Curious George and Rosetta Stone: The Role of Texts in Supporting Automaticity in Beginning Reading

Elfrieda H. Hiebert
TextProject &
University of California, Santa Cruz

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Through my early teens, I lived in a dual language—German and English— environment, but my use of German fell off rapidly once I began third grade in a large urban school. Unlike the students in the small village school that I had attended to that point, my new classmates were all native English speakers. And, as often happens with children from immigrant homes, I became adamant that I would fit in by only speaking English, too. As I approached my 60th birthday, however, my lifelong interest in literacy and language (and of gerontology) convinced me that I would like to recapture my first language and become proficient in German.

I began by getting a set of German-language children's books. My reasoning was that reading these books could be a focus of frequent phone conversations with *meine Mutti*, a fluent German speaker. I selected books that were easily obtained in the United States, one of which was *Coco fährt Rad* (*Curious George Gets a Bike*; Rey, 1980). Putting into practice what I have learned and even written about the appropriate pedagogy for building fluency (see, e.g., Hiebert, 2007), I practiced repeated reading of the book. My mother and I had the same version of the text and, several times a week, I would read a section to her repeatedly. These read-aloud sessions were painful. Why? Consider the section *Coco fährt Rad* in Table 1. I knew the meaning of the words in this section—since I assume that automaticity and comprehension are inseparable. Consequently, I began each session with a translation of the text. But there were so many words to pronounce! I was fast with the high-frequency words such as *das, ist, er, bei, dem*, and *mit*.

However, multisyllabic words such as *neugierig, aufwachte,* and *besonderer* were not so easy, especially when the next paragraph had a new set of challenging multisyllabic words—in this case, *Frühstück, Dschungel,* and *Überraschung.*

After the first several weeks of these repeated reading sessions, I was convinced that I was developing a reading disability in German. I would see a big word coming up in the text and start making errors with the little words.

At this point, I decided to try a new approach. I bought the first levels of the language-learning software program, Rosetta Stone. I moved quickly through the first lessons that focus on colors, numbers, and simple objects, as illustrated by red and green apples in the sample text in Table 1[1]. In lessons such as these, I was learning the German letter-sound correspondences, the ways in which German adjectives function, and a variety of other dimensions of orthography, morphology and syntax. I soon abandoned the German children's books to concentrate on Rosetta Stone, and I applied my skills in conversations with my mother about simple topics, although there is only so far one can go in talking about apples, leaves, or balloons.

I had not planned for my German-learning experience to be a case study of the research that I have conducted over the past 15 years. After all, I am an adult language learner who has substantial metalinguistic awareness of three elements that most young children do not have: (a) the oral language of instructional text, (b) learning pedagogy, and (c) language systems. But there were elements of the experience that did resonate with my research. For novices (even adult ones) to become automatic in reading (or speaking) a language requires that there be at least a modicum of repetition of the critical and consistent patterns of language. The children's books, while interesting and containing instances of critical and consistent language patterns,

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[1] Because of copyright restrictions, the text in column 2 of Table 1 illustrates, rather than duplicates, a Rosetta Stone beginning lesson.

also contained many multisyllabic words with new, challenging patterns. Even with my expert

knowledge of language and prior experience with German, I failed to become automatic with any

but the most frequent words when confronted with the large amount of new and complex

information in the children's books. Rosetta Stone, however, provided critical and consistent

data without substantial amounts of diverting information.

The theme of this chapter is straightforward but is often overlooked in beginning reading

instruction: Beginning reading texts need to give young children many opportunities to apply

their emerging knowledge of written words. Opportunities to focus on increasing reading speed

occur in subsequent levels, but this later proficiency is built on the early foundation. If children's

early experiences have not built that foundation, fluent reading is difficult to develop (Torgesen,

Alexander, Wagner, Rashotte, Voeller, Conway, & Rose, 2001).

The theme is sufficiently important to bear elaboration. Specifically, the kinds of

experiences that support fluency in beginning readers differ from those that other authors in this

volume describe for students who are not novices, even if they are struggling readers. Chall

(1983) described a stage of reading development—Stage 0—that precedes formal reading

instruction. It is in this stage that children learn about texts, letters, words, sounds, and the act of

reading through read-alouds, scribbling on paper, moving preformed letters to form words, and a

host of other activities that should occur in preschools and kindergarten. For students who have

not had such Stage-0 experiences but are placed in kindergartens and first grades that have

Stage-1 expectations (learning to break the code quickly), texts that provide consistent

information about critical word features in manageable chunks are fundamental.

Over a 15-year period, my colleagues and I (e.g., Hiebert, 1999; Hiebert & Fisher, 2006a;

Hiebert, Martin, & Menon, 2005) have worked to refine a curriculum for creating texts that

support a foundation of automaticity, meaningfulness, and engagement. In this chapter, I call this curriculum by the name of the digital system it uses to analyze texts: TABB (Text Analysis: Beginning Books). The chapter describes the curriculum and summarizes evidence that exposure to TABB-based texts supports a fluent start for beginning readers. It concludes with text-selection guidelines for educators.

I stress that this work is aimed at supporting the reading development of children who depend on schools to become literate. For children from low-income homes and immigrant backgrounds where languages other than English are spoken in home and community, the quality of school reading experiences will determine whether they learn to read well. These are the students for whom the match between proficiency and texts matter most.

TABB: A Road Map for Supporting Automaticity in Beginning Readers

A good curriculum can be thought of as a road map—a way to show us how to get from where we are now to where we want to be. For teachers, *where* they want their students to be is reading proficiently. But setting the goal of "wanting my students to be good readers" is not enough to make it happen. Although this goal is laudable, helping a classroom of 25 young children whose literacy learning occurs primarily in school attain it requires a substantial amount of teacher knowledge and effort. Without a strong curriculum to provide that knowledge and guidance, teachers will have a hard time assisting students in becoming good readers.

At the same time, a road map that has been generated for every teacher to follow with every single child in the United States presents problems. The use of the same reading program teachers' guide across thousands of classrooms assumes that all children are starting from the same location and will move at the same pace. If the assumption that one map works for all were accurate, then chapters such as this one would not be necessary. Indeed, if the same lesson plan

presented at the same pace works for all, it should be possible to have a digitally generated voice (much like a GPS) to guide children through the reading process and get them all to the desired destination—proficient reading. Even with more than a decade of federal, state and district mandates stipulating that teachers use scripted lessons and follow the same instructional pacing (e.g., Esquith, 2004; Gunn, 2004), an appreciable difference has not been evident in the end-of-grade-three reading achievement of American students (Gamse, Jacob, Horst, Boulay, & Unlu, 2008).

The Common Core State Standards (Common Core State Standards Initiative, 2010) illustrate a perspective between the extremes of "get my kids to love reading" and a scripted set of lessons. The standards do not provide guidelines for beginning reading because they are aimed at the reading proficiencies necessary for college and careers (and so assume a foundation of reading proficiency). They, however, do set benchmark goals for particular points along the way and *always* maintain the vision of the overall goal—proficient reading of literary and informational text. This presentation of benchmarks that foster an end-goal also is the direction represented in TABB—a curriculum with enough specificity that students are supported in expanding their capacity but not with so much specificity that teachers must march students lock step through a set of lessons.

The TABB curriculum focuses specifically on word recognition. Of course, other dimensions such as syntax and genre are central to the design of efficacious texts that support reading success (Mesmer, Cunningham, & Hiebert, 2010). But, without the ability to recognize written vocabulary, beginning readers will find the message of texts (at least those messages that do not depend on illustrations for interpretation) inaccessible.

The focus of the TABB curriculum

To obtain an index of the number of words in a text that are predicted to be critical for readers with particular levels of knowledge, the TABB approach focuses on two areas: (a) the features of individual words and (b) the distribution of words within a text or a set of texts.

Features of individual words. To beginning readers, as for adults, a word is a multifaceted entity (Nagy & Scott, 2000). The essence of a word is its meaning. For young children, the initial interest lies in recognizing their own names, the name of a pet or best friend, or words such as *Mommy, Daddy,* and *love* (Hiebert, 1983). The recognition of such highly personal words, often by the idiosyncratic shapes of their graphic representation, may support initiation into literacy, but it is not sufficient for independent word recognition (Ehri, 1991). Four features contribute to the ease or difficulty with which a word is recognized and remembered: (1) frequency in written language, (2) morphology, (3) vowel and syllabic structure, and (4) concreteness.

Frequency in written language. The frequency with which a word occurs is not an inherent quality of the word. Rather, it reflects the word's function in written language. The most frequent word in written English—*the*—is predicted to occur 68,000 times in every one million words of text. (Zeno, Ivens, Millard, & Duvvuri, 1995). Words that are among the first spoken by young children—*cookie* and *juice*—occur with considerably less frequency in written text: 4 and 19 times per million words, respectively. This contrast illustrates that frequency cannot be used as a proxy for word familiarity in learning to read. Even so, most of the words that occur with high frequency in written language—the ubiquitous high-function words such as *the, of, a, and, was*—are also a frequent part of oral language.

Morphology. A second feature of words that contributes to their ease of recognition pertains to their morphological or meaning units. The word *into*, for example, is made up of two

base meaning units—*in* and *to*. Another highly frequent word—*others*—is made up of a base

meaning unit—*other*—and *s*, which is called a bound morpheme because it never appears on its

own. Such morphological changes in words are often given short shrift in beginning reading

programs, even though words that share a root word but have an inflection (i.e., *ed, ing, s/es, 's,

s'*) or a derivation (e.g., prefix or suffix) are frequent in written English. Nagy and Anderson

(1984) estimate that approximately 40% of the words in written English are derivative or

inflected forms of other words.

In oral language, the inflected forms that typically appear in beginning reading programs

(i.e., *ride, rides, riding*) are known by native English language learners when they start school.

Typically, these children also know some derivational suffixes such as *-er* (e.g., *runner, teacher*)

(Anglin, 1993; Tyler & Nagy, 1989). The manner in which children are able to draw on this

knowledge as they encounter new words in texts is less certain. Even more uncertain is the task

posed by inflections and derivations for children who speak unique dialects of English or who

speak native languages that have different morphological forms and rules than English. It is

typically assumed that children transfer their morphological knowledge in speech to the

recognition of simple written endings (i.e., inflected forms, simple derivational suffixes such as *-

er* and *-ly/-y*). Instruction on endings does not typically appear in the scope and sequence of core

reading programs until second grade, even though numerous words with inflected endings and

simple derivational suffixes appear (without instructional focus) in the first-grade texts.

Vowel and syllabic structure. The third category of words that contributes to their ease of

recognition is their common, consistent vowel patterns. English words, even those that include

irregular letter-sound correspondences, are alphabetic. To develop automaticity in reading

requires generalization and application of knowledge about the relationships between written

letters and their oral-language sounds. Scholars may argue the interpretations of research findings as to the weight that should be placed on teaching letter-sound correspondences at different times in the learning to read process, but there can be no doubt that learning how letters represent the sounds of the oral language that they know is what distinguishes readers from non-readers (Adams, 1990; National Institute of Child Health and Human Development, 2000).

Imagery value. The fourth feature contributing to word recognition is the word's imageability, or the ease with which it arouses a mental image (Paivio, Yuille, & Madigan, 1968). Most, but not all, words that have a high imagery value are concrete nouns. Some verbs, however, create strong images (e.g., *running*), and some nouns that are highly concrete may not be known to young children (e.g., *carburetor)*. Consequently, the term *imagery value* is used to describe the degree to which a word is memorable because of its meaning.

Within the currently most prominent text-leveling system (Fountas & Pinnell, 1999), the texts viewed to be most appropriate for beginning readers are those with a strong picture-text match. That is, children can figure out at least some of the words on a page by looking at the accompanying illustrations. Relying on illustrations, however, can diminish beginning readers' attention to critical features of words (Samuels, 1970). Highly imageable words that appear consistently in a program, on the other hand, can support reading acquisition. Even among words chosen for a decoding curriculum, the imagery value of words influences word recognition. Primary-level students (Kolker & Terwilliger (1981) and even kindergartners (Hargis & Gickling, 1978) learn high-imagery words more efficaciously than low-imagery words. When the decodability of words has been manipulated along with imagery value, high-imagery, decodable words are learned more quickly than other groups of words, including high-imagery, less decodable words (Laing & Hulme, 1999).

Features of a reading program. No matter how many times a parent or kindergarten teacher rereads a favorite text to children, a single text does not comprise an instructional program. Children learn to read well as a result of exposure to many texts. A precise number for the volume of the needed texts will never be possible. However, especially in classrooms where the majority of beginning readers do not have a long history with books, texts need to be plentiful and, for particular parts of a school day, provide the scaffolding needed for children to work with critical information about reading.

When classes contain many children who depend on appropriate school experiences—and when time is of the essence—there are two primary characteristics that go into the design of a program of texts: (a) sequence of critical information and (b) amount of new information in a single unit (i.e., a text). We describe these elements as influencing the "cognitive load"—the amount of information that young children can process at any given time.

In teaching novices, whether the domain is piano or quantum physics, optimal learning requires that information be presented in a logical sequence. Numerous theories, schemes, recommendations, and even governmental policies exist about how best to initiate children into reading written English. But amidst all of this theory and rhetoric, a surprisingly small amount of research has validated specific sequences in introducing critical features of written words to children. Empirical validation exists only for the phonics sequence, and even this work is limited in scope (Guthrie & Seifert, 1977; Pirani-McGurl, 2009).

It was only after extensive reviews of research were conducted that choices were made about the sequence of words within the TABB curriculum. The content of the TABB curriculum that resulted from this review and decision-making making process is illustrated in Table 2.

The content of the curriculum has been parsed into nine levels. For three of the dimensions-- frequency, decodability, and morphology—each new level adds additional information (as can be seen with the illustrative levels in Table 2). For the fourth variable of imagery value, all 1,000 high-imagery words that have been identified through analyses of concept books (e.g., DK Publishing, 2008; Scarry, 1985) and corpora of children's oral and written language reception and production (Johnson, Moe, & Baumann, 1983) are viewed as equally appropriate for inclusion in children's texts at the first level. It is at the first level where high-imagery words would be expected to be most prominent, and these words would be expected to steadily consume less and less of the percentage of texts in higher levels.

Using TABB to establish the difficulty of texts

The information on the features of words and the number of different words within a book is matched to the levels of the curriculum to get a measure we call the *Critical Word Factor* (CWF) (Hiebert & Fisher, 2007). The CWF tells a teacher how many words in a particular text fall outside a specific level of the curriculum. That is, the critical words are the words that do not fit any of the four criteria—frequency, decodability, morphology, and concreteness—at whichever of the nine levels of the curriculum is the focus (see example levels in Table 2). Students may be able to use decoding or context skills to get a word's meaning but the word contains new information that may require students to attend to the word and not recognize it automatically.

A text does not have a single CWF. A single text can be matched against numerous levels of the curriculum (or even different curriculum for that matter), and for each level, result can be a different CWF. To illustrate how the CWF is computed, the words in sets of four types of texts have been analyzed according to levels 3, 5, and 7 of the TABB curriculum. These four text

types represent reading programs that are currently in use in beginning reading instruction in

American classrooms and that have been used in the studies described in the next section of this

chapter. The words for each text type came from six books that appear sequentially within the

same point in the program.

When analyzed according to the criteria of Level 3 of the TABB curriculum, the four sets

of texts have CWFs that range from 6 (NEARStar; Pacific Resources for Education & Learning,

2003) to 20 (anthology; Cooper et al., 2002). What does this mean for young readers? If students

are not yet automatic with the 75 most-frequent words and with consonant clusters at the

beginning and/or end of words, 6 of every 100 words of text will require them to figure out

words that additional features in the NEARStar texts. In the anthology, they will need to be

confronted with new information in 20 of every 100 words of text.

If students have knowledge that aligns with Level 5 of the curriculum, however, one

word for every 100 within the NEARStar texts is predicted to be critical or hard. In the

anthology, 13 of every 100 words will have information that Level 5 readers are unlikely to

know. For students with facility with the 500 most-frequent words and knowledge of consonant-

controlled vowels (Level 7 skills), none of the words in the set of NEARStar texts is predicted to

be critical or hard. Within the anthology, however, there will continue to be a fairly critical

number of words that could challenge even Level 7 readers-- 9 for every 100 words.

In examining the information in Table 3, remember that all of the texts were presented by

their publishers as appropriate for approximately the same point in reading development: the end

of the first trimester of first grade. The differences across the four sets of texts at this first level,

however, are substantial. In the next section, we explore how these different profiles influence

students' reading acquisition.

Examinations of TABB-based Texts

Three experiments have been conducted with texts based on the TABB curriculum. In the first one, existing reading-program texts were reorganized to comply, as best as possible, with the parameters of the curriculum. The second and third experiments used a set of texts that had been written according to the sequence of the curriculum. The first study has an "implicit match" to the TABB curriculum, while the second and third studies exemplify texts with explicit matches to the curriculum.

Implicit Match

The first study (Menon & Hiebert, 2005) was a classroom-based investigation of students' reading performances as a function of reading texts from anthologies in the district's core reading program or a set of "little books" that had been organized to represent key elements of the TABB curriculum. With two first-grade classes, teachers used anthology texts in their typical patterns. In the other two first-grade classes, teachers were asked to substitute the TABB-based texts for those in the anthologies. The only change that teachers were requested to make had to do with the books that they used for their lessons and students' reading, whether that reading was in the whole class, small groups, or independent.

The instruction that extended over a 16-week period began at the point where many students were ready for the content of TABB Curriculum 3 (see Table 2). The features of the two types of texts used in the study—the core reading anthology and the little books—are summarized in Table 3. A primary difference between the two sets of texts was that the anthology had substantially more hard words per 100 than did the little books. Even though the little books had been reordered according to the TABB criteria, it was not possible to obtain a level of repetition of individual words to achieve the approximately 3-4 critical words per 100

that has been identified within the framework as likely appropriate for efficacious beginning reading development.

Even though it was not possible to create optimal word-density ratios with the existing leveled texts according to the TABB curriculum, 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 anthology curriculum: 20% as compared to 30 to 35%. Although 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 did the anthology texts read during a comparable period.

Students' performances on the Qualitative Reading Inventory (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. Students in the TABB condition had higher means on both the word list and passage measures than did 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 anthology selections improved by 1.8 text levels during the same period. 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.

The results of this study suggest that even a moderate amount of scaffolding of texts can make a difference in the word-recognition 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 anthology group by the end of grade one. 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.

Explicit Match

Except for the length of the intervention, the design of the two studies that Hiebert and Fisher (2006a, 2006b) considered the *explicit match* of the curriculum was similar—type of students, research design, instructional procedures, and texts. Instruction in Study 1 (Hiebert & Fisher, 2006a) lasted for 12 hours over an eight-week period and Study 2 (Hiebert & Fisher, 2006b) lasted for 20 hours over 12 weeks.

In both studies, students were English language learners during the final trimester of first grade. They attended schools in which the majority of students were native Spanish speakers (94-97%). The students were administered a timed word-recognition task that included both phonetically regular and high-frequency words. Based on the results of this assessment, students from a particular class who had adequate but not proficient levels of fluency (defined as less than 50 correct words per minute) were randomly assigned to one of three groups: (a) the TABB-based texts, (b) decodable texts on the state's list of approved books (but not adopted by the district), and (c) a control group that used the decodable texts in the district's core reading program. At least 9 students from a class were needed to ensure that three students could be randomly assigned to each of the three groups.

Students met in small groups with a project teacher for half-hour sessions. Project teachers were provided with lesson plans, developed by the investigators, for each text. Time

allocations were provided for each of four activities: (a) word-card activities that used two words with particular letter-sound correspondences from a text (6 minutes); (b) three readings of a new book—teacher led read-aloud with a retelling by students of the story, paired reading, and choral reading (10 minutes); (c) writing words on individual chalkboards (5 minutes); and (d) reading an additional book or rereading of books from previous lessons (9 minutes).

The content and focus of the lesson was the same (i.e., the students in the comparison group received information about the same phonics elements and high-frequency words). During that time, one group read from texts that were written to comply with the TABB curriculum (Pacific Resources for Education & Learning, 2003), texts that are illustrated in the first row of Table 3. The other group read from the decodable books of the Open Court Reading program (Adams et al., 2000). The total number of words per text was kept equivalent by selecting particular decodable texts and particular TABB-based texts within each respective program. The texts for the decodable group were also sorted to emphasize the features of the curriculum as best as possible. However, the decodables had not been written to include elements of high-frequency and high-imagery words. As can be seen in Table 3, there were differences between the TABB-based texts and the decodable texts. The decodable text had significantly more words that fell outside of the level-appropriate curriculum. As is evident in Table 3, the decodable curriculum moves very quickly to emphasize inflected endings. In the case of the inflected ending *-ing*, this addition means that some words are increased in size substantially when the final consonant is doubled (e.g., *run/running*). The TABB-based texts did not make similar demands at this point in the sequence. Further, the decodable texts had many more unique words than did the TABB-based texts—almost 100 in the same number of total words.

Eight assessments of two types were given to individual students before and after the intervention: four assessed students' reading of words in text and four assessed their knowledge of words without textual context. The text-reading measures yielded information on rate of reading, accuracy, and comprehension: (a) first-grade passages of the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2002) and (b) the fortieth texts of each of the two programs that were used in the intervention. Word-level assessments consisted of two measures from the Test of Word Reading Efficiency (TOWRE; Torgesen, Wagner, & Rashotte, 1999) as well as the two experimenter-developed measures of phonetically regular and high-frequency words that were used for identifying the sample.

Results of both studies are summarized in Table 4 as effect sizes. Remember that the differences between the two groups were fairly subtle. That is, the curriculum sequence was kept the same and the activities in which students were involved were the same. But the primary difference lay in the repetition of words that represented particular patterns in the TABB-based curriculum. An examination of Table 4 effect sizes reveals three key findings:

1. The longer the intervention, the greater the difference between the TABB and the decodable group.

2. Both of the intervention groups that received texts with the well-paced, sequential curriculum did substantially better than the classroom group. A question that should be raised is the degree to which these differences were due to the whole-class format, rather than the curriculum. The answer is that with nine children in the intervention, the number of students in particular classes, which had class sizes of about 17 to 19, is actually quite small. Therefore all of this difference cannot be attributed to class size.

3. Students did much better in the TABB-based group on their own text. In other words, a

sequence was supporting students, which was not the case with the decodable-text group. In fact, the TABB-group students also did just a little bit better than the students in the decodable group on the assessment text from the decodable program. So we can conclude that the TABB-designed text was supporting progression along a curriculum, and that it was moving at a pace that allowed beginning readers to become more automatic in their reading.

What Teachers Can Do

The theme of this chapter has been that beginning readers become fluent by reading many texts in which they recognize most of the words. Put another way, texts that match students' word knowledge allow them to develop a habit of fluent, meaningful reading from the start. Texts that require beginning readers to stop and figure out large numbers of words hinder such a habit.

I have used the TABB curriculum to illustrate how texts can be identified to support automaticity in beginning readers. This curriculum should, by no means, be regarded as a be-all and end-all of beginning reading curricula. In fact, at this time, the TABB software is in the experimental phase and available for research use only. The underlying principles of the text selection process, however, are applicable to any venue for teaching beginning readers. Specifically, teachers need a road map that lets them know what the goals are at particular points along the way in beginning reading acquisition and where students are in this progression. Once they have this information, they need to identify the books that are a good match for particular students and how quickly to move students through a set of books.

Knowing what students need to know

Teaching children to read requires that teachers understand the linguistic knowledge base of written English. At various points in the past century, scholars have focused attention on

various parts of this base—high-frequency words, high-interest words and predictable syntactic structure, and, currently, letter-sound correspondences. The stance of this chapter has been that the words that make up written English are multifaceted and that the benchmarks and goals within a beginning reading curriculum need to address several quite different features of words simultaneously. But even in contexts that emphasize a single criterion, such as letter-sound correspondences, teachers need to be vigilant in keeping in mind what students need to learn and the kinds of texts that support and move them forward in that acquiring that knowledge.

Knowing what students know

To understand where students are in the progression of reading acquisition, teachers need valid assessments that match the curriculum and give the kind of information they can use to select appropriate texts. Often, there is a mismatch between the assessment and the texts. Take, for example, a common situation: In many schools and districts during the Reading First era, decodable texts were used for reading instruction, and the Dynamic Indicators of Basic Early Literacy Skills (DIBELS; Good & Kaminski, 2002) was used for assessment. The reputation of DIBELS as a phonics-first measure reflects the nonsense-word subtest and the domination of one-minute reading in the assessment of text fluency. The means of validating the sequencing of texts for the one-minute assessment, however, was the Spache (1953) readability formula that establishes difficulty on the basis of sentence length and a list of primarily high-frequency words (Good & Kaminski, 2002). A readability formula that evaluates the length of sentences and the presence of high-frequency words (Spache, 1953) was the basis for validating the DIBELS test passages (Good & Kaminski, 2000), but the DIBELS assesses students' reading according to quite a different model. The assessment data, then, is not highly useful in aiding teachers in selecting appropriate texts within a decodable program.

If teachers find themselves in situations in which there is a mismatch between instructional texts and assessments, they may wish to draw on a technique used in the explicit match studies of the TABB curriculum. In these studies, Hiebert and Fisher (2006a, 2006b) picked texts from strategic points in the program, made certain that the texts were not used for instruction, and used them to assess students' progress. Such a procedure also ensures that teachers have sufficient numbers of texts to use for assessment. Young children's development as readers can be in jumps and starts, and assessments that occur only at the beginning, middle, and end of the year may not capture growth sufficiently. The use of texts from the instructional program that represent strategic benchmarks give teachers an accurate and current view of children's movement along the beginning reading progression.

Matching students with texts

Language and learners are both idiosyncratic. No amount of engineering (even with digital, hand-held, on-the-spot assessments) will ever produce an exact match between readers and texts. However, texts should have at least some words that have features with which children are facile and other words that have features that students are learning. A rule of thumb in reading education for almost a century has been that successful reading requires that approximately 95% of the words in a text need to be known to readers in instructional contexts and 98-99% in independent ones (Betts, 1946). At the beginning levels, finding texts where students know all but a handful of words can be challenging. At the very least, students should know at least a core group of words in a text, and teachers should be able to support students in focusing on the features of the unknown words. Remember that in the implicit-match TABB study, the differences between the little books and the selections in the core reading anthology were of degree, not of kind. Even in the little books where students did substantially better than

in the core reading anthologies, the percentage of phonetically regular words did not achieve the critical mass that policymakers mandate in the textbook adoptions of California (California State Board of Education, 2006) and Texas (Texas Education Agency, 2000). The majority of the words in the texts, however, did have patterns that students either knew or were learning.

One feature that did make a difference in the little-book treatment was the amount of time that teachers spent on particular levels of texts. The intervention had been set up so that teachers had numerous texts with the linguistic content of a particular level. From among the available texts, teachers made choices about the number of texts given to different groups of students with similar needs. Teachers were making the decisions about the pace at which new content was provided. These decisions were based on teachers' decision-making, not the decisions made by a group of reading-program editors or authors at a different point in time and at a geographic location far from these classrooms and reflected in a teacher's guide as to what generic children *should* be able to do at particular points in time. The curriculum (i.e., an emphasis on high-frequency words, picture-text match, or decodable words) may be determined by the texts that a district or school has purchased. How long individual children spend with texts at particular levels, however, is within a teacher's purview. The presentation of lessons and pacing guides within published programs may appear "official," especially when the programs are offered as research-based.

In some school districts (Esquith, 2004), policies have been implemented to mandate that teachers move all students through texts at the same pace. But even in the same class, students move at remarkably different paces in grasping particular patterns within words. When teachers have relevant and accurate information about what students know, they can make informed choices about how many texts students require at particular levels. One group of first graders

may need to read dozens and dozens of texts at one benchmark level, while another group of students may only need a handful of books at that same benchmark level and be ready to move to the next level.

Over the last decade, a prominent perspective has been that the pre-determined pace identified within the teacher's guide of a core reading program should be followed for all (e.g., Gunn, 2004). However, if some students can only read a handful of the words in a text, repeated reading of the text and movement to the next text will do very little good. Evidence that many first graders are simply moved through texts without learning the critical information can be seen in the explicit match studies (Hiebert & Fisher, 2006a, 2006b). Prior to the interventions (as well as during the intervention for the students in the control groups), all students proceeded through a designated set of texts at the mandated rate in kindergarten and the first half or more of first-grade. Most students had little, if any, fluency with a core group of words. Their teachers had presented the lessons. The children had gone through the books, but the pace at which new information was presented was so discrepant from children's foundational knowledge that little had been gained from the experience.

Instructional choices on the part of teachers regarding pace do not mean that a lower bar is set for the students who are currently reading texts that are "easier" than the "one size fits all" track. The destination—proficient reading by third grade—is the same for all. Some students may be starting out at a different point than others. But the vast majority of students will attain the destination, provided that they are given appropriate information in appropriate increments over time.

A second decision that goes hand-in-hand with pace is the amount of repetition with critical content that students have. Automaticity with content comes from repeated exposure to it.

The aim of the interventions described in this chapter was not to get beginning readers to "read faster" but rather to read more. Observations of classrooms indicate that the amount that students read in classrooms is critically related to their reading achievements. From the best available information, the amount that low performing first graders typically read per hour during classroom reading instruction is approximately 54 words (Allington, 1984). In both groups in the explicit-match studies, students read approximately 270 words per half hour, or 540 words per hour. The interventions increased ten-fold the amount of students were reading as part of instruction. Keeping an estimate of the number of words that students are reading can be an important activity for teachers. Once a baseline has been established, teachers can focus on how to increase the amount of time that students are reading.

To get young children solidly on the road to successful and engaged reading, children require immersion in instruction where the texts make it possible for them to become automatic with the most critical features of written language. Matching appropriate texts with readers requires an understanding as to the critical features and children's existing automaticity with these features. When teachers select appropriate texts and give students sufficient exposure to and repetition of critical features, students will develop the fluency in recognizing words that serves as a foundation for successful reading.

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Table 1.

Examples of Texts for Beginning Reading in German

Coco fährt Rad	Modeled after Rosetta Stone
Das ist Coco. Er wohnte bei seinem Freund, dem Mann mit dem gelben Hut. Er war ein lieber kleiner Afe, und er war immer neugierig. An diesem Morgen war Coco schon neugierig, als er aufwachte, denn er wusste, dass heute ein besonderer Tag war.	rot einen rotten Apfel grün einen grünen Apfel rote und grüne Äpfel

Table 2.

Progression of the TABB curriculum: Tasks from emergent to independent reading

Level	Frequency	Decodability	Morphology	Imagery Value
1	•25 most-frequent	•VC •CV •CVC (a)	[no new content]	•High percent of highly imagable words from familiar categories (e.g., home, animals)
3	•75 most-frequent	•CVCC(C) & CCVC	plural *es**	[no new content]
5	•300 most-frequent	•consonant-controlled vowels in high-frequency groups (e.g., *call, old, bright*)	ed	•Moderate percent of highly imagable words from familiar categories
7	•500 most-frequent	•ow as long o; r-controlled (*air, ear*)	[no new content]	[no new content]
9	•930 most-frequent	•2-syllable words with consistent vowels in first syllable (e.g., *table, happy*)	Compound words where the head word is among the most frequent 750 words (e.g., *uphill, upset; outside/outdoor)*	•Imagable words come from moderately familiar categories (e.g., animal homes) & account for smaller percent of total words

*plural with *s* and possessive (*'s)* have been added in Level 2

Table 3. Comparison of the CWFs for 3 Programs at Mid-First-Grade Level

Study	Program	Sample Text	Curriculum		
			3	5	7
Hiebert & Fisher (2006a, 2006b)	NEARStar (Pacific Resources for Educaiton & Learning, 2003)	Dan sees the man. He stops. The dog sees the man too. It stops. The school van stops, too. Can Dan and the dog go to school now?	.06	.01	0
	Decodable (Adams et al. 2000)	Can I help? Ham, Sam Clam? Called Fred. Not ham, clicked Sam Clam. Grab a top hat, Bill Bat, said Fred. No top hats, snapped Bill Bat.	.11	.07	.06
Menon & Hiebert (2005)	Leveled Readers selected according to TABB curriculum (Juel, Hiebert, & Englebretson, 1997)	Lost! said the dog. Oh, no! said the frog. Help! said the hog. The dog, the frog, and the hog sat on a log.	.09	.03	.01
	Lionni (1987) from Anthology Core Reading Program (Cooper et al., 2002)	Parrots are green. Goldfish are red. Elephants are gray. Pigs are pink. All animals have a color of their own except for chameleons. They change color wherever they go.	.20	.13	.09

Table 4.

Effect Sizes for Two Interventions of TABB-based and Decodable Texts

		TPRI 1st text	TPRI 3rd text	TExT 40th text	Decodable 40th text	HF	Sight	Phon Reg.	Phon Decod
Study 1									
	TABB-Decodable	.05	-.05	.76	.06	-.1	.04	-.04	-.26
	TABB-Control	.39	-.02	.64	.64	.13	.27	.29	.28
	Decodable-Control	.36	.01	.25	.60	.19	.25	.33	.43
Study 2									
	TABB-Decodable	.08	.25	.43	.01	.29	.05	.22	.05
	TABB-Control	.42	.22	.72	.05	.43	.21	.26	.33
	Decodable-Control	.32	-.01	.26	.04	.15	.16	.03	.27

.5+: dark gray
.33-.49: medium gray
.20-.32: light gray