Are There Alternatives in Reading Textbooks?

An Examination of Three Beginning Reading Programs

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Running Head: Three Reading Programs

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Abstract

In this study, the characteristics of the texts for beginning readers were examined through case studies of three programs that differ in their emphasis on literature and decodable texts. Texts were examined from the vantage point of the linguistic information that readers require to be successful in reading a text and the amount of different linguistic information that is presented in texts.

The case studies of the programs indicate that components have been added to all programs to accommodate different markets. The phonics-oriented program includes a literature component, while the literature program includes decodable texts. The literature differs little from program to program. Further, the vocabulary of literature is unique relative to that of the decodable and leveled texts. The decodable texts of the three programs are different in their linguistic content and cognitive load. Cognitive load demands are high in all but two of the components of the phonics-oriented program where 50% of the words are repeated at least four times. In all of the other components of the three programs, the majority of words appear three times or fewer.
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The policies of the nation’s two largest states over the past 15 years are evidence that
beginning reading textbooks are viewed as a primary means of reading intervention. The
California English/Language Arts Committee (1987) initiated massive changes in reading
materials by mandating textbooks with authentic literature, a policy that the Texas Education
Agency (1990) followed. In its next textbook adoption—in 2000—the Texas Education Agency
(1997) took a different tack by mandating that beginning texts be decodable. For its 2002-03
textbook adoption, the California English/Language Arts Committee (1999) followed the Texas
mandate for decodable text.

These changes require considerable effort by publishers, state and school district
personnel, and classroom teachers. However, the variation across the student texts that form a
central component of these interventions is uncertain. The present study considers the
characteristics of student texts within components and levels of three textbook programs that
have different theoretical stances to reading acquisition. The basis for describing text features is
the Text Elements by Task (TExT). Following a description of the TExT model, we review the
existing research for the variables that provide the focus of this study—differences across levels
and components within programs and differences across programs.

The TExT Model
Currently, a handful of models are evident in the pedagogical literature for describing the difficulty of texts for beginning readers: text leveling (Fountas & Pinnell, 1999), lexiles (Smith, Stenner, Horabin, & Smith, 1989), decodability, engagingness, and predictability (Hoffman et al., 1994), and potential for accuracy (Stein, Johnson, & Gutlohn, 1999). As a review of the theoretical and empirical bases for these models shows (Hiebert, 2002), none comprehensively attends to the relationship of text to the processes and content that characterizes beginning reading acquisition. The focus of the TExT model is on describing the linguistic and cognitive proficiencies that children require to be successful with particular texts and also the proficiencies that particular texts foster in beginning readers.

Linguistic Content

Rather than attending to each written word as a unique case dissociated from any other written word, success in learning to read depends on making generalizations about systems that underlie written words (Adams, 1990; Share, 1995). The most prominent of these systems pertains to the alphabetic nature of English words. Twenty-six letters represent the 44-46 phonemes of spoken English. The ability to use letter-sound relationships in figuring out unknown words characterizes successful beginning readers (National Reading Panel, 2000).

Another prominent group of words consists of those that occur frequently in sentences. Among the 25 words account for one-third of the words in elementary texts (Carroll, Davies, & Richman, 1971), half have irregular letter-sound relationships. Recognizing these irregular but frequent words requires a set for diversity.
Semantic and syntactic systems also support recognition of English words (Anderson & Pearson, 1984). In a sentence such as “I can read a….. “, beginning readers use syntactic and semantic knowledge to predict that the next word will be book or, if that does not work, word or sign. The little, predictable books that been used widely since the late 1980s have numerous high-meaning words (Hiebert, 1999) with each book enumerating a new category of items such as food or animals. Since meaningfulness is central to any linguistic act, high-meaning words are the first ones learned by children who become readers prior to school entry (Durkin, 1966). However, strategies for remembering high-meaning words in texts that have many, infrequent words of this type have not been studied, particularly relative to the acquisition of high-frequency and phonetically regular words.

Known words with simple morphemes (e.g., plurals) typically generate less attention among reading researchers in the debate about what to teach beginning readers. This linguistic system becomes increasingly more critical as students encounter the texts of the upper primary grades where complex morphological derivatives are many (Hiebert, 2002).

Cognitive Load

Cognitive load has to do with the amount of new linguistic information beginning readers can handle while comprehending the text’s message (LaBerge & Samuels, 1974). Various assumptions were made about the rate of introducing new words by the behaviorists who designed the Dick and Jane era textbooks that dominated American beginning reading instruction from the 1930s through the mid-1980s (Elston & Gray, 1930). These assumptions were tested
almost exclusively with high-frequency words such as \textit{the, then, there}, and \textit{they} (Gates & Russell, 1938-39). High-frequency words, particularly those with irregular letter-sound relations, give children little opportunity to apply the strategic stance toward word recognition that characterizes proficient beginning reading (Share, 1995). Numerous factors likely require consideration in determining the exposure beginning readers require to words, including the size of their existing word corpus, the features of the words, and the imagery value of words (Thompson, Cottrell, & Fletcher-Flinn, 1996). Even so, there is likely an upper limit to the number of new, unique words that even rapidly progressing readers can read in a single text. In examining children’s reading of words in little, predictable books, Johnston (2000) found that the highest readers remembered 30 of the 160 unique words in 3 texts at the end of the three-week period, the middle readers 15, and the lowest readers 6. Reitsma’s (1983) conclusion that at least four exposures are necessary for students who have basic word recognition skills remains the best guideline to date.

Levels and Components within Different Programs

Even over the 50-year period from the 1930s to 1980s when the marketplace was dominated by basal programs (Chall & Squire, 1991), alternative beginning reading programs were plentiful. During the 1970s and 1980s, Texas textbook adoptions included a slot for a phonics-oriented textbook program such as the Scribner Reading Series (Cassidy, Roettger, & Wixson, 1987). Programs that emphasized phonics were developed through federal initiatives in the 1960s such as DISTAR (Bereiter & Englemann, 1966). Meaning-oriented alternatives were
also present. In the 1970s, California and Texas allocated funds for supplementary adoption of Bill Martin Jr.’s (1966) “Sound of Language” series that consisted of poetry and rhythmic literature. None of these alternative programs dominated the mainstream market until the past several years when California’s standing in the 1994 National Assessment of Educational Progress state-by-state assessment (Campbell, Donahue, Reese, & Phillips, 1996) raised questions about the mainstream, basal textbook programs.

A group of basal or mainstream programs continues to be published, although the number has declined with increasing costs of publishing (Chall & Squire, 1991). There are also two textbook programs that have advertised as having a stronger phonics emphasis than the typical basal programs: Open Court (Adams et al., 2000) and Reading Mastery (Engelmann & Bruner, 1995). These two programs differ in that the former has had an initial emphasis on phonics, followed by literature. Reading Mastery has had a phonics emphasis throughout.

In light of the various mandates by the state-wide textbook adopters, the nature of changes in basal and phonics-oriented programs and fidelity to their claimed emphases deserve attention. Two dimensions of these three types of programs were of particular interest in this study: changes in linguistic information and cognitive load over the levels of a program and changes in linguistic information and cognitive load across components of programs.

Levels within Programs

Most models of reading acquisition surmise substantial changes over the first stages of reading development (Chall, 1983; Ehri, 1991; Juel, 1991; Stanovich, 1991) that is associated
with first grade. Historically, first-grade components of textbook programs have been presented in a progression of levels. In the model of first-grade text that Gray initiated with the 1930 Scott Foresman program (Elston & Gray, 1930), first-grade texts consisted of five levels: three preprimers, a primer, and a first-grade reader. Within the 1956 edition of the Scott, Foresman New Basic Readers, 72 new, unique words appeared in the three preprimers, 101 in the primer, and 150 in the first-grade reader (Gray, Monroe, Artley, Arbuthnot, & Gray, 1956). While the controlled vocabulary was gone in the literature-based programs that appeared in response to the California English/Language Arts Committee’s (1987) mandates for literature, five-level format continued in the form of five books, now called anthologies.

Even among the alternative programs of previous decades, differences were greatest at the preprimer levels. Juel and Roper/Schneider (1985), in reporting on influence of the theoretical stance of beginning reading programs on first graders’ word recognition strategies, observed that the differences between a phonics and mainstream program lay in the three preprimers. After that point, the student texts of both programs were similar.

Hypotheses can be made about ways in which linguistic information and cognitive load might be expected to change over first-grade texts. Beginning readers who are moving from Chall’s (1983) of prereading (Stage 0) to initial reading or decoding (Stage 1) would not be asked to read 20-25 words with a range of vowel patterns in each consecutive text, although they would be reading texts much beyond those with monosyllabic words with simple vowel correspondences. While general directions such as these can be predicted, researchers have not
established the speed with which children, particularly those who do not have extensive prior literacy experiences, assimilate new linguistic information.

Components

Numerous ancillary materials in the form of workbooks accompanied the student editions of basal reading programs (Anderson, Hiebert, Scott, & Wilkinson, 1985). The textbook programs of the late 20th century and early 21st century include workbook components but they also have additional sets of books. These sets of books, particularly decodable books, have become particularly critical over the last decade, especially when the Texas Education Agency’s (1993) indicated that the mandate for decodable text could be satisfied in ancillary components. California English/Language Arts Committee (1999), for the first time, mandated that decodable books accompany the core textbook program. The connections of these sets of books to the anthologies are unclear.

The content of the first-grade texts that are the focus of policy at state levels is unclear. This study addresses the question of differences and similarities in the content across levels and components of three beginning reading programs: a mainstream basal program (Harcourt Collections, 2001), a phonics and literature program (Open Court, 2000), and a phonics program (Reading Mastery, 1995).

Method

Selection of Materials
In the categories of comprehensive textbook programs with comparable philosophies, Reading Mastery and Open Court have no competitors. The mainstream textbook category, however, was represented by five programs at the time this analysis was initiated: Scholastic, McGraw-Hill, Scott Foresman, Harcourt, and Houghton Mifflin. With the exception of Houghton Mifflin, all of the programs had created new copyrights for the Texas textbook cycle that began in the fall of 2000. Except for the initial level of Houghton Mifflin, an analysis of the literature or anthology components of these five programs showed the linguistic content and cognitive load to be consistent (Hiebert, 2001). The Harcourt Collections program (Farr et al., 2001) was selected because of its prominence in the Texas marketplace (Association of American Publishers, 2001).

Teachers’ guides, catalogs, and information material on websites were consulted to establish the components of each program. Visits were also made to publishers’ exhibits at the 2001 meeting of the International Reading Association. While the three programs differed in the emphasis that particular components had in the teacher’s guides, each had a component that fell into the following three categories: (a) literature (either within a collected anthology or as trade books), (b) decodable texts (either as individual books or within a workbook), and (c) little or leveled books (all as individual texts). While the publishers call these components by different names, we have chosen to refer to them with similar labels. Table 1 describes the number of texts belonging to each program and under what component it fits in.
Within each of the programs, all of the texts that were part of a particular component were analyzed. The texts of programs were parsed in three ways. The first was the level that represents a time period in the program. The texts for a program were divided into five levels representing the first-grade program. When initial analyses showed that the differences across programs were not easily determined across five levels, data for the beginning, middle, and final levels of the programs became the focus.

The second examination was of the text characteristics of the three components of a program: literature, decodable books, and leveled books. The final focus was of the entire program, permitting an examination of the similarities and differences across levels and components. A particular interest lay in what will be called “core” vocabulary for a component and an entire program. The core vocabulary consists of words that are repeated a minimum number of four times.

**Coding Scheme**

Data on text characters were obtained by analyzing all texts for all levels of all components of the three textbook programs with a hypercard computer program (Hiebert & Martin, 2002). This program provides data on number of total words, number of unique words, repetitions of unique words, high-frequency word status of unique words, and decodability categorization of unique words.
Total number of words and unique words are fairly straightforward indices. Because of the differences in the numbers of words within texts at different levels, we report on unique words as a function of 100 running words of text, a measure first used by Chall (1967/1983). In considering repetitions, Reitsma’s (1983) finding of four repetitions was chosen for inclusion in the core vocabulary.

The hypercard program assesses the presence of high-frequency words according to the 100 most frequent words in written texts (Carroll et al., 1971; Zeno, Ivens, Millard, & Duvvuri, 1995). Within the program, the decodability of words beyond this group of 100 is assigned one of eight different levels of difficulty. Because many of the most frequent 100 words have irregular patterns, coding these words according to decodability levels inflates the percentage of monosyllabic words with complex vowels. Consequently, in describing linguistic content, the 100 most-frequent words are presented as a separate group. All words beyond this group are assigned one of eight decodability patterns. Levels 1-3 comprise words with “simple” patterns—that is, a one-to-one correspondence between phonemes and graphemes (ranging from 1 for words such as go, 2--cat, and 3--spin). Levels 4-5 represent words with long vowels (4 for words such as ride, 5—meat). Levels 6-7 represent words with complex vowels (6 for words such as boil, 7 for monosyllabic words with variant vowels such as bread). Level 8, which represents the highest level of difficulty according to this classification, consists of multisyllabic words. Using this method for assessing decodability levels, we characterized texts in terms of
the percentage of words at each of the eight decodability levels for each text, each time period, and for the entire program.

Results

Data on patterns of linguistic information and on cognitive load appear in Table 2. The characteristics of the core vocabulary for each component of a program appear in Table 3 and. percentages of unique words across pairs of components as well as all components within a level appear in Table 4.

Case Study of Harcourt

The literature of the anthology receives the lion’s share of attention in the teacher’s guide of the Harcourt program. As can be seen in Table 1, the number of texts across levels for each component stays very consistent from the beginning to the end of the program.

Literature. Within the literature component, the cognitive processing demands at Level 5 are almost identical to those for Level 1 in the number of unique words per 100 running words of text. The difference across levels lies in the number of total words per text with literature selections moving from 71 to 231 to 323 words per selection across Levels 1, 3, and 5. The data in Table 2 indicates that the distribution of decodability in the Literature is similar for three types of words—monosyllabic words with simple, long, and complex vowels—across the three target
levels. The differences lie in the proportion of unique words accounted for by the 100 most frequent words and multisyllabic words. The percentages of the most-frequent words and the multisyllabic words shift—from 31 and 18 for high-frequency and multisyllabic words in level 1 to 8 and 45 at level 5.

An examination of the core vocabulary—those words that are repeated four times or more across all levels—for the Harcourt Literature in Table 3 indicates that students are expected to recognize words with long and complex vowel patterns in single-syllable words to the same degree as in the first level of literature component as they are in the last level of literature.

**Decodable Books.** The unique word per 100 count decreases from the first to the fifth level for this component. The numbers of new, unique words per 100 words for Levels 3 and 5 are 1.5 times that for Level 1. The length of text quadruples from Level 1 to 3 and then stays consistent. The linguistic content changes from Levels 1 and 3 to Level 5 in the percentage of monosyllabic words with simple vowels. While approximately 30% of the unique words in Levels 1 and 3 are monosyllabic words with simple vowels, the figure is less than 20% at Level 5. However, the percentages of single-syllable words with long and complex vowels remain consistent across the three levels of this component. Students are expected to be as facile with an array of vowel patterns in monosyllabic words at the beginning of the program as they are at the end of the program.

The core vocabulary for the decodable texts accounts for the smallest percentage of any of the core vocabularies in the Harcourt program (as well as any of the components for any of the
other programs)—24%. Two-thirds of the core vocabulary consists of words that fall into the 100 most-frequent group or monosyllabic words with simple vowel patterns.

**Leveled Books.** Unlike the decodable books of Harcourt Collections, the length of the leveled books changes gradually over the levels. Texts are at an average level of 28 words in Level 1. This figure doubles in Level 3 and then again in Level 5. As is typical with increasing total words per text, the unique word per 100 index decreases by almost 10 words from Level 1 to Level 5. The percentages of singletons are high, ranging from 49 to 58%. Unlike the decodable books, the demands for recognizing monosyllabic words with long vowel patterns are not high in Level 1 texts. The percentage of multisyllabic words is also lower in Level 1 and the percentage of monosyllabic words with simple vowel patterns is high. The presence of the latter group of words remains steady through Level 3.

The core vocabulary for the leveled books is similar to that of Harcourt’s literature component. One-third of each word corpus is repeated at least four times or more. The linguistic content of the two vocabularies is also similar with words among the 100 frequent and monosyllabic words with simple vowels accounting for 50% of the vocabularies.

**Across Components.** The data in Table 4 show that the percentages of shared vocabulary across any two components of the program is quite similar, whatever the level. The vocabulary shared within components is least in the first level and the highest in Level 5. Even at level 5, the percentage of shared vocabulary is never more than 22%. When the vocabulary for all three components at a level is considered, percentages are somewhat higher, ranging from 23% at
Level 1 to 30% at Level 5. The most prominent linguistic groups that make up the core vocabulary of all components are multisyllabic words and monosyllabic words with simple vowels. To further elucidate the core words, an analysis of the frequency word rankings of the multisyllabic words was done.

Case Study of Open Court

The literature selections and the decodable books receive attention for the first part of first-grade in the teacher’s guide of Open Court. Decodable books are part of lessons, although not to the degree that they were in the 1995 copyright (Menon & Hiebert, 1999). The number of decodable books changes as a function of level, as can be seen in Table 1. Each level from 1 through 3 has from 20 to 26 decodable books. The number falls dramatically with Levels 4 and 5, with 2 texts for the former and 3 for the latter. At this point, the leveled book component enters into the program.

Literature. The unique words per 100 for the literature of Open Court are 31 and 38 words for Levels 1 and 3. When the total number of words increases almost five-fold, as in Level 5, the unique word per 100 count decreases to 17. The high numbers of unique words are paralleled in the percentages of singletons. The singleton rate is at a high of 63% in level 3 and a low of 48% in level 5. The percentage of words that are repeated four times or more gets to a high of 29% in Level 5, where the corpus of words is almost 7,000. When the corpora are lower at 1700 in Level 1 and 1400 in Level 3, percentages of repeated words are 21% and 14%.
In terms of linguistic content, Level 1 has slightly more monosyllabic words with simple vowel patterns than the other two levels (22% vs. 15% and 18%). The category that differs across the levels is the percentage of the 100 most-frequent words. The figure falls substantially by Level 5, as a function of the large corpus of unique and total words. The core vocabulary that comprises 29% of all of the unique words in the literature follows almost an identical pattern as that for Level 1 with 15% and 21% of the core vocabulary among the 100 most-frequent words and 21% monosyllabic words with simple vowel patterns.

Decodable Books. The unique words for Open Court’s decodable books take a pattern that is contrary to that for the levels of the literature: Levels 1 and 3 have fewer unique words per 100 than Level 5 by an average of 10 words. By the same token, the singleton levels are somewhat lower: from 40 to 50%. These levels are considerably less than those for the Literature that ranged from 48 to 63%. Percentages of words that are repeated are somewhat higher, with the highest percentage of repeated words at Level 1.

Linguistic content shows a different distribution across Levels 1 and 3. In Level 1, 68% of the unique words are monosyllabic words with simple vowel patterns. Percentages of monosyllabic words with long and complex vowel patterns are almost nonexistent in Level 1: 1% and 2%. The percentage of multisyllabic words at this level, 10%, is somewhat higher than the percentages for long and complex vowel patterns in monosyllabic words but is lower relative to the percentage of multisyllabic words in other levels and components of Open Court.
Leveled books. The leveled book component takes the place of the decodable books in levels 4 and 5. The data for cognitive load as well as the distribution of linguistic content follow an almost identical pattern to that of Level 5 of the Literature.

Across Components. The critical aspect of the Open Court decodable component that should not be overlooked is the allocation of texts to different levels. For the first three levels, there are 70 books with 78 texts. In the final two levels, there are 8 texts in 5 books. The majority, 93%, of the decodable component is devoted to the initial stages of reading. The leveled books, which consist of additional literature, enter into the program when the decodable texts decrease.

The texts of the decodable and literature components of Open Court differ from each other in linguistic content and, to a lesser degree, cognitive load. At least in the first portion of the decodable component, texts are controlled in their linguistic content. By the third level, the texts emphasize long and complex vowel patterns in monosyllabic words and multisyllabic words. Even here, however, the figures for multisyllabic words are less than those for the texts in the literature and leveled book component. The core vocabulary over the Open Court decodable component has a substantially lower percentage of multisyllabic words than either the literature or leveled book components. Further, the attention to monosyllabic words with simple vowel patterns is higher than the other components as well.

Of 4206 unique words across the three components, 35% of the words occur four times or more. This percentage is similar to that for the Harcourt program. However, because there are
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almost twice as many words within the Open Court program as in Harcourt, the number of
shared unique words in Open Court is twice that of Harcourt.

Case Study of Reading Mastery

At the center of the Reading Mastery program are 155 decodable texts. These texts are
not presented as separate books but are clustered in the style of workbooks. A small set of
leveled books—four for each level—is listed in the 2002 catalog as are a set of literature
selections. The latter come as 22 separate trade books, including classic titles such as The Carrot
Seed (Kraus, 1945). All three components have separate teachers’ guides. In the advertising
material for Reading Mastery, however, the presence of all three components is noted.

Literature. Unique words per 100 rates for the three levels show the pattern that is
common as literature gets longer: The unique word counts for Levels 1 through 3 where texts
average from 70 to about 200 words are from 36-41, while the unique word count for texts that
average 850 words in length in Level 5 is 25. The distribution of linguistic information across
these unique words follows an almost identical pattern at each of the three levels as those for the
literature texts of the Harcourt program. High percentages of these words are singletons and
small percentages of a corpus is repeated—approximately 20%.

Decodable books. Linguistic content changes across the levels of the Reading Mastery
decodable texts in the direction that would be expected in a beginning reading program. Unlike
the equivalent component of the other two programs, the decodable texts of Reading Mastery
have no multisyllabic words in Level 1. A majority of the words at this level are monosyllabic
words with simple vowels and another substantial group of words are high-frequency words. In that Reading Mastery introduces long vowels alongside simple vowels, monosyllabic words with long vowels are present in Level 1 but not to the level of monosyllabic words with simple vowels. By Level 3, the decodable texts of Reading Mastery have a similar distribution in linguistic content as the decodable texts of Open Court. However, because of the large numbers of texts in the Reading Mastery program and because the level of repetition is substantially higher in the Reading Mastery decodable texts, different linguistic content is represented by a substantial group of words. Approximately 50% of the words within a level have four or more repetitions. When the cumulative percentage is examined across levels, the percentage is somewhat higher by the third level—almost 60%. Many words are repeated and the unique word per 100 count is, after the first level, at 10 or below.

Leveled Books. The leveled books, while substantially fewer in number than the decodable texts, have fairly similar characteristics as the decodable texts. The length of texts and the linguistic content follow similar patterns, except at Level 3 where the percentage of multisyllabic words is substantially smaller in the leveled than decodable texts. In style and in linguistic content, Reading Mastery’s leveled books are additional occasions for experiences with the linguistic content that forms the core of the phonics program.

Across components. The data in Table 4 show the overlap in unique words between the leveled and decodable texts to be the higher of any two components of the three programs. Around a quarter of the words within the leveled and decodable texts of Reading Mastery occur
in both contexts. On the other hand, the percentage of words that are shared with the literature texts and the other two components is low.

All Programs

The decodable texts of Harcourt and Open Court are different than the other components of their programs in linguistic content, especially the portion that is shared across levels. On the dimension of cognitive load, Open Court’s decodable texts have lower unique word per 100 counts than their anthologies as well as the literature and decodable texts of Harcourt, at least for the period covering level 1 through level 3—the primary thrust of the Open Court decodable component as evidenced by the presence of 70 of its 75 books for these levels.

Like Open Court, the decodable component of Reading Mastery continues a substantial number of texts. Unlike Open Court, these texts are spread equally over the program. Reading Mastery’s decodable books are different than the decodable texts of the two other programs. One feature is in its repetition of a core vocabulary. Almost twice as many words within the Reading Mastery decodable texts are repeated than in either of the decodable texts of the other two programs. The Reading Mastery core vocabulary for its decodable component is the largest of any single component of any of the three programs. There is a substantial corpus—713 words—that comprises 57% of the unique words in the decodable books of Reading Mastery. Furthermore, the leveled texts of Reading Mastery connect to the decodable texts through a shared vocabulary.
On the literature component, the texts for the three programs do not vary greatly. The literature added to Reading Mastery and the anthologies of Open Court are as difficult, if not more difficult, than the literature of a program that falls into the mainstream category—Harcourt. The literature for Harcourt’s Level 1 has been chosen to emphasize particular phonics elements, leading to a high percentage of monosyllabic words with simple vowels than in the comparable level and component of Open Court.

The signature of the Open Court program has been its decodable texts. In its 2000 edition, Open Court’s paper-backed anthologies highlight the covers of the teacher’s guides, not the decodable books. There is little connection between the vocabulary in the decodable books and the literature in Open Court. The level of shared vocabulary is even lower than that between literature and decodable texts in the Harcourt program.

One feature that distinguishes the programs from one another is the sheer number of words. We selected only three components for all of the programs. Harcourt has other components that fall into the leveled book and literature categories. When an equivalent number of components are examined, however, the number of total words differs substantially across these three programs. If children were exposed to all of the texts of all three components in the Open Court and Reading Mastery texts, they would see about 40,000 total words. Across the three components of the Harcourt program, students would see 18,315 words. Because of the high percentages of repetition in the Reading Mastery program, the number of unique words that students would see in the Harcourt program and Reading Mastery programs would be quite
similar: 3142 across all components of Reading Mastery and 2917 for Harcourt. The number of unique words for Open Court is double that of the other two programs: 6382. Such differences in total and unique word counts represent substantially different challenges and opportunities for beginning readers.

Discussion

One answer to the question that introduced this paper, “Are there different options available to teachers?” is yes. All three programs provide literature, decodable text, and little book components, but the programs vary in the emphasis given to each component. The most striking difference between programs is in the emphasis given to decodable text. While the teacher’s guides of Open Court and Harcourt programs emphasize the literature components, the decodable component is the centerpiece of the Reading Mastery program. The 155 texts in Reading Mastery’s decodable component mean that a different text is available for almost every day of a 180-day school calendar. The corpus of Reading Mastery decodable texts has almost three times as many total words as the comparable Open Court texts and almost eight times more than the Harcourt texts. While the total volume of text provided by the full programs of Reading Mastery and Open Court is similar, decodable text accounts for two-thirds of the total text words in Reading Mastery, compared to less than a quarter in the Open Court program.

In addition to differences in quantity and emphasis, the decodable component of the Reading Mastery program is unique in its cognitive load. Reading Mastery decodable texts have been constructed around a core set of words that are encountered repeatedly across texts. This
core set of words is larger than in other programs--694 words are repeated four or more times in the Reading Mastery decodable texts, compared to 534 words in the Open Court decodable texts and 213 in the Harcourt texts. The Reading Mastery program also provides more opportunities to see words introduced in the decodable component in the leveled book component with higher percentages of shared vocabulary than across components of the other two programs.

The three programs similarly pace the introduction of words containing more difficult vowel patterns. Initial texts exaggerate the use of monosyllabic words with short vowel patterns and high frequency words. Later texts gradually introduce words based on more difficult vowel patterns and multisyllabic words. However, because of the larger size of the core vocabulary within the Reading Mastery decodable component, substantially more opportunities exist for practicing words with long and complex vowels. For example, within the core vocabulary of the Reading Mastery decodable component, 118 monosyllabic words are based on long-vowel patterns and another 101 words are based on complex vowel patterns. In contrast, only 46 core words within the Harcourt decodable component are based on long or complex vowel patterns.

While these comments about cognitive load and linguistic content suggest that the Reading Mastery program provides more opportunities to practice and acquire vocabulary, they need to be considered in relation to two features of the Reading Mastery program that have not been examined by the present analysis. One is Reading Mastery's unique orthography, the efficacy of which has yet to be experimentally determined. In relation to i.t.a., a previous phonetically-based orthography, the advantages were not found to outweigh the disadvantages.
Three Reading Programs

(Bond & Dykstra, 1967). However, the Reading Mastery orthography differs from i.t.a. by retaining conventional English word spellings. More research is necessary to determine whether this orthography has any effect on beginning readers. Another feature that merits further consideration is the engagingness and cohesiveness of the Reading Mastery decodable texts, particularly the initial texts. These texts were explicitly designed to encourage children to focus on decoding by minimizing contextual aids (Engelmann, 1980). Illustrations are placed at the end of texts to encourage children to make predictions based on the print, rather than using the illustrations to make predictions about the print. Many of the early stories also limit contextual cues by including nonsensical elements, such as an old man shaving a rock and a dog eating a car. Later stories are highly repetitive and many focus on adversarial relationships between people. Research is needed to determine whether these stories are engaging to children and more importantly, how the engagingness of decodable texts affects student learning and motivation.

While the Reading Mastery program clearly differs from the other two programs in terms of its decodable component, the Open Court program also differs in terms of the emphasis given to different components during the course of the school year. Open Court offers the most instructionally integrated program. Each of the components is incorporated in the instructional routine outlined in the teacher's guide. While Open Court's beginning reading program has often been equated with its decodable text, the emphasis of the program is more fully on the reading of its literature selections. The literature selections for the first 60% of the year are no longer optional in the 2000 copyright (Adams et al., 2000). Decodable texts are emphasized during the
beginning of the year, with the systematic exaggeration of monosyllabic words based on simple vowel patterns. By mid-year, however, the reading of decodable texts decreases, as the main emphasis shifts almost exclusively to the reading of literature and leveled books.

While the discussion thus far suggests that there are differences between programs, when judged according to other criteria, the real answer to the question “Are there alternatives in first-grade reading programs?” may be no. The cognitive load of almost all components in all programs is high. Within the first level of the Open Court decodable texts, 179 new words are introduced with 55 repeated four or more times. While the slower-paced Reading Mastery program introduces fewer words in the first level—63 words--only 15 are repeated four or more times. Such learning trajectories will be steep for many beginning readers, particularly the 40 to 45% who form the below-basic group in an American school cohort (Campbell et al., 1996).

Many questions remain about the rate at which children learn words. It is unlikely, however, that children who are learning 9 to 10 new words a week (as in Reading Mastery’s first level) will be learning 32 new words a week in their third and fourth months of school (as in Reading Mastery’s second level).

These three programs also do not differ substantially in the nature of literature and the connections of this literature to the word recognition curriculum. The characteristics of the literature texts are similar across the three programs. While the themes and concepts emphasized in texts was not one of this study’s foci, the conceptual content of literature and the other components of a program show no clear-cut connections. While Open Court places different
emphases on components in an attempt to be responsive to the different needs of beginning
readers, neither the themes nor the vocabulary of the literature is integrated with those of the
decodable texts. This is also true for the other programs.

These analyses bring to the fore questions about what constitutes an instructional
program. At what point can children attend to several dozen different words within a single text?
Because of the interest in the present study to view texts as part of instructional programs, text
characteristics have been summarized across groups of texts. For children, texts occur in single
reading events. In single reading events, the unique word counts are much higher. Is it possible
to design an instructionally sound program, while maintaining engaging storylines or
informational content? Could the principles of instructional design underlie a textbook
program—a design that emphasizes generalizability of phonics knowledge, not simply high-
frequency words? We believe that it can. In another study, we have taken an existing little book
program and clustered it to emphasize particular phonics patterns and high-frequency words
(Menon, in progress). At the end of 15 weeks, significantly more students were reading at or
above grade level in the classrooms using leveled little books than in those reading the school-
adopted anthologies. Furthermore, the reading of little books aided both struggling and more
advanced readers in their levels of word recognition.

Existing beginning reading programs leave many questions unanswered. Components
appear to have been added and adjusted in response to the mandates of policy-makers and
perceptions of the wishes of consumers, rather than on the basis of coherent theoretical
perspectives on what children need to learn to become successful readers and how they acquire this information. If children are not to be left behind—especially the many children who depend on schools for their academic literacy experiences—beginning reading texts need to be revisited from the vantage point of the processes and content of successful beginning reading acquisition.
References


California English/Language Arts Committee (1999). *English-Language Arts Content Standards for California Public Schools (Kindergarten Through Grade Twelve)*. Sacramento: California Department of Education.


Hiebert, E.H. (2001, April). Pace and repetition: The forgotten variables in the design of beginning reading programs. Paper presented as part of the symposium Texts that support beginning reading acquisition: What we know and how we know it at the annual meeting of the American Educational Research Association, Seattle, WA.


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