A comparison of first graders' reading with little books or literature-based basal anthologies

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Beginning reading materials are a recurring source of interest and concern to reading educators (Chall, 1967/1983; Hoffman, Sailors, & Patterson, 2002). Over the past decade they have attracted much attention, and a wide variety of voices and stances are discernible with regard to this issue. Large states such as California and Texas have adopted statewide policies mandating the use of "decodable" texts in their beginning reading classrooms (California English/Language Arts Committee, 1999; Texas Education Agency, 1997). Simultaneously, teachers in many parts of the United States have organized their reading materials in terms of guided reading levels (Fountas & Pinnell, 1999). From other quarters, scholars have made the argument that investigations should focus on the nature of high-quality instruction and not on the curriculum materials themselves (Allington & Woodside-Jiron, 1998; Roller, 2001).

In this article, we take the stance that well-designed curricular materials offer opportunities to teachers to plan good instruction (Ball & Cohen, 1996; Ball & Feiman-Nemser, 1988) and thereby merit empirical attention. Texts are by no means the only important element in the reading acquisition process. As Barr (1972) and Juel and Roper/Schneider (1985) have reported, instructional method and text combine to shape children's word recognition strategies. Therefore, the efficacy of any model of text-based features cannot be understood in isolation from the instructional context in which it is used. Rather than attempting to separate the relative influence of texts versus instruction, the reading text is viewed here as a tool that *mediates* instruction (Vygotsky, 1978; Wertsch, 1998). Good and experi-

THIS STUDY examined the effectiveness of a little book curriculum in facilitating the independent word-solving skills of first-grade readers. The curriculum was based on a theoretical model that identified two critical dimensions of text-based support for beginning readers: linguistic content and cognitive load.

The 15-week little book intervention was conducted in four first-grade classrooms of an inner-city school in a large urban district. Two classes were assigned to the intervention group, and two were assigned to the comparison group. The intervention group read from little books leveled according to features of linguistic content and cognitive load. The comparison group read from basal literature texts. Word lists and graded passages from the Qualitative Reading Inventory (QRI) served as the pre- and posttest measures. ANCOVA and chi-square analyses showed that children in the intervention group performed at significantly higher levels on the posttests than their counterparts in the comparison group. These results applied equally to the word lists and the passage reading tasks and with children at all reading levels—high, average, and struggling.

ESTE ESTUDIO examinó la eficacia de un programa de lectura de "libros pequeños" (textos breves narrativos y expositivos) para facilitar las habilidades de procesamiento de palabras de lectores de primer grado. El programa estaba basado en un modelo teórico que identifica dos dimensiones críticas de apoyo basado en el texto para lectores iniciales: el contenido lingüístico y la carga cognitiva.

Durante 15 semanas se realizó la investigación sobre los "libros pequeños" en cuatro aulas de primer grado de una escuela de sectores urbanos de bajos ingresos situada en un gran distrito urbano. Se asignaron dos cursos al grupo de intervención y dos al grupo de comparación. El grupo de intervención leyó "libros pequeños" nivelados de acuerdo con las características del contenido lingüístico y la carga cognitiva. El grupo de comparación leyó antologías básicas de textos literarios (textos controlados usados en las escuelas de los EE. UU.). Como medidas para la evaluación previa y posterior se usaron listas de palabras y pasajes de texto graduados del Inventario de Lectura Cualitativa (QRI). Los análisis de co-variancia (ANCOVA) y chi-cuadrado mostraron que los niños en el grupo de intervención se desempeñaron significativamente mejor en las evaluaciones finales que los niños del grupo de comparación. Se obtuvieron los mismos resultados en las tareas de lectura de listas de palabras y de pasajes de texto, así como con los niños de todos los niveles de lectura: alto, promedio y con dificultades.

DIESE STUDIE untersuchte die Effektivität eines Lehrplanes mit kleinen (dünnen) Büchern zum Erleichtern selbständiger Wort-Lösungsfähigkeiten von Lesern in der ersten Klasse. Der Lehrplan wurde nach einem theoretischen Modell erstellt, das zwei kritische Dimensionen der text-basierten Unterstützung für Leseanfänger identifizierte: linguistischer Inhalt und kognives Erfassen.

Die 15-wöchige Intervention mit kleinen Büchern wurde in vier Klassenräumen mit Erstklässlern einer großstädtischen Schule durchgeführt. Zwei Klassen wurden der Interventionsgruppe zugeteilt und zwei wurden der Vergleichsgruppe zugeteilt. Die Interventionsgruppe las von kleinen Büchern, die nach Eigenschaften linguistischen Inhalts und kognitiver Belastung ausgerichtet waren. Die Vergleichsgruppe las aus grundlegenden Literaturtexten. Wortaufstellungen und bewertete Passagen aus der Qualitativen Lesematerial-Zusammenstellung—QRI (Qualitative Reading Inventory) dienten als Anfangs- und Abschlußmaßstäbe. ANCOVA und Chi-Quadratanalysen zeigten, daß Kinder in der Interventionsgruppe wesentlich höhere Einstufungen bei den Abschlußprüfungen erfüllten als ihre Gegenüber in den Vergleichsgruppen. Diese Ergebnisse galten gleichermaßen bei den Wortlisten und den Leseabschnittaufgaben und bei Kindern aller Leseeinstufungen—höherer, durchschnittlicher, und sich abmühender.

ABSTRACTS

A comparison of first graders' reading with little books or literature-based basal anthologies

La lectura de "libros pequeños" o de antologías básicas literarias en primer grado: Una comparación

Ein Vergleich im Lesen der Erstklässler mit kleinen Büchern oder literatur-basierter, grundlegender Anthologien

小学１年生が行う小書と文学に基づいた基礎的文集の読みの比較

　　本研究では、小学１年生の読み手の独自の単語処理能力を促進する上での小書カリキュラムの有効性を調べた。カリキュラムは、言語的内容と認知的負荷という、初級レベルの読み手のためのテキストに基づいた支援の２つの重要な領域を特定する理論的モデルに基づいていた。
　　１５週間の小書介入が、ある大都市地区のある都心の学校の小学１年の４つの教室で実施された。２つのクラスは、介入群に振り分けられ、もう２つのクラスは、対照群に振り分けられた。介入群は、言語的内容と認知的負荷の特徴によって均等にされた小書から抜粋して読んだ。対照群は、基礎的な文学テキストから抜粋して読んだ。質的リーディング目録 (QRI)　の単語リストと段階別文章が、事前テスト及び事後テスト測定法となった。共分散分析とカイ２乗分析の結果、事後テストにおいて、介入群の子供達が対照群の子供達よりも有意に高い点を取ったことが示された。こうした結果は、単語リストや文章読解タスクに同様に当てはまり、高いレベル、平均的レベル、苦労するレベルといったリーディング力のあらゆる段階の子供達に同様に当てはまった。

Une comparaison en lecture d'éléves de première année avec de petits livres ou des manuels d'anthologies basées sur la littérature

CETTE ÉTUDE a examiné l'efficacité d'un programme utilisant des petits livres sur le développement des compétences dans la lecture de mots chez des enfants de première année. Le programme reposait sur un modèle théorique identifiant deux dimensions critiques de supports basés sur des textes destinés à des lecteurs débutants : le contenu linguistique et la charge cognitive.

L'intervention de 15 semaines avec les petits livres a été conduite dans quatre classes de première année d'une école de centre-ville (milieu défavorisé) d'une grande circonscription urbaine. On a assigné deux classes au groupe d'intervention et deux autres au groupe de comparaison. Le groupe d'intervention a lu dans des petits livres de différents niveaux quant au contenu linguistique et à la charge cognitive. Le groupe de comparaison a lu des textes provenant de manuels de littérature. Des listes de mots et des passages gradués provenant de l'Inventaire de Lecture Qualitative (*Qualitative Reading Inventory*) ont été utilisés comme pré- et post-tests. Une ANCOVA et des *chi* carrés ont montré que les enfants du groupe d'intervention ont atteint des niveaux significativement plus élevés aux post-tests que leurs correspondants du groupe de comparaison. Ces résultats s'appliquent aussi bien aux tâches de listes de mots que de lecture de passages et valent pour les enfants de tous les niveaux de lecture : élevé, moyen ou en difficultés.

Обучение чтению первоклассников: по небольшим книжкам или по литературным антологиям?

Исследовалась эффективность обучения чтению по небольшим книжкам для развития навыков независимого решения языковых задач. Учебная программа базировалась на теоретической модели, которая идентифицировала два критических параметра текстовой поддержки для начинающих читателей: лингвистическое содержание и познавательную нагрузку.

　　Пятнадцатинедельное вмешательство на основе маленьких книжек проводилось в четырех первых классах городской школы в большом мегаполисе. Два класса были выбраны в качестве интервенционной группы, а два — в качестве контрольной. Интервенционная группа училась читать по небольшим книгам, подобранным по особенностям лингвистического содержания и познавательной нагрузки. Контрольная группа читала по основному учебнику-антологии. Списки слов и абзацы различной трудности из *Описи качественного чтения* (QRI) служили материалом для пред-и постиспытательных замеров. Согласно анализу ANCOVA и хи-квадрат сделан вывод о том, что дети из интервенционной группы выполнили посттесты на значительно более высоком уровне, чем их сверстники из контрольной группы. Эти результаты относятся в равной степени к спискам слов и чтению абзацев разной трудности, а также ко всем детям — с отличными, средними и слабыми академическими успехами.

enced teachers have the knowledge, experience, and power to seek out a variety of texts to accomplish different instructional goals for their students. By the same token, teachers who are constrained from making alternative choices by inexperience; lack of access to resources; or state, district, or school-level mandates will rely heavily on the reading texts available in the school or classroom—typically, the basal reading series provided to them (Baumann, Hoffman, Moon, & Duffy-Hester, 1998). Statistics reveal that U.S. students in high-poverty, high-minority, and low-achieving schools have the least access to skilled instructors (*Education Weekly*, 2003). At a time when the teaching force is in transition, texts could serve as a scaled-up intervention for teachers in terms of planning and implementing their curriculum (Ball & Cohen, 1996). Yet there are few studies that empirically examine the effectiveness of using particular models of text with particular groups of students. This study describes and provides preliminary support for a model of text that could potentially scaffold word recognition skills for beginning readers.

Over the past two decades, beginning reading texts have undergone substantial changes. The majority of beginning reading texts in U.S. schools emphasized high-frequency words through the mid-1980s (Anderson, Hiebert, Scott, & Wilkinson, 1985). By the mid-1990s, the beginning reading texts of major programs consisted of predictable and literary texts (Hoffman et al., 1994). By 2002, the content of beginning textbooks had changed again. Responding to the mandates of Texas (Texas Education Agency, 1997) and those of California (California English/Language Arts Committee, 1999), all mainstream basal programs nationwide now offer decodable texts in their beginning reading components (Hoffman et al., 2002).

While each change in beginning reading textbooks is accompanied by claims of research-based evidence, policymakers have been a primary source for these recent changes. In making the changes mandated by policymakers, publishers have been left to make choices about features of texts that are not necessarily research based. This study represents a first step toward addressing this gap by testing a model of text features on first graders' acquisition of independent word-solving skills, which is a strong predictor of children's ability to read independently (Juel, Griffith, & Gough, 1986; Shanahan, 1984). Given that no text-based curriculum stands apart from its instructional usage, the instructional context of text use will be presented.

A fundamental assumption made in this article is that different kinds of texts are essential to children's development as readers and writers. Texts designed to scaffold independent word-solving skills could have different characteristics than those designed to support comprehension or literary appreciation. The empirical focus of this study is on the features of texts that support the acquisition of independent word-solving skills, even while it is acknowledged that other features or dimensions of text might be supportive of other aspects of reading acquisition.

Within the model underlying this study, the Text Elements by Task (TExT) model, two overlapping dimensions of text-based support are viewed as critical for independent word solving: cognitive load and linguistic knowledge. The explanatory efficacy of the model was examined through a quasiexperimental study of the progress made by two groups of first graders toward independent word-solving skills. One group read from the literature-based basal anthology programs that continue to be the mainstay of reading instruction in the United States (Baumann et al., 1998). The other group read from short texts called little books that were ordered according to the TExT model.

The view that texts scaffold the beginning reading process is by no means controversial. Views about the particular features of texts that scaffold the beginning reading process are more controversial. To ground the TExT model in past and current perspectives of the scaffolding provided by text, the primary perspectives are reviewed. This overview is followed by a description of the theoretical and empirical basis for the TExT model and, subsequently, the questions addressed in this study.

Views on texts as scaffolds

Three prominent views on the features of text that scaffold the task for beginning readers can be identified within scholarship and practice: (a) pacing and repetition of words, (b) sentence and text structures, and (c) decodable elements.

Pacing and repetition of words

Beginning with the 1930 edition of the Dick-and-Jane readers (Elson & Gray, 1930), the primary word-level scaffold provided in beginning reading texts was consistent attention to a small group of high-frequency words. Two aspects were considered with regard to this core set of words: the pace at which these words were introduced and the number of times they were repeated. The attention to high-frequency words was derived from Thorndike's (1921) work analyzing the frequency of word

appearances in English texts. The attention to their pacing and repetition can be attributed to Thorndike's (1903) four laws of learning—effect, exercise, readiness, and identical elements.

There is meager contemporary research examining the number of word repetitions, especially for particular types of words, in beginning reading acquisition. The research of Gates and Russell (1938a, 1938b) addressed repetitions of high-frequency words in texts that were composed almost entirely of high-frequency words—a text genre that has subsequently been identified as primerese (Amsterdam, Ammon, & Simons, 1990). 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 students at the early stages of reading acquisition because the first graders in the sample had been selected for making typical reading progress over six months of reading instruction.

Recent research on the rate at which new words in text can be learned by beginning readers is even sparser than the research on number of repetitions required by beginning readers. Johnston (2000) found that high-achieving first-grade readers learned 10 new words on average per week during instruction with predictable texts, while average readers learned 5 words and low-achieving readers learned 2 words. These figures are undoubtedly influenced by the quality and nature of instruction received. There is also some evidence that the repetition of words in texts positively affected word recognition skills in first graders, although the impact of word repetition has been found to interact with the kind of text used in instruction (Juel & Roper/Schneider, 1985).

Sentence and text structures

Sentences were kept short in the Dick-and-Jane texts, although the designers of the early reading texts did not overtly address sentence length itself. However, at later levels, complex sentences were often broken into separate simple sentences to make texts comply with the readability requirements of particular grade levels. In the late 1970s and early 1980s, the negative effects of such manipulations in texts on student comprehension became the focus of numerous studies (e.g., Brennan, Bridge, & Winograd, 1986). The youngest students in these studies were second graders, yet the findings from these studies were applied to readers of all age groups, even beginning first graders.

These findings fed into *Becoming a Nation of Readers* (Anderson et al., 1985), the report that summarized the findings on text manipulations for educators and policymakers in the United States. The policymakers in California and Texas who also conduct statewide textbook adoptions agreed with the call in *Becoming a Nation of Readers* for an end to controlled texts. In California's textbook mandate of 1987 (California English/Language Arts Committee, 1987), the mandates for reading texts based on authentic literature extended from first grade through high school. The 1990 guidelines of Texas (Texas Education Agency, 1990) called for similar texts in classrooms. Recognizing that beginning readers required some form of scaffolding, publishers offered predictable texts as the form of authentic texts in their beginning reading components (Hoffman et al., 1994). In predictable texts, a phrase, sentence, or even group of sentences is repeated to form the text structure. The underlying philosophy is that the cadence and the repetition of the predictable syntactic and textual patterns permit beginning readers to read along with a capable reader for their initiation into reading and, after rereading the text by themselves, to develop sight vocabularies (Goodman, 1968; Holdaway, 1979).

Research on whether predictable sentence and text structures scaffold beginning reading recognition was limited in scope when predictable texts became commonplace in mainstream textbook programs. While two studies by Bridge and colleagues (Bridge & Burton, 1982; Bridge, Winograd, & Haley, 1983) are cited as evidence that sight words are learned through predictable texts, these studies included an instructional format where teachers used a whole–part–whole procedure in which students were required to do sentence and word-matching activities that directed their attention to the word-level features of the text. In contrast, other studies that did not include word-level instruction following the reading of text indicate that beginning and challenged readers rely on aural memory when reading predictable texts (Leu, DeGroff, & Simons, 1986; Simons & Leu, 1987). More recently, Johnston (2000) has shown that even the most proficient first graders learn only a fraction of the words in predictable texts. Overreliance by beginning readers on predictable syntactic and text structures seems to have the same effect as overreliance on illustrations in that students fail to develop strong graphophonic strategies (Samuels, 1970).

Decodable elements

The decodability or phonetic regularity of words is another feature of text that has been viewed as a potential scaffold for word recognition (Chall, 1967/1983). The proponents of decodable texts base their proposals on research evidence that students need consistent and explicit attention to letter–sound relationships during the initial stages of reading acquisition (Adams, 1990; Juel et al., 1986; Snow, Burns, & Griffin, 1998). However, as the perspectives of researchers demonstrate, text decodability is not a unitary construct (see Mesmer, 2001). There are two related and overlapping ways by which students decode words: by identifying individual letter–sound relationships and by identifying known word parts (also called reading by analogy or "chunking").

An early study emphasizing sequentially decodable elements in text was conducted by Beck and Block (1979), who used a construct called "potential for accuracy" as a means of establishing the correlation between lessons in the teachers' edition and student books. This construct defines a word as decodable if its letter–sound elements have been covered in the teacher's guide. In applying this criterion to beginning reading texts from phonics and mainstream basal programs, the researchers concluded that 69% to 100% of the words in phonics programs had the potential to be accurately decoded, while 0% to 13% of the words in mainstream programs had the potential for accuracy. The correlation conducted in this study between teachers' manuals and student texts addressed neither the number of lessons that particular groups of students required to assimilate a new phonics element nor the number of repetitions of words or spelling patterns that students required to recognize words independently. The most recent policy mandates on texts emphasize sequential decoding, with "decodability" defined as the proportion of instructed decodable letter–sound relationships in text (Texas Education Agency, 1997).

In addition to sequential decoding, beginning readers have been found to use a decoding-by-analogy strategy in which they use consistent vowel–consonant clusters or rimes in attempts to word solve (Goswami, 1995; Treiman, 1992). On the basis of the results of several studies, Goswami and others (see Bryant, MacLean, Bradley, & Crossland, 1990; Goswami, 1995; Goswami & Bryant, 1990) have proposed a theory of decoding by analogy that suggests that rimes provide an early entry into reading for young children, and that the development of reading skills is an increasingly refined process of analogizing.

TExT model

The review of existing perspectives on text scaffolds identified several text features of importance in scaffolding word recognition skills. Yet there are few models that bring these features together and consider their combined impact on supporting beginning reading. Hoffman, Roser, Salas, Patterson, and Pennington (2001) reported that students' reading performance was best predicted by texts that were leveled according to both predictability and decodability, establishing both dimensions as crucial text-based scaffolds. In that study, high-, average-, and low-achieving first graders read seven leveled little books over three sessions—one to assess their word recognition skills and two to read the seven texts. Results indicated that holistic scales of text difficulty, which considered a combination of factors, correlated better with accuracy and fluency than did isolated factors. However, the short-term nature of this study (with a total of 1.5 hours spent per child) did not permit it to address the issue of what a text-based curriculum using these dimensions might look like over a longer period of time.

In the meantime, while the controlled text of the preprimers and primers designed by Gray and colleagues (Gray, Monroe, Artley, Arbuthnot, & Gray, 1956) and other teams of writers are gone, the mandates for decodable text have been juxtaposed with the interest of teachers in engaging children's literature. Thus, literature-based basal anthologies remain the core components in the Texas-adopted first-grade programs (Hoffman et al., 2002). Many of the texts in these basal anthologies are predictable, but they also present phonetically regular words. Whether beginning readers attend to letter–sound correspondences carefully when they can rely on the predictable sentence or text structure is uncertain (e.g., Johnston, 2000). Furthermore, despite the advent of the latest editions of literature-based basal anthology series with decodable text elements, many schools continue to use the older editions of these anthologies that do not include systematic attention to the word-level features of texts (Hoffman et al., 1994).

What is needed is a model of text that combines several features identified as potential supports in the research literature and examines the efficacy of such a text-based curriculum in supporting beginning word recognition skills. The TExT model proposes two overlapping dimensions that potentially scaffold the acquisition of word recognition skills by

beginning readers: (a) linguistic content and (b) cognitive load. Developmentally, this model is aimed at facilitating the independent word-solving skills of children at the beginning stages of reading—ranging from the prealphabetic stage to the full alphabetic stage in Ehri's (1998) model of reading development. Instructionally, the model of text described here is designed for those that are read *by* beginning readers (during independent or guided reading sessions), rather than one that is read *to* them by others (during read-alouds or shared readings of text). For instructional scaffolding in word-solving skills to be within students' zones of proximal development (Vygotsky, 1978), a fundamental premise of the model is that instructional text must be at their reading levels.

Although identified as distinct constructs in this model, cognitive load and linguistic content can be viewed as overlapping dimensions of text-based support. Each of these two critical dimensions will be described in the following sections. The model does not require that *every* text read by the child attend to all the individual features of the dimensions described here. However, a *set* of texts used during a given instructional period should attend to all of these dimensions.

Linguistic content

The first dimension of the model—linguistic content—identifies critical word-level content that texts can model to support beginning readers. Three features related to critical linguistic content were identified from the review of the literature presented in the previous section: high-frequency or sight words, rimes or word patterns, and word decodability. The last feature—word decodability—is viewed as overlapping the linguistic content and the cognitive load dimensions, as will be discussed later in this section. For purposes of convenience, it is presented here with features of linguistic content.

Linguistic content: High-frequency words

As discussed in a previous section, there is some evidence that the acquisition of a core set of sight words aids in fluent reading (Juel & Roper/ Schneider, 1985). Because 100 of the most frequent words in the English language account for more than 50% of the running text in primary grades (Carroll, Davies, & Richman, 1971), the TExT model hypothesizes that these would serve as the most useful sight words that beginning reading texts can model. In addition to the 100 most frequent words, texts should also provide students with opportunities to

acquire other high-frequency words in the English language. The literature does not establish guidelines for the number of sight words that students can attend to and acquire from a single text; however, it is postulated that earlier texts should model few unique high-frequency words that are repeated multiple times, within and across texts.

Linguistic content: Rimes

Beginning reading texts should also provide systematic opportunities for children to acquire a core set of common phonograms or rimes (Goswami, 1995; Goswami & Bryant, 1990). Wylie and Durrell (1970) found that 37 of the most common rimes account for over 500 words in primary-grade texts—suggesting that the earliest texts pay consistent attention to the modeling of these rimes. Further, there is some evidence suggesting that rimes presented with multiple onsets are more useful scaffolds than rimes presented with a single onset (Juel & Solso, 1981). That is, readers generalize the rime more readily if they see a variety of words with the same rime (e.g., *bat*, *fat*, *hat*, *mat*, *rat*, *sat* modeling the *-at* rime) rather than multiple repetitions of a single word with the rime (e.g., *cat*). Therefore, this model suggests that beginning reading texts present multiple instantiations of the same rimes (i.e., rimes with different onsets).

Linguistic content: Word decodability

As discussed in the review of literature, there are multiple ways of defining decodability. In the TExT model, decodability is defined as the inherent difficulty level of words attributed to the patterns modeled by different words. On the one hand, word decodability is linked to the modeling of consistent word patterns; on the other, it partially determines the cognitive load (or overall difficulty level) of the text. It is therefore viewed in this model as a feature that overlaps these two dimensions.

A continuum of difficulty in word decodability is specified in the model. The continuum suggests that words with Consonant–Vowel (e.g., *me*, *go*) and Consonant–Vowel–Consonant (e.g., *cat*, *dog*, *man*) patterns are the easiest words to read because of the one-to-one correspondence within these words of phonemes and graphemes. Next in difficulty level are short-vowel words with blends and digraphs (e.g., *trip*, *chat*), followed by long-vowel combinations (e.g., *cheat*, *main*). At the least decodable end of the continuum are multisyllabic and compound words, many of which incorporate one or more

blends, digraphs, or diphthongs (e.g., *pleasant, hunchback, around*).

Cognitive load

The second dimension of the model—cognitive load—attends to text features that determine its difficulty level for the reader. Three critical factors were identified from the review as influencing a text's accessibility: word decodability; word density ratios (indicative of the proportion of repeated words in the text); and text-level features, such as predictability and picture–text match. Word decodability has been discussed in the previous section; the next section describes word density ratios and text-level features.

Cognitive load: Word density ratios

The word density ratio is a proportion of the number of unique (distinct) to total words in a text and provides a measure of the vocabulary load and the amount of word-level repetition within texts. There is some evidence that suggests that frequency of word repetition in texts might be critical for the acquisition of word recognition in beginning readers (e.g., Juel & Roper/Schneider, 1985). Analyses of beginning reading programs published in the past decade have established that the vocabulary load of these texts has increased significantly over time, with fewer repetitions of words within texts (Hoffman et al., 1994).

The TExT model makes three theoretical conjectures regarding word density ratios in texts. First, text length will influence the nature of the task for the reader, given equal word density ratios. The assumption here is that early readers' perception of the "bulk" of words on a page or in a book can determine their estimation of whether they can read it (Hiebert, Liu, Levin, Huxley, & Chung, 1995). Second, low word density ratios will be most critical during the prealphabetic and early alphabetic phases of reading development—when children have relatively small sight word vocabularies and are still decoding each word through partial letter–sound correspondences. Third, even small differences in text lengths and word density ratios will drastically change the nature of the task at the time when students are making the transition to conventional reading.

Cognitive load: Text-level features

As the review of prominent perspectives on text has described, scholarship on text structure in the 1980s (see Anderson et al., 1985) influenced perspectives on the beginning reading task. Attention was directed to the manner in which aspects of the text as a whole could be used to support beginning readers in developing independent word-solving skills. Some scholars argued that predictable syntactic and story patterns permit beginning readers to access the task of reading and to enjoy what was called "wholebook success" (Goodman, 1968; Holdaway, 1979; Martin & Brogan, 1971). Children who could not yet independently read and recognize words in the text would be able to participate in the reading of whole books by relying on the support provided by repeated sentence and story patterns, especially when such reading was scaffolded by adults. Despite a limited research base on how predictable syntactic and story patterns support or detract from children's development of independent word-solving skills, these features were a primary characteristic in initial texts of literature-based reading programs (Hoffman et al., 1994). They are also prominent as a basis for text leveling in guided reading with little books (Fountas & Pinnell, 1999). Therefore, they are included in the TExT model as features of text that could potentially lower the cognitive demands of reading by providing the support of repeated syntactic and story patterns.

Whereas accessible books are viewed to have predictable syntactic and story patterns at the early levels, text-level features in the later levels often include considerations of genre—narrative and simple expository text structures (Fountas & Pinnell, 1999). Much remains to be learned about how narrative and informational text content influence acquisition of independent word-solving skills (Duke, 2000).

Another aspect of the text as a whole that has been seen as lessening the cognitive load for beginning readers is the match between the illustrations and the words in the text (Fountas & Pinnell, 1999). Texts where illustrations support the identification of key words on a page are viewed as those appropriate for the beginning levels of guided reading. By the end of first grade, illustrations should enhance meaning but should not ensure precise word solving. Research suggests that first graders with independent word-solving skills do not rely on illustrations (Samuels, 1970). At the same time, the argument that cognitive load is lessened by illustrations for

beginning readers is a logical one. Further, since current beginning texts have engaging illustrations, attention to this text feature was deemed a necessary part of the present analysis of the relationship between texts and the acquisition of independent word-solving skills.

The current study

The current study was a quasiexperimental investigation of the efficacy of the TExT model in supporting the acquisition of word-solving skills in first grade. Students in the intervention condition read from little books selected and sequenced according to the TExT model described in the preceding section. Teachers in the comparison classrooms continued to use the district-adopted, literature-based basal anthology textbook program with their students.

Quasiexperimental research designs were first described by Campbell and Stanley (1963), who noted that there are many natural social settings into which researchers could introduce something like an experimental design, even though they might lack full control over the experimental stimuli that make a true experiment possible. Quasiexperimental designs also differ from true experiments due to nonrandom assignment to the intervention condition. Threats to validity due to lack of random assignment and perfect control can be greatly reduced by (a) establishing a comparison group and (b) administering a pretest showing nonsignificant differences in the dependent variable of interest (Shadish, Cook, & Campbell, 2002). Both these precautions were taken in this study, as will be described in the method section.

Despite this, causal explanations can only be tentatively generated in the quasiexperimental study because comparison groups might differ from the intervention groups in ways other than the presence of the independent variable. Therefore, in interpreting the results, alternative causal explanations should be considered systematically before attributing the observed effect to the manipulated variable. In this study, the variable of interest was the text-based curriculum. However, because the study was conducted in real classrooms, other causal explanations for observed effects—such as quality of instruction, teacher experience, and amount of instructional time spent on reading these texts—should be considered in interpreting the results presented in this article. These alternative explanations are considered in the discussion section of the article.

This article reports the answers to four research questions:

1. What are the differences between the characteristics of a little book curriculum (resequenced according to the TExT model) and a prominent literature-based basal anthology series in terms of the tasks they pose to beginning readers?

2. Is the resequenced little book curriculum effective in scaffolding independent word-solving skills relative to the progress made in a literature-based basal anthology curriculum?

3. Are the effects of this curriculum different for children at different reading levels?

4. Are there differences in the percentage of children who attain grade-level benchmarks in the two groups?

Method

Site and participants

The participants in this study were 75 first graders (100% African American; 50% on reduced-cost or free lunch program) and their teachers, all from four first-grade classrooms of a K–5 inner-city charter school in the midwestern United States. The school was selected for its location in a high-poverty district and, similar to other schools in the district, its use of a prominent literature-based basal anthology program, Houghton Mifflin's Invitations to Literacy (Cooper et al., 1998). During the year of the project, this textbook program was the most widely purchased by U.S. schools (Education Market Research, 2000). Furthermore, this program presents research evidence that it has been effective in an inner-city school system with similar demographics to the district in which the target school was located (Houghton Mifflin, 2002).

This textbook program includes little books, and several other little book programs were available in the classrooms and the school's resource room. Observations made during the semester and the year prior to the study indicated that little use was made of these little books. Teachers in all four first-grade classrooms relied almost exclusively on the literature-based basal anthology program for reading lessons.

Preliminary observations conducted in these classrooms revealed that all four teachers had distinctive styles of instruction around texts. Two courses of action were possible: (a) to control the instructional styles of the four teachers in some way and (b) to describe and account for differences between them. The first option—controlling instruction—was rejected due to several reasons. First, such control is difficult to implement in real classroom settings. Second, instructional flexibility simulates non-

research situations, in which particular series of books are used according to teacher discretion and design, providing a more realistic picture of the effect of the texts. Finally, the impact of the text-based curricula being compared would have been confounded by the use of a specific instructional design.

Therefore, the second option—describing and accounting for instructional variability—was selected as more appropriate for this study. To provide a safety measure for the validity of the study, teacher experience was controlled in assigning the four first-grade classrooms to the intervention and comparison classrooms. To each of these conditions was assigned the classroom of a first-year teacher and of a teacher with between four and seven years of teaching experience. In addition, classroom effects (within each text-based condition) were examined statistically in the analyses, as will be described in a later section.

Threats to the validity of the study were also reduced by comparing students' pretest scores on reading of word lists and passages, adapted from the Qualitative Reading Inventory (QRI). It was determined that the two groups (intervention and comparison) had similar levels of reading proficiency at the initiation of the intervention.

Students in the two text-based conditions were grouped into four reading achievement levels on the basis of the pretest results: a very low group, a low group, an average group, and a high group. Children in the intervention classrooms ($n = 39$) were provided with little books over a 15-week period (January through May). Children in the comparison classrooms ($n = 36$) continued to read out of the literature-based basal anthology series already in use in their classrooms.

The curriculum and texts of the intervention

As stated earlier, Houghton Mifflin's Invitations to Literacy (Cooper et al., 1998) was the school's adopted textbook program and served as the primary reading texts in these classrooms. Children in the two comparison group classrooms continued to read out of this series. In this section, we describe the texts used in the intervention group classrooms, which needed to come from existing sources because financial resources were not available to design, implement, and publish a set of original books based on the theoretical framework. The texts were selected from a little book program—Ready Readers (Juel, Hiebert, & Englebretson, 1997).

The Ready Reader series was chosen because it claims to balance phonics content and high-frequency words with the leveling criteria of Reading Recovery (Peterson, 1991): theme, picture–text match, predictability of text structure, and language style. This is in contrast to prominent little book programs in the marketplace (e.g., Celebration Press, 1997; Wright Group/McGraw-Hill, 1996) that address predictability but do not attend systematically to other features of cognitive load or linguistic content.

Closer examination showed that certain word-level elements, such as word density ratios and word decodability, had not been attended to in the design of the Ready Reader program to the same extent as had other features, such as rimes and predictable text structures. Because the Ready Reader program had approximately three times as many books as were needed for the 15-week intervention period—300 in the program as compared to the approximately 125 books needed for this intervention—specific titles were selected and reordered to best approximate the TExT model. The process of selecting and reordering the little books will be described in terms of the two dimensions of the TExT model—linguistic content and cognitive load.

Establishing linguistic content

While research is clear that focused linguistic content (high-frequency words, rimes, and word decodability) is critical to young children's reading success, research is less forthcoming on the ideal curriculum or specific sequence of such content that should be followed. Prior to selecting little books that matched features of linguistic content, we had to establish the nature of an ideal curriculum in terms of the selected features.

The critical linguistic content for interim points in first grade was established from an analysis of five prominent first-grade assessments that provide at least three levels (preprimer, primer, and end of first grade) for first grade: (a) Developmental Reading Assessment; (b) Gray Oral Reading Test (GORT-4); (c) Basic Reading Inventory; (d) Qualitative Reading Inventory (QRI); and (e) Texas Primary Reading Inventory (TPRI). For the end-of-first-grade level, four additional assessments that attend only to this level were used: (a) TerraNova California Achievement Test (CAT-6); (b) TerraNova Comprehensive Test of Basic Skills (CTBS); (c) Gates–MacGinitie Reading Test; and (d) Stanford Achievement Test (Sat-9).

The content for three milestones of first grade, each representing the end of a trimester, was estab-

lished through analyses of the preprimer, primer, and first-grade assessments, respectively. The criterion for linguistic content at a milestone (such as the preprimer level) was a curriculum that accounted for 85% of the unique (distinct) words across the available assessments. The analyses revealed that, to be successful at the preprimer level, children needed facility with 100 most frequent words and words with simple-vowel patterns. At the primer level, they needed to be facile with 200 most frequent words and words with long-vowel patterns. For the end-of-first-grade level, children needed knowledge of 300 most frequent words and monosyllabic words with complex and variant vowels.

The three levels of assessment capture end points for phases of the first-grade curriculum: preprimer or end of the first trimester, primer or end of the second trimester, and first grade or end of the third trimester. The development of the first milestone—reading at the preprimer level—represented a substantial, qualitative change from emergent literacy behaviors to conventional reading. In recognition of the substantial amount of growth required for the first milestone, the linguistic content associated with the preprimer milestone was broken down into three levels for the purposes of our study. Because the other two milestones represented less substantial changes, qualitatively, the linguistic content for the primer and first-grade levels was broken down into two levels each. The content for the seven levels of linguistic content (three preprimer levels, two primer levels, and two end-of-first-grade levels) is summa-

rized in Table 1. Because levels were sufficiently differentiated and several texts were to be read each week, the anticipation was that children would move through several levels during the intervention.

The next step in the process was to identify the appropriate texts from the Ready Reader program that would support the designated linguistic content. The goal was to identify approximately 20 texts for each of the seven levels of linguistic content. The 300 texts in six levels of the Ready Reader program were analyzed for the features of linguistic content with the TExT Analyzer, a HyperCard program that provided summary data on the total number of words, the number of unique words, and the number of repetitions of unique words as well as linguistic features of words (Hiebert & Martin, 2002).

In establishing linguistic content of a text, the TExT Analyzer provided the ranking of the frequency of a word according to Carroll et al. (1971) and was confirmed, through the first 300 words, with the more recent Zeno, Ivens, Millard, and Duvvuri (1995) list. Next, the decodability of unique (distinct) words was established. Because many of the high-frequency words have irregular vowel patterns, particularly in the first 100, high-frequency words were excluded from the analysis of word decodability. The TExT Analyzer assigned points on an 8-point scale to the continuum of vowel patterns described earlier: (a) simple long-vowel words (e.g., *go*); (b) simple short-vowel without blends or digraphs (e.g., *at*, *cat*); (c) simple short-vowel with blends or digraphs (e.g., *glad*, *chat*); (d) long-vowel represented

TABLE 1
CHARACTERISTICS OF LEVELS OF LITTLE BOOKS AND OF LITERATURE-BASED BASAL ANTHOLOGIES: LINGUISTIC CONTENT

Program Level	High-frequency curriculum (percentage)			Phonically regular curriculum (percentage)			Target linguistic content (percentage)	Multisyllabic (percentage)	Instantiation of rimes with target phonics content		
	100	200	300	Simple	Long	Complex			Rimes	Instantiations	Unique words (%)
Little books											
1	25	—	—	44	—	—	69	6	5	4.0	32
2	32	—	—	35	—	—	67	7	10	3.2	23
3 (Preprimer)	23	—	—	38	—	—	61	13	32	3.0	34
4	17	14	—	31	13	—	75	16	60	3.2	43
5 (Primer)	15	11	—	28	17		71	14	76	3.6	35
6	16	13	9	20	16	10	84	17	115	3.2	41
7 (End of first grade)	11	9	7	20	15	13	75	25	100	3.4	41
Literature-based basal anthology											
4–5 (Primer)	23	13	—	15	11	—	62	29	15	2.5	17
6	22	14	10	14	8	6	74	25	28	2.5	22
7 (End of first grade)	20	16	8	14	9	4	71	26	36	2.7	25

by two graphemes, without blends or digraphs (e.g., *meet*, *ride*); (e) long-vowel represented by two graphemes, with blends or digraphs (e.g., *gleam*, *shine*); (f) *r*-controlled vowels (e.g., *car*); (g) vowel diphthongs (e.g., *oil*) and variant vowels (e.g., *bread*); and (h) multisyllabic words (e.g., *geranium*). For purposes of analyses, the first three categories are presented together as simple vowel patterns, the next two categories as long-vowel patterns, categories (f) and (g) as complex vowel patterns, and multisyllabic words have their own classification. Finally, the TExT Analyzer was programmed to identify all words with the same rime.

The initial aim was to identify little books with 85% of the distinct words meeting each of the seven levels of linguistic content described earlier. However, analyses quickly indicated that this level could not be attained. Two criteria were then established. The first was to achieve a minimum level of 65% of the unique words representing the core curriculum. Another objective was for the average number of unique words that were multisyllabic and that occurred a single time in a text not to exceed 10%. The manner in which the texts of the little book program matched the core linguistic curriculum is summarized in Table 1. The characteristics of the texts from the literature-based basal anthology are also summarized in Table 1. Because the comparison teachers were following the basal anthology sequentially from the beginning to the end of the school

year, the 15-week period of the study conducted during the second half of first grade coincided with the primer (4–5) and end-of-first-grade (6–7) levels.

As can be seen in Table 1, the criterion of 65% of the words in either the high-frequency or phonetically regular word curriculum was achieved for all but one level of the little book curriculum—level 3. The repetition of rimes with different onsets (i.e., instantiations of rimes) also determined the selection of texts from the little book program. As the data in Table 1 show, 36% of the unique words across the seven levels were members of word families with at least two different onsets (the criterion for inclusion in this category). The objective was to have at least one third of the unique words instantiate common rimes at particular levels of the little books. By contrast, 21% of the unique words at the three levels of the literature-based basal anthology program met this criterion.

Establishing cognitive load

Once texts had been sorted for linguistic content, they were examined for cognitive load. Cognitive load features were used to sort texts in the little book program, within levels with similar linguistic content (such as levels 1 through 3). Cognitive load features of the 125 little books and the texts from the literature-based basal anthology are presented in Table 2.

TABLE 2
CHARACTERISTICS OF LEVELS OF LITTLE BOOKS AND OF LITERATURE-BASED BASAL ANTHOLOGIES: COGNITIVE LOAD

Program Level	New unique words per text	Total words per text	New unique words per 100 words	Repetitions per word (M)	Text and sentence structure (Rating)	Picture support (percentage of total words)	MS singletons (percentage)
Little books							
1	6	23	26	4	5	28	6
2	12	43	28	4	5	24	6
3 (Preprimer)	16	78	21	5	4.3	21	5
4	19	110	17	6	3.1	18	9
5 (Primer)	25	155	16	6	2.6	13	8
6	39	229	17	6	2.3	5	8
7 (End of first grade)	43	386	11	9	1	7	9
Literature-based basal anthology							
4–5 (Primer)	66	228	29	3	3.2	19	21
6	81	243	33	3	1.5	11	21
7 (End of first grade)	96	325	29	3	1.9	15	19

The first cognitive load feature considered was the number of new unique words per text. Because texts with fewer unique words had fewer total words, the number of total words also increased through the levels. Because a core group of high-frequency words accounts for a large portion of the total words of a text, longer texts tend to have higher repetitions of high-frequency words. These repetitions can be as high as 10 to 25 repetitions per high-frequency word. At the earlier levels, a minimum of four repetitions per distinct word was set as the target for text selection.

The second cognitive load feature considered was word decodability—viewed in this model as a feature that overlaps between linguistic content and cognitive load. Details about the word decodability features of the two curricula are presented in the preceding section on linguistic content and summarized in Table 1. One feature of word decodability that is potentially very significant to the cognitive load of a text is the proportion of text composed of single occurring multisyllabic words, referred to here as *singletons*. The proportion of singleton words in texts in the two curricula are presented in Table 2.

Finally, text-level features were also considered in assessing the cognitive load of the two curricula. To describe the first text-level feature—predictability of sentence-text structure—a scheme with a proven record of reliability in coding from previous research was used (Hoffman et al., 1994). As described by Hoffman et al., two raters classified each text for the presence (*yes*) or absence (*no*) of nine features of predictability: repeated pattern, familiar concepts, cues from text for vocabulary, rhyme, rhythm, alliteration, cumulative pattern, familiar song/story, and familiar sequence. These ratings were used to establish a holistic score from 5 (highly predictable text where multiple features are present) to 1 (no evidence of predictable characteristics). Interrater agreement in choice of final category was high at 92%. As can be seen in Table 2, texts in the little book and literature-based basal anthology programs had a similar rating for predictability at the primer level where both attained an average rating of 3. This rating signifies predictability through the prominent use of one or two features, such as a repeated pattern of sentences or phrases or a cumulative sequence in the Hoffman et al. (1994) scale. While the texts of the little book program steadily showed a decrease in predictable features through the first-grade levels, the texts of the literature-based basal anthology program vacillated. Some of the texts in the literature-based basal anthology program continued to be highly predictable even at the end of first grade.

In addition to the sentence and story structures of the texts, text genre was established. Approximately 82% of the little books used in the intervention were simple narratives, while the other 18% consisted of expository texts. The scarcity of informational texts in early grades has been noted by Duke (2000) and is reflected in this curriculum. There was no clear trend in the proportion of narrative to expository text structures across the seven levels of the curriculum. On the other hand, the nature of the narratives changed across the levels. Earlier levels had predictable texts with simple story lines, while by levels 6 and 7, most of the narratives had more complex story lines and consisted of a preponderance of folk tales.

The literature-based basal anthology texts read by the comparison group children during the course of this study consisted entirely of narratives. These texts were incorporated into the basal anthology program from children's trade books and consisted of rich story lines and illustrations.

To establish the second aspect of text-level features—picture–text match—a scheme needed to be developed for this study. The technique that was chosen involved the number of words that adults wrote down in a 30-second exposure to a two-page spread of a text's illustrations. The exact matches between words generated and the words on the page (or *hits*) were established. The picture–text match was the number of hits divided by the number of words on the page. For example, if raters identified the word *dog* from the illustrations associated with the sentence "My pet dog is sick," the picture–text match would be one word out of five (i.e., 20%).

Two experienced teachers who were unfamiliar with the texts and with the project responded to the illustrations on the middle two-page spread of each of the 125 little books and the 12 literature-based basal anthology texts used in the two conditions. Texts from the seven levels of the little book texts and the three levels represented by the literature-based basal anthology texts were presented in a randomized order to the raters over five sessions. The raters were given 30 seconds per page to list all of the words that were elicited from the illustration.

An average of hits by the two raters was established for each of the 125 texts of the little book intervention and for the 12 texts in the anthology condition. The average percentage for picture–text match across the texts at a level is included in Table 2. As can be seen, the number of words that could be named from pictures in the little book program was approximately 1 of 4 or 5 words in the preprimer levels, about 1 of 6 to 8 words at the primer levels, and about 1 of 20 to 25 words at the

end-of-first-grade level. The support provided by pictures was fairly consistent and remained at a moderate level—1 of every 8 words—in the texts of the literature-based basal anthology program.

Documenting texts read in the two conditions

One of the two investigators observed in each classroom three times weekly during the study. As part of the observations, the investigator noted the texts that students read. On the days that the investigator did not visit, teachers kept a log of the texts read by their students. The logs of teachers and investigators were used to establish the total text-based reading curriculum—that is, the reading texts that students experienced over the study.

Both teachers in the comparison classrooms used the district-selected Houghton Mifflin textbook program (Cooper et al., 1998). The classes proceeded at slightly different paces through the anthology, although they followed the sequence of selections presented in the instructions of these literature-based basal anthologies. Ms. Sumter (all names are pseudonyms), the first comparison teacher, used the textbook anthology for whole-class instruction. The second comparison teacher, Ms. Jarrod, had three reading groups that were at different places in the anthology when the study started midyear. By the end of the study, the high-achieving group in Ms. Jarrod's class and all of the students in Ms. Sumter's class had read the same 12 selections in the anthology. The average-achieving group in Ms. Jarrod's class had read 11 selections and the low-achieving group had read 10. All selections were read in the sequence suggested by the basal program. When these 12, 11, and 10 selections were divided across the three time periods, the text features were not substantially different for the low-, average-, and high-achieving groups in Ms. Jarrod's classroom and for Ms. Sumter's class. To ensure clarity of presentation, the text-based curriculum presented in this article for the comparison students consisted of the 12 selections that were read by all of one class and 35% of the second class. For 65% of the second class, the total numbers of words read were somewhat lower. The types of words read, however, were similar.

In the intervention classrooms, students were assigned little books according to their achievement level on the initial assessment. Each class had three groups, but the initial achievement levels were different in the two classrooms. The groups in Ms. Riley's classroom are part of the very low-, low-, and high-achieving groups in the subsequent presentation of data, while the groups in Ms. Lindbergh's classroom are part of the low-, average-, and high-achieving groups.

The curriculum, as described earlier, was differentiated into seven levels—three corresponding to the preprimer level, and two each to the primer and end-of-first-grade levels. Each of the four groups of children started the intervention at different levels on this curriculum. For example, the very low-achieving readers started reading texts at the beginning of the first level of the curriculum while the average-achieving readers started reading texts at the third level. Once started at a particular point along the continuum, each group of students was provided with five little books per week from that level forward until all the books at that particular level had been exhausted. Following this, they were moved up to the next (higher) level of the curriculum, and so on, until the end of the intervention. For example, the very low-achieving readers moved from reading books at the first (beginning preprimer) level of the curriculum to reading books at the fourth (primer) level of the curriculum over the course of the 15-week intervention.

The maximum number of titles provided to each group of readers across the intervention was 75 (5 little books per week over 15 weeks). As will be described in the next section, children in the two intervention classrooms read different numbers of little books over the course of the 15-week intervention due to different instructional decisions made by their teachers. In the classroom of Ms. Lindbergh, the instructional cycle with little books occurred over a five-day period each week, such that all children in this classroom read the 5 new little books provided each week. This resulted in a total of 75 titles read across the 15-week intervention period per student. In the classroom of Ms. Riley, the instructional cycle with little books occurred over a three-day period each week, with a fourth day allocated for browsing new little book titles and revisiting old titles. Because children could browse and replace books—both new and old titles—at will on the fourth day of the week, the number of books was counted as the 3 titles that students read as part of the instructional, three-day cycle (i.e., 45 titles across the 15-week intervention period per student).

To account for potential differences in performance caused by the different amounts of total text read by students in these two classrooms, posttest scores were analyzed for classroom effects, as will be described in a later section. Despite differences in the total number of little books read in the two intervention classrooms, the features of texts read in any giv-

en week were similar for children in each reading group across these classrooms.

Instructional context

The instructional context of text use is an important determinant of its impact on reading acquisition. In this section, a brief overview of important similarities and differences in the instructional contexts of text use across the four classrooms is presented. These similarities and differences are summarized in Table 3.

Instruction in the intervention classrooms

The content of the intervention centered on the change from the district's adopted textbooks to the curriculum-based little books. Intervention teachers were asked to commit to providing their students with three to five little books per week consistently for a period of 15 weeks. In addition, teachers were requested to ensure that children read books at their reading levels. They were provided with multiple copies of the 125 little books that had been lev-

eled according to the designated curriculum. They were also apprised of the investigators' evaluations of students, based on the initial assessments, relative to the seven levels at the beginning of the 15-week intervention period.

The two teachers—Ms. Lindbergh (more experienced) and Ms. Riley (first-year teacher)—were given flexibility in how they organized their classrooms for the little book sessions and in the instruction that they provided around the little books. Instruction in the two intervention classrooms had several important similarities and differences, as is highlighted in Table 3.

Both the teachers used the little books in 25- to 30-minute time blocks. Children in both classrooms read one little book per day. Ms. Lindbergh allocated time to read the little books on all five days of the week, while children in Ms. Riley's classroom read little books on three days of the week, with a fourth lesson scheduled for review and browsing time for old and new titles.

Although children had been identified as belonging to four different reading achievement levels

TABLE 3
FEATURES OF INSTRUCTIONAL CONTEXT IN THE FOUR CLASSROOMS

Features	Comparison group		Intervention group	
	Ms. Jarrod	Ms. Sumter	Ms. Lindbergh	Ms. Riley
Reading of focal text	Basal (1 hour a day, 5 days a week)	Basal (1 hour a day, 5 days a week)	Little books (25 to 30 minutes a day, 5 days a week)	Little books (25 to 30 minutes a day, 4 days a week)
Phonics/word work	Daily (integrated into 1-hour block with basal reading)	Daily (30 minutes a day)	Daily (30 minutes a day)	Not conducted
Writing	Daily minilessons integrated into 1-hour block with basal reading. Worksheets completed in response to basal reading.	Writing workshop approximately once a week (45 minutes a day). Daily worksheet activity in response to basal reading integrated into 1-hour basal block.	Writing workshops approximately 1 to 2 times a week (30 minutes a day).	Writing workshop observed only twice over course of intervention. No other writing instruction observed.
Read-alouds with trade books	No	Approximately once a week (approximately 20 minutes)	Daily (approximately 10 to 15 minutes)	Observed only three times over course of intervention
Worksheets	Yes	Yes	Yes	No
Daily time allocated to all literacy lessons	1 hour	90 minutes on days without writing/read-alouds. Approximately 100 minutes a day when weekly writing and read-aloud time are averaged in.	70 to 75 minutes a day on days without writing workshop. 80 to 85 minutes a day when weekly writing time is averaged in.	25 to 30 minutes a day
Grouping	Three small groups	Whole class	Three small groups	Three small groups

(very low, low, average, and high), there was only one very low reader in Ms. Lindbergh's classroom. She, therefore, elected to have the very low-achieving reader read the little books assigned to the low-achieving group in her class to aid class management. For the same reason, Ms. Riley had the three average-achieving readers in her class join the high-achieving group. Thus each teacher worked with three adjusted reading groups in her class.

While both teachers chose to use the little books in semi-independent formats, there were some important differences in instruction around texts in these two classrooms. In Ms. Lindbergh's classroom, a daily session began with students locating the little books that were designated for their group for that week. They spent the daily session reading one new book and one or two books that they had read previously either independently or with partners. As in the comparison classrooms where audiotaped versions of the texts were available, audiotaped versions of the little books were made available to intervention teachers. Children of different levels spent at least one or two sessions weekly listening to one or more of the designated books for the week. Ms. Lindbergh also met with each of the three little book groups once a week. During these sessions, she discussed strategies as students encountered unknown words in their reading of a particular little book. When she was not reading with one of the three groups, she moved from group to group and listened to individuals read from the little books.

In Ms. Riley's intervention classroom, students in each group read a different little book on each of the three days of the week. The specific book for each group was distributed at the beginning of a session, and students read with Ms. Riley, with partners in their group, or following along with an audiotaped version. Ms. Riley spent the entire session with a different group on each of the three days. These small group sessions were devoted to round-robin reading with few comments about strategies or content. On the fourth day of the week, all students in the class reviewed their books from that week, browsed new (as yet unread) titles, or engaged in word-card activities based on the little books they had read that week.

Table 3 provides information on what the literacy curriculum as a whole looked like in these two classrooms. It is important to note that the little book lessons took the place of the main reading lesson in both classrooms, even though the researchers did not stipulate this. In addition to the little book lesson, Ms. Lindbergh continued to provide daily whole-class phonics lessons that typically consisted of a making-words activity. She also read aloud from a children's trade book every morning for approximately 10 to 15 minutes. Ms. Riley had been struggling to put a literacy curriculum in place in her classroom prior to the introduction of the little books. During the period of the intervention, her reading instruction consisted primarily of work with the little books described in this section. She rarely conducted read-alouds, with only three instances of this activity observed during the intervention period.

Instruction in the comparison classrooms

In the comparison classrooms, children read approximately one text from the literature-based basal anthology per week in lessons that averaged an hour per day. The more experienced teacher, Ms. Jarrod, allocated a different text weekly to students according to their membership in one of three achievement groups. The lowest group was given more time with a selection before being moved on to the next one (approximately seven to eight days per selection), while the higher groups moved at a slightly faster pace through the selections (approximately three to five days per selection). Ms. Jarrod integrated minilessons on writing and spelling skills and grammar with these daily hour-long sessions, so that approximately 35 to 40 minutes per day were spent on reading the anthology selections and 20 to 25 minutes were spent on the minilessons. Some of the minilessons were connected to the focal text being read that day (e.g., spelling lessons) while others were not connected to it (e.g., grammar lessons). Difficult words from the anthology selections were selected as the spelling words for the week and were displayed prominently on a word tower for each group. Prior to reading the literature-based basal anthologies, children practiced naming the words of the week and wrote them down several times in an effort to memorize the spellings. After reading the literature-based basal anthology selections, they were often assigned seat work with worksheets that required some written response to the story.

The first-year teacher, Ms. Sumter, moved students through the texts on a whole-class basis, with no small-group work. On the first day of the week, she read the text to the whole class as they followed along. The remaining sessions of the week were devoted to rereading the text along with an audiotape or with partners. The work with the literature-based basal anthologies took up approximately an hour of instructional time, including postreading seat work with worksheets. As in Ms. Jarrod's class, children were asked to memorize a list of difficult words from the anthology selections as their spelling words of

the week. In addition to this one hour, Ms. Sumter also spent approximately half an hour per day conducting a phonics lesson. At this time, she focused (using a variety of exercises and activities) on teaching and reinforcing letter–sound relationships, paying more attention as the year progressed to blends and digraphs, and word endings. She also had a list of high-frequency words in her class, which she referred to on occasion and had the children memorize. In addition to this, Ms. Sumter conducted writing workshops approximately once a week that averaged 45 minutes in length. During this time, children were engaged in free writing or in small-group writing projects.

Similar to the pattern in the intervention classrooms, weekly visits by the investigator to the two comparison classrooms were followed by a discussion with teachers regarding students' performances on the instructional texts. The different aspects of the literacy curriculum in Ms. Jarrod's and Ms. Sumter's classes are summarized in Table 3.

Assessments

Narrative texts and word lists from the QRI were used as the pre- and posttest assessments. The QRI begins with a text for the preprimer level, followed by texts for the primer and end-of-first-grade levels. Pilot testing with the previous cohort of first graders in the spring of the year had shown that the preprimer level was too difficult for a portion of the cohort. Consequently, a number of texts were pilot tested to identify two that could precede the preprimer as an assessment. Of this set of texts, two were found to be easier than the preprimer text of the QRI. Further, these two texts elicited different performances from beginning readers. That is, the first text was easier than the second text and both were easier than the preprimer text of the QRI. The first text was entitled *Monster Mop* (Mark, 1997) and the second was *Good Girl* (Jacobs, 1997). These two texts were administered to students who were unable to attain 90% accuracy on the preprimer-level passage of the QRI.

The narrative forms of the QRI passages were used for both the pretest and posttest. This choice was made because of the lack of equivalence of the QRI narrative passages in difficulty. Further, the time gap between the two administrations was sufficient so that rarely did a child end up reading the same passage (due to greater proficiency by the end of first grade).

The word lists on the QRI are drawn from the passages that are used to assess oral reading and comprehension. To ensure that the test (administered in a single sitting) would not be too lengthy for students at the end of grade 1, 15 words were chosen for each level of word list rather than the 20 words provided by the QRI. Words were grouped according to frequency in each component word list, and words were randomly chosen from these groups for inclusion on the final list. For example, on the QRI primer list, when words were grouped according to membership within the 100 most frequent words and the 101 to 300 most frequent words, they yielded a ratio of 2:3. The same ratio of 2:3 from each of these two frequency ranges was maintained in selecting the final list of 15 words.

To further check the validity of the final 15 words selected for inclusion in each word list, a second process was initiated to establish the comparability of the QRI list to the Test of Word Recognition Efficiency (TOWRE), a frequently used measure of word recognition. This analysis showed that the first three word lists (associated with grade 1 levels of preprimer, primer, and end-of-first-grade) represented the same range of vocabulary as the group of words that are associated with the standard score for first-grade proficiency on the TOWRE. Distributions of the words on the three lists were as follows: 49% from the 100 most frequent words, 33% from the 200 to 300 most frequent words, and 18% from the 400 to 1,000 most frequent words.

Both the QRI word lists and passages yield scores that are ordered but discontinuous. In order to create an equivalent scale, students were assigned a score for the final level that they read. If students read the first early literacy text, *Monster Mop*, with appropriate levels of fluency and accuracy but failed to attain criteria on the second early literacy text, they were assigned a score of 1. Successful performance on the second early literacy text, *Good Girl*, but not on the third text, which was the preprimer text of the QRI, was scored as 2. The QRI levels were scored as 3 (preprimer), 4 (primer), 5 (first grade), 6 (second grade), 7 (third grade), and 8 (fourth grade). No student attained the criteria of accuracy, fluency, and comprehension beyond the fourth-grade text of the QRI. A similar procedure was used for scoring the word lists. With the word lists, however, the lowest score was 1 for the preprimer word list of the QRI, and the highest score was 6 for the fourth-grade word lists.

Formation of performance groups

Pretest scores were used to assign students in each condition to four reading achievement levels:

very low, low, average, and high. Although reading on word lists and passages was highly correlated (r = .80) at the time of the pretests, children were reading on a slightly higher level on the word lists than on the passages.

Group formation also involved teachers' evaluations of student reading performances. Teachers were asked to evaluate their students' achievement as low, average, or high. Teachers evaluated average-achieving readers as those reading at primer level on word lists and at preprimer text level in December. The remaining groups were established in relation to the average group. Because of the range of achievement below the average level indicated by teachers, low and very low groups were formed. The low-achieving group consisted of children who were reading at passage 2, and the very low-achieving group was reading at or below passage 1. The high-achieving group also had substantial variation. For class organizational purposes, however, all students who were reading at or above

a primer-level text were assigned to the high-achieving group.

Results

Results are presented for each of the four research questions that this study addressed: (a) comparisons between curricula, (b) group performances as a function of condition, (c) effects by reading levels, and (d) attainment of grade-level benchmarks.

Comparisons between curricula

Post-hoc comparisons were made between the weekly text-based curricula for the four intervention groups (very low, low, average, high) and the comparison group. Data on text features were clustered into three five-week segments, representing the beginning, middle, and final phases of the 15-week intervention. Data on linguistic content and cognitive load are presented in Table 4.

TABLE 4
TEXT-BASED CURRICULUM: TEXT FEATURES FOR INTERVENTION AND COMPARISON GROUPS AT THREE TIMES

	Words per week	Repeated words per week (percentage)	Multisyllabic words (percentage of total words)	Words derived from multiply instantiated rimes (percentage of total words)	Unique high-frequency words
Very low-achieving little books					
Beginning	161	84	12	23	19
Middle	255	85	16	21	27
End	361	89	12	25	40
Low-achieving little books					
Beginning	267	84	11	26	26
Middle	520	87	18	27	44
End	653	86	20	27	58
Average-achieving little books					
Beginning	327	85	14	26	34
Middle	707	87	20	27	60
End	1048	89	27	25	69
High-achieving little books					
Beginning	532	85	16	28	50
Middle	1060	89	26	26	70
End	1692	90	36	26	85
Literature-based basal anthology					
Beginning	213	70	32	7	26
Middle	243	69	34	9	39
End	307	65	29	16	39

Linguistic content

The two curricula were analyzed for differences in three features of linguistic content: word decodability, rimes, and high-frequency words. In terms of word decodability, the percentage of multisyllabic words within a corpus indicates the difficulty of a text's linguistic content for beginning readers because many of these words incorporate one or more blends, digraphs, or complex vowel combinations. As the data on multisyllabic words in Table 4 demonstrate, the little book curriculum showed a progression in the difficulty level of the words introduced. In contrast, an average of 32% of the unique words in the literature-based basal anthology texts consisted of multisyllabic words from the first through the last time period. The percentages of multisyllabic words differed most for the intervention's very low- and low-achievement groups: 12% to 15% of the words in the very low-achieving group curriculum and 11% to 20% in the low-achieving group curriculum relative to the 32% on average for the literature-based basal anthology group.

In addition to word decodability, the percentage of unique words with shared rimes was analyzed. Table 4 summarizes the percentage of text derived from multiply instantiated rimes, that is, rimes with more than one onset. The literature-based basal anthology selections introduced children to fewer rimes with more than one onset than the four little book curricula. Further, these rimes were repeated fewer times in the weekly literature-based basal anthology curriculum (3.5 to 5 repetitions per rime), as compared to all levels of the little book curricula (7 to 10 repetitions per rime). Therefore, a smaller percentage of the text was made up of these multiply instantiated rimes in the anthology selections (7% to 16%) than in the little book curriculum (21% to 28%).

The analysis of the presence of the 100 most frequent words in written English (Carroll et al., 1971) revealed that the overall proportion of high-frequency words in texts did not differ across the different curricula on a weekly basis, averaging approximately 40% to 50% of the total text. However, the approaches did differ in the number of unique or distinct high-frequency words that children were expected to read each week. Except for the very low-achieving group, texts in all other intervention groups had more distinct high-frequency words per week than the literature-based basal anthology group texts. That is, the intervention group saw more examples of high-frequency words than students in the literature-based basal anthology group.

Cognitive load

As can be seen in Table 4, children in all intervention groups (except for the very low-achieving group) read more words per week than those in the comparison group. These words were distributed over a greater number of texts in the intervention condition than in the literature-based basal anthology condition. On average, students in the intervention group read three to five little books per week, totaling 15 to 25 little books per five-week period, while those in the anthology condition read approximately four texts during the same time period. Even though individual little books were considerably shorter than individual anthology selections in the first two periods, the provision of more texts in the little book condition meant that intervention students were exposed to more total words over the 15-week study.

Despite the difficulty of finding texts with consistent word density ratios for particular levels within the Ready Reader program, data in Table 4 show that a higher percentage of words was repeated in the little books than in the anthology texts: between 85% and 90% of all words in the former relative to 65% to 70% of the words in the latter. In particular, fewer words appeared a single time in the little book curriculum than in the literature-based basal anthology curriculum: 20% as compared to 30% to 35%. While the little book program did not provide a built-in, consistent progression in word density ratios across time and groups, the program did provide a greater degree of word repetition during a specific week than literature-based basal anthology texts read during a comparable time period.

Group performances as a function of condition

Students' performances on the QRI word lists and texts from the beginning to the end of the intervention period were used to establish the effectiveness of the two conditions. Analyses of covariance (ANCOVA) were conducted for each of the measures (word lists and text reading) to establish differences in mean posttest scores, using the pretest scores as the covariates. The ANCOVAs were conducted using a nested design—2 × (4) × 3 (Text-Type × [Teachers/Classrooms Nested within Text-Type] × Reading Level). The very low- and low-achieving reading groups were combined for these analyses and identified in terms of a broader category of struggling readers. Table 5 presents means on the two tasks by text condition, including adjusted means for the intervention and comparison groups that ac-

knowledge the comparison group's somewhat higher (although not statistically different) pretest performances on both the word and text measures.

The main effect for treatment was significant, $p < .01$, for the word reading $F(1, 4) = 16.6$, and passage reading tasks, $F(1, 4) = 10.6$. An examination of the means in Table 5 indicates that the students in the little book condition had higher means on both the word list and passage measures than students in the anthology condition during the posttest assessments. The group reading little books improved by 2.8 text levels as a result of the intervention, while the group reading from literature-based basal anthology selections improved by 1.8 text levels during the same period of time. At the end of the 15 weeks, intervention group students were reading, on average, second-grade-level passages, while comparison students were reading first-grade-level passages.

Effects by reading levels

The main effect for reading level was not significant for either the passage, $F(2, 4) = 2.56$, or word reading tasks, $F(2, 4) = 3.01$, although it approached significance on the latter, $p = .06$. In considering the average gains on the word list made by the three achievement groups across the two text conditions, the greatest gains were made by the high-achieving students (an average of 1.9 levels), while the average achievers made the smallest gains, increasing on average by 1.4 levels. The interaction for

text condition by achievement level for both the word and the passage reading tasks was not statistically significant. While achievement groups in the literature-based basal anthology condition did not make gains as large as those of students in the little book condition, students of the same achievement group made comparable gains relative to other achievement groups of their condition.

The plot lines in Figures 1 and 2 afford an opportunity to make comparisons across reading levels—that is, how did the different groups of readers perform relative to one another?
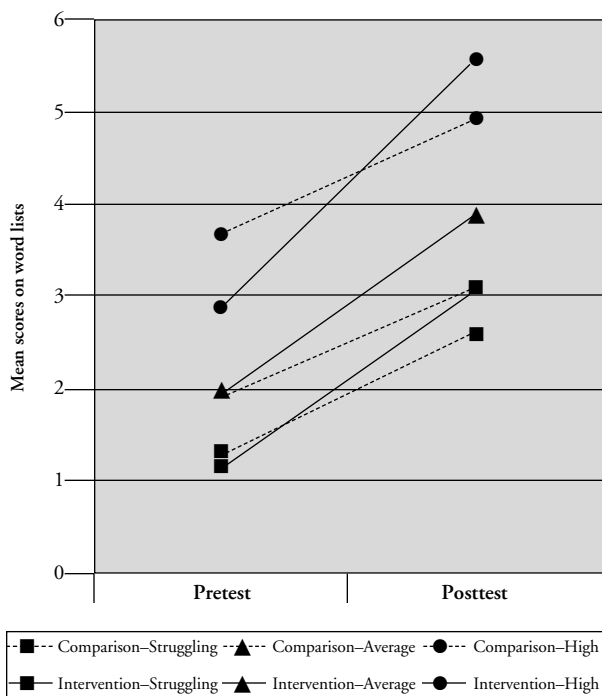
An examination of Figures 1 and 2 reveals that the trajectory of progress was steeper for all levels of intervention group readers on both the word lists and the passage reading tasks. The intervention group very low- and low-achieving readers were reading at similar levels to the comparison group average readers on both tasks by the time of the posttest. On the passage reading task, the average-achieving readers in the intervention group had mean scores that were very close to the mean scores of high-achieving readers of the comparison group. These results indicate that each level of intervention readers was performing more in line with the higher level of the comparison group readers than with the group in which they had started out in December.

Teacher/classroom effect was examined by nesting it as an independent variable within the text type. Effects for word reading, $F(2, 4) = 1.02$, and for text reading, $F(2, 4) = 6.23$, were statistically
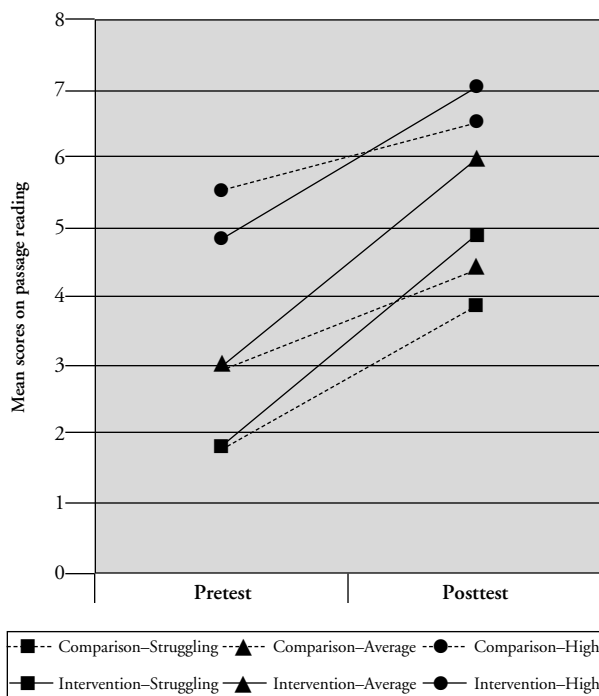
TABLE 5
MEANS (AND STANDARD DEVIATIONS) FOR PRETEST AND POSTTEST SCORES BY READING LEVEL AND TEXT CONDITION

Groups	Word lists		Passage reading	
	Pretest	Posttest	Pretest	Posttest
Intervention group				
Struggling ($n = 16$)	1.2 (0.4)	3.1 (0.4)	1.7 (1.0)	4.9 (0.8)
Average ($n = 10$)	2.0 (0.0)	3.9 (0.6)	3.0 (0.0)	6.0 (0.5)
High ($n = 13$)	2.9 (0.6)	5.5 (0.8)	4.9 (1.1)	7.1 (1.0)
Total ($n = 39$)	2.0 (0.8)	4.1 (1.2)	3.1 (1.6)	5.9 (1.2)
Adjusted mean		4.2		6.0
Comparison group				
Struggling ($n = 15$)	1.3 (0.5)	2.6 (0.6)	1.7 (1.0)	3.9 (1.5)
Average ($n = 7$)	2.0 (0.0)	3.1 (0.7)	3.0 (0.0)	5.3 (1.3)
High ($n = 14$)	3.7 (1.1)	4.9 (1.6)	5.4 (1.3)	6.6 (1.2)
Total ($n = 36$)	2.4 (1.4)	3.6 (1.5)	3.4 (2.0)	5.2 (1.8)
Adjusted mean		3.4		5.2

FIGURE 1
INCREASE IN MEAN SCORES OF CHILDREN AT DIFFERENT ACHIEVEMENT LEVELS ON WORD LISTS (PRE- AND POSTTEST COMPARISONS)

- - ■ - - Comparison–Struggling - - ▲ - - Comparison–Average - ● - - Comparison–High
—■— Intervention–Struggling   —▲— Intervention–Average   —●— Intervention–High

FIGURE 2
INCREASE IN MEAN SCORES OF CHILDREN AT DIFFERENT ACHIEVEMENT LEVELS ON PASSAGE READING (PRE- AND POSTTEST COMPARISONS)

- - ■ - - Comparison–Struggling - - ▲ - - Comparison–Average - ● - - Comparison–High
—■— Intervention–Struggling   —▲— Intervention–Average   —●— Intervention–High

insignificant, indicating that the results did not vary statistically within each treatment or text type by teacher (or classroom).

Attainment of grade-level benchmarks

While the analyses of mean differences indicate that students made higher gains in reading words and texts in the little book than the anthology condition, establishing the number of students who attained particular benchmarks at the end of grade 1 is also critical. One such benchmark is proficient reading at the primer level on an informal reading inventory. Based on their text reading, students were placed into three groups: below first grade (performances below primer), first grade (primer and first-grade texts), and above first grade (second grade and above). Percentages of students falling into these three groups according to the two conditions are provided in Table 6.

For text reading, a chi-square analysis showed a significant difference, $\chi^2(2, 75) = 6.25$, $p < .05$. A third of the students who read from literature-based basal anthologies were reading below the primer level

in May. In comparison, 10% of the little book group were reading at this level. Further, two thirds of the little book students were reading above the first-grade level. Ten percent fewer of the anthology group were reading at this level.

Discussion

The study reported in this article represents a classroom-based investigation of the effectiveness of a text-based curriculum that combines several supports identified in previous research as critical to the acquisition of independent word-solving skills. Given the quasiexperimental nature of the study and the lack of control over several instructional variables of potential significance, strong claims cannot be made about the effectiveness of the model described here. Rather, this study should be viewed as an initial investigation of a model of text that is designed to support independent word-solving skills in beginning readers.

The results of this study suggest that even a moderate amount of scaffolding of texts can make a

TABLE 6
PERCENTAGES OF CHILDREN READING AT DIFFERENT LEVELS ON WORD LISTS
AND PASSAGE READING TASKS

Tasks	Below first grade	At first grade	Above first grade
Word lists			
Pretesting			
Intervention group	74.4	23.1	2.6
Comparison group	63.9	19.4	16.7
Posttesting			
Intervention group	2.6	38.5	59
Comparison group	16.7	47.2	36.1
Passage reading			
Pretesting			
Intervention group	84.6	7.7	7.7
Comparison group	75	5.6	19.4
Posttesting			
Intervention group	10.3	25.6	64.1
Comparison group	36.1	8.3	55.6

difference in the word-solving skills of first graders. Whether of initially struggling, average, or high reading achievement, students in the intervention group read at one level of text higher than the students in the literature-based basal anthology group by the end of grade 1. After 15 weeks of reading from the little books, most of the students were leaving first grade able to be successful with the second-grade texts, while their peers who had read from the anthology did not have this extra advantage. Further, a third of the comparison group students had not attained the level of first-grade reading, in contrast to 10% of the students in the little book group who failed to attain this level.

As evidenced by the recent mandates of California and Texas for the use of decodable text, policymakers and publishers have sought to identify precise prescriptions for beginning reading texts. The results of this study suggest that somewhat greater consistency in linguistic content and somewhat less demanding cognitive loads support beginning reading acquisition. These results do not suggest, however, that beginning readers require texts where all words fit particular patterns or where each unique word is repeated a particular number of times. While the particular little books used in this study (the Ready Reader series) were written to attend to certain features of linguistic content (such as rimes), these texts were not ideal in their execution of several other features emphasized in the TExT model.

Even on those dimensions where the texts of the little book and the literature-based basal anthology programs differed, the differences were of degree, not of kind. The most substantial difference lay in the percentage of unique words accounted for by rimes with target vowel patterns. A quarter of the words in the little books consistently exemplified target vowel patterns. Percentages were low in the literature-based anthology texts, particularly at the beginning of the 15-week period. However, the percentage of words with target rimes in the little books did not achieve the critical mass of the phonics texts of an earlier era.

Similarly, the average repetitions per word of 6 for the little book program and 3 in the literature-based basal anthology program were far from the 35 to 40 repetitions recommended by Gates and Russell (1938a, 1938b). Despite this, on average, each word in the little book program was repeated twice as often as in the literature-based basal anthology program. A significant portion of the words in the basal anthologies appeared a single time, and 1 out of every 5 unique words was a single-appearing, multisyllabic word. In the little book program, this figure was 1 of every 14 unique words—almost three times fewer single-appearing, multisyllabic words.

Given the quasiexperimental nature of this investigation, possible alternative explanations to the results presented here must be considered. Three such explanations are considered: differences in the amount of text read across conditions, differences in

the quantity or quality of instruction received, and the effect of reading leveled text.

The first of these explanations suggests that differences between intervention and comparison group students' reading achievement might be accounted for by differences in the total amount of text that students read over the intervention. Although individual little books were shorter than anthology texts, the reading of three to five books by students in the little book condition meant that they read more words, on a weekly basis, than did students in the literature-based basal anthology condition. However, teachers in the anthology group had students repeatedly read the weekly text through partner reading, reading along with audiotape recordings, and reading along with the teacher. By repeatedly reading the same text throughout the week, the students in the literature-based basal anthology condition most likely read as many total words as the students in the little book condition, although distributed over fewer texts.

The second explanation of the present results suggests that it was the quantity or quality of instruction occurring around texts that made the greatest impact on the reading achievement of intervention versus comparison group children. Clearly, texts do not replace instruction; rather, it is how teachers use texts that is critical. Observations in the four classrooms revealed that children in the two comparison group classrooms received as much or more reading instruction per day than did children in the intervention group classrooms. Therefore, the quantity of instruction likely did not affect the current results, except in a manner that favored the comparison group children.

The effects of instructional quality were analyzed in three ways. First, precautions were taken to reduce variance in instructional quality across conditions. This was achieved by matching teachers on the basis of teaching experience, with one first-year teacher and one teacher with more experience assigned to each condition. In addition, instructional practices were accounted for through regular observations of the general literacy curriculum and of text use in the four classrooms.

The second way in which instructional quality was examined was by observing and accounting for differences in the instruction around texts in the classroom. A difference revealed by these observations was that the little books were used in more semi-independent formats in the two intervention classrooms than the literature-based basal anthology texts in either of the two comparison group classrooms. Children in the intervention classes spent no

more than 20 to 25 minutes per week reading the little books in a teacher-led context. The rest of the time was spent reading independently, with peers, or at the listening center. Ms. Lindberg (the more experienced intervention group teacher) provided some consistent strategy instruction during the time she spent reading the little books with students. Ms. Riley (the first-year teacher) spent most of the time in round-robin reading, providing little or no explicit instruction around the text. In contrast, both the comparison group teachers (Ms. Sumter and Ms. Jarrod) spent approximately 40 minutes to an hour per day conducting reading instruction around the focal text. Of this time, Ms. Sumter led the whole-class instruction for the entire hour (in a variety of reading-related activities as described in the preceding section), while Ms. Jarrod worked intensively with different reading groups so that she read with each group once every three working days.

Both the comparison group teachers and one of the two intervention group teachers (Ms. Lindbergh) provided daily phonics and word-level instruction in addition to reading the focal text. Read-alouds (Holdaway, 1979) and opportunities to write are known to facilitate a variety of early reading skills (Frith, 1985; Morris, 1993) including those assessed in this study. One teacher in each of the groups—Ms. Jarrod in the comparison and Ms. Riley in the intervention—provided few, if any, such opportunities to children in their classrooms. However, the other two teachers provided regular read-alouds and weekly opportunities for students to engage in a writers' workshop. As was discussed previously, the occasions for these events were somewhat more frequent in Ms. Lindbergh's intervention classroom than in Ms. Sumter's comparison classroom. Could the advantage provided by these more frequent opportunities in Ms. Lindbergh's classroom explain the difference in her students' reading progress? This question was answered in part by the third and final way in which the effects of instructional quality were examined in this study—by statistically analyzing the data for teacher and classroom effects. As reported previously, the nested ANCOVA showed statistically insignificant differences for teacher and classroom, suggesting that the differences of significance to this study might lie in other explanations.

The third explanation for the observed results is that the present results reflect opportunities provided in the little book intervention for students to read at their levels. According to this interpretation, a more appropriate study design would have been to have all students in the little book condition receiving the

same level of little books for the entire intervention period. Whether the students in the little book condition had books that diverged substantially from one level to the next or whether the little books perfectly matched students' levels will be addressed.

First, however, it is critical to point out that a design where a "generic level" of little books was tested against a "generic level" of literature-based basal anthology texts would have failed to address a crucial, previously untested assumption of current literature-based basal anthologies in the first grade: that children who are challenged in learning to read develop a foundation of independent word-solving skills with texts where unique words are numerous and where many of these unique words are multisyllabic words that occur infrequently in the text (Hayes, Wolfer, & Wolfe, 1996). Because basal programs continue to offer a sequence of five or six first-grade texts as in the era of controlled texts, teachers, policymakers, and teacher educators may assume a progression in text difficulty within literature-based basal anthology programs. Across the five or six first-grade textbooks of earlier eras, changes were evident in the number of new words and their repetition. A summary of the text features of first-grade programs from the 1960s and the 1980s showed that the number of unique words was 5 per 100 running words in the first text and 12 unique words in the end-of-first-grade reading textbook (Hiebert, Martin, & Menon, in press). The 2000 copyright of the same program provided texts with 21 unique words at the beginning of first grade and 19 at the end of first grade. The data in Tables 1 and 2 show a similar pattern in the literature-based basal anthology program that was the focus of this study. That is, the number of unique words was consistent from primer to end-of-first-grade texts (29 per 100 words) and the percentage of multisyllabic words that appeared a single time stayed nearly the same (21% and 19%). Only in the predictable sentence and story structures (more to less) and length of text (less to more) did the texts change from the primer to the end-of-first-grade reader.

The theoretical construct of text difficulty that underlies the flat profiles of text features in current first-grade basal reading programs is not currently articulated within their teachers' manuals or support materials. The view of text difficulty seems to be similar to that described earlier as the sentence and text structure perspective. The features of text overall are viewed to be what makes the biggest difference in accessibility of texts to developing readers. While this theoretical construct has not been revisited in recent years, its rationale is developed in the writings of

scholars such as Holdaway (1979) and Goodman (1968). If a text is engaging, the presence of rare words will not deter students of different levels from reading it. Further, with scaffolding from the teacher, students with a range of competencies can read the same text. Rarely have these assumptions been empirically examined. This study suggests that even in contexts where a teacher instructs students in small groups that have been formed by reading levels, texts that have numerous rare and multisyllabic words do not promote a high level of independent word solving skill.

In considering these conclusions, the two questions raised earlier require attention: the degree to which the little book levels differed from each other and the degree to which the little books matched individual children's independent word solving skills. With regard to the first question, little books did differ substantially from level to level on some features but not on others. With respect to features such as repetition of words, rime instantiations, and proportion of single appearing words, the texts were fairly similar from the beginning to the end of the curriculum. With respect to the text-level features of text, sentence structure, and picture–text match, and to certain word-level features, such as text length, number of unique words, and number of multisyllabic words, the texts differed substantially. Were the levels differentiated on the features that matter most in the development of word solving skills? This study was not intended to extract the effects of all of these features. Its intent was to examine as best as possible with existing texts whether some scaffolding within the text itself makes a difference relative to texts in literature-based basal anthologies that depend on considerable scaffolding by teachers with individual students.

This particular set of little books did not have a perfect progression in terms of word-level features. However, in terms of word-level features overall, all levels of little books were easier than the texts of the anthology. More words were repeated, there were fewer multisyllabic words (except for level 7, which only a small portion of little book students read), phonetically regular words were more prominent, and substantially fewer words occurred a single time.

The role of a host of text variables in supporting or detracting from the development of independent word solving skills can only be established with a considerable investment of time and resources by researchers and research agencies. Numerous variables—even at the word level (e.g., the imagery value described by Sadoski & Paivio, 2001)—require consideration. The search for the precise prescription

for texts designed to help with beginning readers' transition into conventional reading is likely to be difficult. Even if the aim is a set of guidelines for appropriate text rather than precise prescriptions, numerous questions need to be addressed if beginning reading programs are to provide the best possible experiences for challenged readers.

With regard to the second question—did the little books perfectly match the reading levels of the students in the intervention group—the answer is that the match was approximate rather than perfect. Students in the intervention group were divided into reading groups based on the initial pretests, at which time they were provided with texts matched to their reading levels. Following this, each group of readers moved along the continuum of texts provided by the little book curriculum, moving from one level to the next when they had exhausted all the books at the previous level. Students were not assessed at different points of the intervention for ascertaining a continued match between the texts being read and their reading levels.

The findings of this study also highlight the fact that current first-grade literature-based basal anthology texts provide a similar task in terms of word- and text-level features, at least from the middle to the end of first grade. This "one size fits all" perspective—both in terms of features of texts for students from the beginning to the end of first grade and in lessons recommended for teacher use with students whatever their independent word solving level—does not provide the scaffolds needed by many children who are challenged in learning to read. When first graders are given texts where the scaffolds of text and sentence structure and picture–text match are steadily decreased and where the demands for linguistic knowledge and cognitive resources are steadily increased, even reading them in semi-independent settings seems to be more supportive of independent word solving skills.

To some, these conclusions may fall into the realm of the "already known." However, the literature-based basal anthology program of the comparison condition is presented as the factor behind higher reading achievement in a research study conducted in Washington, DC, a school system quite similar in demographics to that in the current study (Houghton Mifflin, 2002). Further, the literature-based basal anthology curriculum defines the reading instruction that many children receive. Especially for students in less economically viable communities, the money provided by state funding agencies determines the materials that they receive. In California's recent adoption where decodable books are required

to accompany the anthology, the anthology continues to be the central component in the teachers' manuals (California English/Language Arts Committee, 1999).

Good and experienced teachers, especially in districts or schools with more resources than in the school observed here, will likely provide children with a wide variety of reading materials, thereby not necessitating that independent or guided reading be done out of the literature-based basal anthologies. Yet, as discussed in an earlier section, students in high-poverty, high-minority, and low-achieving schools have the least access to skilled instructors (*Education Weekly*, 2003). Further, many teachers across the country continue to build their reading instruction largely out of the basal reading series provided to them (Baumann et al., 1998). In the context of a comprehensive reading curriculum, literature-based basal anthologies may be invaluable in scaffolding the listening comprehension skills, vocabulary, and literary appreciation of first graders. Nevertheless, they do not attend systematically to the developmental needs of many first graders to make the transition from emergent into conventional readers as defined by their ability to independently word solve in the texts that they are asked to read. Further, curricular materials play an important role in shaping and scaffolding teachers' instructional practices (Ball & Cohen, 1996), so that reading programs that are available to beginning teachers may influence their understandings of what constitutes appropriate learning for that grade as well as how to scaffold that learning.

It should be emphasized, however, that developing the little book curriculum necessitated the expenditure of a substantial amount of time and effort on the part of the researchers. It involved the use of a computer program to analyze the word-level features of the texts. It also involved researcher input to match readers with texts of an appropriate level at the beginning of the intervention. Teachers cannot be expected to spend the same amount of time and effort analyzing the features of texts in their classroom, especially in the high-poverty, high-needs districts under discussion. Therefore, the little book curriculum described in this study is not supportive of unskilled teachers in its current form. Rather, this study should be viewed as a first step in validating the model proposed in this article, with the aim of developing a general set of guidelines that could potentially guide the development of supportive text-based curricula by publishers and policymakers.

At the same time, models of text such as the one proposed in this article cannot be viewed as

quick fixes, especially for low-achieving, high-poverty, or minority group children. Text-based curricula can support but not replace good instruction. Teachers should be educated to be cognizant of a combination of text-level scaffolds in the books they select. They should also be educated on selecting different types of text-based curricula to accomplish different instructional needs for their students.

More empirical work with the underlying curriculum and book sorting is required before the strategies of this study are strongly recommended to publishers or classroom teachers. For one, it is not clear at what point in reading development the introduction of such a curriculum is most useful. All the children included in this sample had basic letter–sound knowledge, even though some were not conventional readers at the start of the intervention. Further, the study did not examine the relevance of the curriculum past the end of first grade. It may well be that students who reach the latter levels of this scheme should be reading from the literature-based basal anthologies and from trade books, rather than little books, because the characteristics of texts in the two programs at levels 6 and 7 did not differ substantially from one another. Finally, the study was conducted in four classrooms of one school, raising questions about the generalizability of its findings to other contexts and populations. Despite these limitations, the findings of this study suggest that texts that have been crafted to incorporate multiple text- and word-level scaffolds can support the transition into independent word solving and passage reading, especially for children who are challenged in learning to read.

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REFERENCES

ADAMS, M.J. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: MIT Press.

ALLINGTON, R., & WOODSIDE-JIRON, H. (1998). Decodable text in beginning reading: Are mandates and policy based on research? *ERS Spectrum, 16*, 3–13.

AMSTERDAM, L., AMMON, P., & SIMONS, H. (1990). Children's elicited imitations of controlled and rewritten reading texts. *Journal of Educational Psychology, 82*, 486–490.

ANDERSON, R.C., HIEBERT, E.H., SCOTT, J.A., & WILKINSON, I.A.G. (1985). *Becoming a nation of readers: The report of the Commission on Reading*. Washington, DC: National Institute of Education.

BALL, D.L., & COHEN, D.K. (1996). Reform by the book: What is—or might be—the role of curriculum materials in teacher learning and instructional reform? *Educational Researcher, 25*(9), 6–8.

BALL, D.L., & FEIMAN-NEMSER, S. (1988). Using textbooks and teachers' guides: A dilemma for beginning teachers and teacher educators. *Curriculum Inquiry, 18*, 401–423.

BARR, R. (1972). The influence of instructional conditions on word recognition errors. *Reading Research Quarterly, 7*, 509–529.

BAUMANN, J.F., HOFFMAN, J.V., MOON, J., & DUFFY-HESTER, A.M. (1998). Where are teachers' voices in the phonics/whole language debate? Results from a survey of U.S. elementary teachers. *The Reading Teacher, 51*, 636–650.

BECK, I.L., & BLOCK, K.K. (1979). *An analysis of dimensions that affect the development of code-breaking ability in eight beginning reading programs*. Pittsburgh, PA: University of Pittsburgh, Learning Research and Development Center.

BRENNAN, A., BRIDGE, C., & WINOGRAD, P.N. (1986). The effects of structural variation on children's recall of basal reader stories. *Reading Research Quarterly, 21*, 91–104.

BRIDGE, C.A., & BURTON, B. (1982). Teaching sight vocabulary through patterned language materials. In J.A. Niles & L.A. Harris (Eds.), *New inquiries in reading research and instruction* (pp. 119–123). Washington, DC: National Reading Conference.

BRIDGE, C.A., WINOGRAD, P.N., & HALEY, D. (1983). Using predictable materials vs. preprimers to teach beginning sight words. *The Reading Teacher, 36*, 884–891.

BRYANT, P.E., MACLEAN, M., BRADLEY, L.L., & CROSSLAND, J. (1990). Rhyme and alliteration, phoneme detection, and learning to read. *Developmental Psychology, 26*, 429–438.

CALIFORNIA ENGLISH/LANGUAGE ARTS COMMITTEE. (1987). *English-language arts framework for California public schools (kindergarten through grade twelve)*. Sacramento: California Department of Education.

CALIFORNIA ENGLISH/LANGUAGE ARTS COMMITTEE. (1999). *English-language arts framework for California public schools (kindergarten through grade twelve)*. Sacramento: California Department of Education.

CAMPBELL, D.T., & STANLEY, J.C. (1963). Experimental and quasi-experimental designs for research on teaching. In N.L. Gage (Ed.), *Handbook of research on teaching* (pp. 171–246). Chicago: Rand McNally.

CARROLL, J.B., DAVIES, P., & RICHMAN, B. (1971). *Word frequency book*. Boston: Houghton Mifflin.

CELEBRATION PRESS. (1997). *Little celebrations: Guided reading packages (Emergent, Early, Fluent)*. Parsippany, NJ: Author.

CHALL, J.S. (1967/1983). *Learning to read: The great debate* (3rd ed.). Fort Worth, TX: Harcourt Brace.

COOPER, J.D., PIKULSKI, J.J., AU, K.H., CALDERON, M., COMAS, J.C., LIPSON, M.Y., ET AL. (1998). *Invitations to literacy*. Boston: Houghton Mifflin.

DUKE, N.K. (2000). 3.6 minutes per day: The scarcity of informational texts in first grade. *Reading Research Quarterly, 35*, 202–224. doi:10.1598/RRQ.35.2.1

EDUCATION MARKET RESEARCH. (2000). *Elementary reading market update: December 2000*. Retrieved April 14, 2003, from http://www.ed-market.com

EDUCATION WEEKLY. (2003, January). *If I can't learn from you: Ensuring a highly qualified teacher for every classroom*. Retrieved November 21, 2003, from http://www.edweek.org/sreports/QC03

EHRI, L.C. (1998). Grapheme-phoneme knowledge is essential for learning to read words in English. In J.M. Metsala & L.C. Ehri (Eds.), *Word recognition in beginning literacy* (pp. 3–40). Mahwah, NJ: Erlbaum.

ELSON, W.H., & GRAY, W.S. (1930). Elson basic readers. Chicago:

Scott, Foresman.

FOUNTAS, I., & PINNELL, G.S. (1999). *Matching books to readers: Using leveled books in guided reading, K–3*. Portsmouth, NH: Heinemann.

FRITH, U. (1985). Beneath the surface of developmental dyslexia. In K. Patterson, J. Marshall, & M. Coltheart (Eds.), *Surface dyslexia* (pp. 301–330). London: Erlbaum.

GATES, A.I., & RUSSELL, D.H. (1938a). Types of materials, vocabulary burden word analysis, and other factors in beginning reading: I. *Elementary School Journal, 39*, 27–35.

GATES, A.I., & RUSSELL, D.H. (1938b). Types of materials, vocabulary burden word analysis, and other factors in beginning reading: II. *Elementary School Journal, 39*, 119–128.

GOODMAN, K.S. (1968). The psycholinguistic nature of the reading process. In K.S. Goodman (Ed.), *The psycholinguistic nature of the reading process* (pp. 13–26). Detroit, MI: Wayne State University.

GOSWAMI, U. (1995). Phonological development and reading by analogy: What is analogy, and what is not? *Journal of Research in Reading: Special Issue: The contribution of psychological research, 18*(2), 139–145.

GOSWAMI, U., & BRYANT, P.E. (1990). *Phonological skills and learning to read*. Hillsdale, NJ: Erlbaum.

GRAY, W.S., MONROE, M., ARTLEY, A.S., ARBUTHNOT, A.H., & GRAY, L. (1956). The new basic readers: Curriculum foundation series. Chicago: Scott, Foresman.

HAYES, D.P., WOLFER, L.T., & WOLFE, M.F. (1996). Schoolbook simplification and its relation to the decline in SAT-verbal scores. *American Educational Research Journal, 33*, 489–508.

HIEBERT, E.H., LIU, G., LEVIN, L., HUXLEY, A., & CHUNG, K. (1995, November). *First graders reading the new first-grade readers*. Paper presented at the annual meeting of the National Reading Conference, New Orleans, LA.

HIEBERT, E.H., & MARTIN, L.A. (2002). TExT (Text Elements by Task) software (3rd ed.). Santa Cruz, CA: TextProject.

HIEBERT, E.H., MARTIN, L.A., & MENON, S. (in press). Are there alternatives in reading textbooks? An examination of three beginning reading programs. *Reading and Writing Quarterly*.

HOFFMAN, J.V., MCCARTHEY, S.J., ABBOTT, J., CHRISTIAN, C., CORMAN, L., CURRY, C., ET AL. (1994). So what's new in the new basals? A focus on first grade. *Journal of Reading Behavior, 26*, 47–73.

HOFFMAN, J.V., ROSER, N., SALAS, R., PATTERSON, E., & PENNINGTON, J. (2001). Text leveling and little books in first-grade reading. *Journal of Literacy Research, 33*, 507–528.

HOFFMAN, J.V., SAILORS, M., & PATTERSON, E.U. (2002). Decodable texts for beginning reading instruction: The year 2000 basals. *Journal of Literacy Research, 34*, 269–298.

HOLDAWAY, D. (1979). *The foundations of literacy*. Sydney, NSW, Australia: Ashton Scholastic.

HOUGHTON MIFFLIN. (2002). *Houghton Mifflin reading program efficacy studies*. Retrieved April 14, 2003, from http://www.eduplace.com/marketing/nc/research.html

JACOBS, S. (1997). *Good girl*. Parsippany, NJ: Modern Curriculum Press.

JOHNSTON, F.R. (2000). Word learning in predictable text. *Journal of Educational Psychology, 92*, 248–255.

JUEL, C., GRIFFITH, P., & GOUGH, P.B. (1986). Acquisition of literacy: A longitudinal study of children in first and second grade. *Journal of Educational Psychology, 78*, 243–255.

JUEL, C., HIEBERT, E.H., & ENGLEBRETSON, R. (1997). Ready readers. Parsippany, NJ: Modern Curriculum Press.

JUEL, C., & ROPER/SCHNEIDER, D. (1985). The influence of basal readers on first grade reading. *Reading Research Quarterly, 20*, 134–152.

JUEL, C., & SOLSO, R.L. (1981). The role of orthographic redundancy, versatility and spelling-sound correspondences in word identification. In M.L. Kamil (Ed.), *Directions in reading: Research and instruction* (30th yearbook of the National Reading Conference, pp. 74–92). Rochester, NY: National Reading Conference.

LEU, D.J., JR., DEGROFF, L.J.C., & SIMONS, H.D. (1986). Predictable texts and interactive-compensatory hypotheses: Evaluating individual differences in reading ability, context use, and comprehension. *Journal of Educational Psychology, 78*, 347–352.

MARK, A. (1997). *Monster mop*. Parsippany, NJ: Modern Curriculum Press.

MARTIN, B., & BROGAN, P. (1971). *Teacher's guide to the instant readers*. New York: Holt, Rinehart, & Winston.

MESMER, H.A. (2001). Decodable text: A review of what we know. *Reading Research and Instruction, 40*, 121–141.

MORRIS, D. (1993). The relationship between children's concept of word in text and phoneme awareness in learning to read: A longitudinal study. *Research in the Teaching of English, 27*, 133–154.

PETERSON, B.L. (1991). Selecting books for beginning readers. In D.E. DeFord, C.A. Lyons, & G.S. Pinnell (Eds.), *Bridges to literacy: Learning from Reading Recovery* (pp. 119–147). Portsmouth, NH: Heinemann.

REITSMA, P. (1983). Printed word learning in beginning readers. *Journal of Experimental Child Psychology, 36*, 321–339.

ROLLER, C.M. (2001). A proposed research agenda for teacher preparation in reading. In C.M. Roller (Ed.), *Learning to teach reading: Setting the research agenda* (pp. 198–205). Newark, DE: International Reading Association.

SADOSKI, M., & PAIVIO, A. (2001). *Imagery and text: A dual coding theory of reading and writing*. Mahwah, NJ: Erlbaum.

SAMUELS, S.J. (1970). Effects of pictures on learning to read, comprehension and attitudes. *Review of Educational Research, 40*, 397–408.

SHADISH, W.R., COOK, T.D., & CAMPBELL, D.T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. New York: Houghton Mifflin.

SHANAHAN, T. (1984). Nature of the reading-writing relations: An exploratory multivariate analysis. *Journal of Educational Psychology, 76*, 466–477.

SIMONS, H.D., & LEU, D.J., JR. (1987). The use of contextual and graphic information in word recognition by second-, fourth-, and sixth-grade readers. *Journal of Reading Behavior, 19*, 33–47.

SNOW, C., BURNS, M.S., & GRIFFIN, P. (Eds.). (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.

TEXAS EDUCATION AGENCY. (1990). *Proclamation of the State Board of Education advertising for bids on textbooks*. Austin: Author.

TEXAS EDUCATION AGENCY. (1997). *Proclamation of the State Board of Education advertising for bids on textbooks*. Austin: Author.

THORNDIKE, E.L. (1903). *Educational psychology*. New York: Lemcke & Buechner.

THORNDIKE, E.L. (1921). *The teacher's word book*. New York: Columbia University Press.

TREIMAN, R. (1992). The role of intrasyllabic units in learning to read and spell. In P.B. Gough, L.C. Ehri, & R. Treiman (Eds.), *Reading acquisition* (pp. 65–106). Hillsdale, NJ: Erlbaum.

VYGOTSKY, L.S. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds. & Trans.). Cambridge, MA: Harvard University Press.

WERTSCH, J.V. (1998). *Mind as action*. New York: Oxford University Press.

WRIGHT GROUP/MCGRAW-HILL. (1996). Sunshine Reading Program. Bothell, WA: Author.

WYLIE, R.E., & DURRELL, D.D. (1970). Teaching vowels through phonograms. *Elementary English, 47*, 787–791.

ZENO, S.M., IVENS, S.H., MILLARD, R.T., & DUVVURI, R. (1995). *The educator's word frequency guide*. Brewster, NY: Touchstone Applied Science Associates.

AUTHORS' NOTE

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