Exit	481	10	16	53	20
Grade 2:					
Exit	865	12	29	30	26
1993:					
Grade 1:					
Entry	79	29	46	41	24
Exit	385	20	41	34	29
Grade 2:					
Exit	750	17	41	24	28

grade texts of 2000: (*a*) the number of new, unique words per 100 has remained in the 20+ range, and (*b*) the percentage of these new, unique words that are single appearing has stayed in the 40+% range.

The 2000 copyright is also similar to the 1993 copyright in that text length is the only feature that differentiates entry first-grade from exit first- and second-grade texts. In the rate at which new, unique words are introduced per 100 words and the percentage of new, unique words that appear at a single level, the figures for entry first-grade text are the same as those for exit first- and second-grade text. Further, by exit level of first grade, the 2000 copyright is no longer distinguished in linguistic content from the 1993 copyright.

In summary, several watersheds in entry-level texts can be seen across the historical copyrights, all of which are present in the 2000 programs. The first was the increase in the length of entry first-grade texts, begun by the substantial jump in the 1983 texts. The typical text in 2000 is approximately 40% shorter than its 1983 counterpart. However, it is over five times longer than the typical text of 1962.

The second watershed occurred in the 1993 copyright with the increase in the number of new, unique words per 100 and in the percentage of these words that are singletons. The changes in 1993 represented a 600% increase in the number of new, unique words per 100 from programs of previous decades. The number of single-appearing words increased by almost a magnitude of 1. The rate of new, unique words per 100 and number of single-appearing words was somewhat modified in the Texas-approved entry first-grade texts: 21 (2000) rather than 29 (1993) for the former and 41 (2000) rather than 49 (1993) for the latter. However, the rate at which new, unique words are introduced in 2000 is more than twice as high as pre-1993, and the rate of singletons is eight times as high.

The third watershed was the increase in phonetically regular words in the 2000 copyright. As the excerpt from an entry first-grade text in 2000 shows, however, these decodable words are often presented in the texts that were the result of the previous watershed—predictable texts where illustrations can be used to figure out highly imagable words.

Discussion

Have the policies of the nation's two largest states influenced the first-grade texts of U.S. reading programs? The answer is an unequivocal yes. The most recent Texas mandates are reflected in entry-level texts that have more phonetically regular words than the texts created for the last Texas copyright or a program that was not created specifically for Texas. This feature of textbooks is visible and the source of considerable debate (Allington & Woodside-Jiron, 1999). But debates about the types of words have diverted attention from the massive changes in the cognitive processing demands of beginning reading texts that occurred with the 1987 and 1993 textbook adoptions in California and Texas. The texts of these previous textbook adoptions represented a sea change in textbook design for beginning readers. With the mandate for noncontrolled or authentic texts in California in 1987 and in Texas in 1993, changes in cognitive load characteristics were substantial. The number of unique words relative to the number of total words was no longer of concern. Words did not need to be repeated a particular number of times. Indeed, singletons could occur at the same level in texts for beginning readers as in texts for older readers.

The changes in cognitive load precipitated by the mandates for authentic texts remain evident in the 2000 Texas-approved textbooks for beginning readers that are controlled for the linguistic feature of decodability. The reading programs of 2000 expect children in the first trimester of first grade to acquire new words at the same pace and with the same amount of repetition as children who are completing second grade and ready to move to third grade— the reading level that congressional initiatives identify as essential for the nation's children to attain. Beginning readers receive texts with 21 new words per 100, 40% of which appear a single time in an instructional unit. Exiting second graders are expected to read texts with 17 new words per 100, 42% of which are singletons. The policies of California and Texas in their 1987 and 1993 textbook adoptions that removed cognitive processing scaffolds for beginning readers have not changed with prescriptions for decodable words in the 2000 textbook adoptions.

The first question about the cognitive load of current beginning reading textbooks has to do with its appropriateness for U.S. children at the beginning of the twenty-first century. If the majority of an age cohort begins first grade able to read the entry-level texts of the 1993 and 2000 copyrights, or if research shows that beginning readers can assimilate 21 new words for every 100 total words, these changes should be applauded. Other features of textbook programs can then be addressed, such as the relative balance of informational and narrative text.

Because national and state testing programs begin at later grades, information on the profiles of cohorts of entering first graders is limited. The existing studies suggest that a majority of first graders do not learn to read as quickly as the tasks of current first-grade reading texts demand. In the Foorman et al. (1998) study, even second graders who were in classrooms using the 1993 copyright of program F finished the year unable to read primer-level text, which requires proficiency with the 100 most frequent words and CVC words. In a study conducted by Hoffman, Roser, Patterson, Salas, and Pennington (2001), about 40% of a first-grade cohort was unable to read entry-level first-grade texts at the end of grade 1.

Related to the question of appropriateness of these texts' fast pace of word introduction and low levels of word repetition is the role of the teacher in scaffolding entry-level texts for beginning readers through guided reading (Fountas & Pinnell, 1999). Evidence to date, though limited, suggests that the guided reading, in itself, cannot overcome the presence of numerous unfamiliar words in texts (see, e.g., Hoffman et al., 2001). In Johnston's (2000) previously cited study, even the most proficient students were able to recognize less than 20%

of the unique words that were presented in guided reading lessons during the latter part of first grade. The lowest-performing students recognized 4% of the unique words.

It could be argued that there are many instructional activities other than the reading of the anthology through which children come to recognize words. Even if independent word-recognition strategies are supported through writing and sorting word cards, texts provide beginning readers with opportunities to apply their word-recognition knowledge. Without explicit connections between instruction and the primary texts that they are given to read, children will not make the connection between the strategies they are taught and the texts they read (Juel & Roper/Schneider, 1985).

Over the past 2 decades, the population in U.S. first-grade classrooms has become more linguistically and culturally diverse. Over this same period, the task that entry-level textbooks pose for first graders has become more complex. Although beginning readers in 1983 were exposed to five new words for every 100 words of text, their counterparts in 2000 are introduced to 21 new words in the same amount of text. In 1983, first graders rarely saw a unique word only once. In 2000, nine of every 21 new, unique words appear a single time.

The rapid changes in first-grade textbook programs over the past 2 decades reflect the decisions of policy makers and, subsequently, publishers. Policy makers have been much more active in designating textbook characteristics than researchers and theorists have been in studying textbook characteristics. Little scientifically based research underlies these texts, particularly as the features change from one textbook adoption to the next. The TExT model illustrates the type of model-building that is required to ensure that many more children learn to read well. Foorman, Francis, Davidson, Harm, and Griffin (2004) are also designing and testing a model of appropriate texts for beginning readers. Within the Foorman et al.

project, lexical, semantic, and syntactic features of individual words are described in addition to establishing the potential for accuracy in words' grapho-phonic features as a function of introduction in the teachers' manuals. In addition to models on word recognition, other facets of the task that texts pose require attention, such as features that enhance student engagement (Alvermann & Guthrie, 1993) and the demands on background knowledge.

The solution to today's classroom contexts is not Gray's carefully scripted texts; there were, as Chall (1967/1983) pointed out, major gaps in Gray's model, not least of which pertain to the interest of twenty-first-century students in texts such as the 1962 and 1983 examples in Table 1. The balance of the features that contribute to engagingness (Hoffman et al., 1994, 2002) needs to be studied in relation to the opportunities children require to become independent readers. Without substantially greater involvement by researchers in identifying the characteristics of texts that support and detract from reading acquisition, it is likely that the rapid policy shifts that have been evident in Texas and California will continue, and increasing numbers of U.S. beginning readers will be left behind.

Notes

1. For sake of uniformity, I describe this publisher as Scott Foresman. Prior to the 1980s when the company assumed this name, the company was Scott, Foresman, and Company.
2. The other mainstream program that Chall reviewed has since ceased to be published—Ginn & Company.
3. I examined the 1970 and 1974 copyrights of Scott Foresman, but the results are not included in this analysis. These copyrights were not received well in the marketplace and were outsold by the company's copyrights from the 1960s. The objective of this review is to provide a historical context for current texts, not to provide a comprehensive review of historical trends in reading textbooks. Consequently, data on the

1970 and 1974 copyrights are not included in this review.

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