(2009). In M.H. Long & C.J. Doughty (Eds.), The handbook of language teaching (pp. 441-462). West Sussex, UK: Wiley-Blackwell.

24 Teaching and Testing Reading

WILLIAM GRABE

The teaching and testing of reading has a history of research effort that goes back for decades. While L2 reading research has a more limited history (as opposed to the L1 research base), there is also a very large database to draw on. This chapter will outline briefly major themes from research that, in combination, form the construct of reading abilities (for both L1 and L2 reading). Determining the construct then provides rationales for various instructional and assessment practices. The focus of this chapter will not be an extensive review of the reading construct. That has been developed in more detail in other sources (e.g., Bowey, 2005; Koda, 2005, 2007; Perfetti, Landi, & Oakhill, 2005). Instead, the goal is to draw connections from the reading construct to effective ways to teach reading and test reading. The chapter will then briefly outline guidelines that should be effective for teaching L2 reading abilities across a range of curricular settings. It will also outline testing tasks that can be effective means for assessing L2 reading abilities.

Research Foundations

Fluent reading comprehension requires a number of processing subskills and linguistic knowledge bases. These processes and knowledge resources allow the reader to comprehend texts to the level required. The identification of these skills and resources has been the outcome of many research studies, and it remains the source of much ongoing research. In this section, research is reviewed that supports the relationship between reading skills and reading comprehension. Much of the research has been conducted in English L1 reading contexts, though increasing amounts of L1 reading research in other languages have also emerged in the past 15 years (Cook & Bassetti, 2005b; Frost, 2005; Joshi & Aaron, 2006; Koda, 2005).

Letter–sound correspondences

Research in beginning reading has shown that beginning readers need to establish strong linkages between orthographic forms and the sounds of the language

(Bowey, 2005; Ehri et al., 2001; Perfetti et al., 2005; Tunmer & Chapman, 2006). Extensive research on L1 contexts across languages has demonstrated that training in phonological awareness and letter–sound correspondences predicts later reading development among children and beginning readers (Ehri, 2006; Ehri et al., 2001; Wagner, Piasta, & Torgesen, 2006). While L1 reading in other languages may not require that same intensity of instructional effort as does English for phonological awareness, all young learners benefit significantly from explicit instruction in letter–sound correspondences (Lundberg, 1999). The automatization of letter–sound relations is the foundation of all alphabetic reading and supports syllabic reading systems, as well. Even Chinese, as a morpho-syllabic system, incorporates some information from the phonetic radical within characters as an aid to word recognition and uses phonological information at the point of lexical access (Chow, McBride-Chang, & Burgess, 2005; He, Wang, & Anderson, 2005; Perfetti & Liu, 2005).

L2 research on letter–sound correspondences has indicated that it is important to establish such correspondences early in L2 reading. For example, Nicholson and Ng (2006) have shown that teaching phonemic awareness and letter–sound correspondences improves ESL preschool children's (ages 3:6 to 4:5) phonological awareness, word reading, short text reading, and pseudoword reading significantly above a comparison group of ESL children being read to. Geva and Yaghoub-Zadeh (2006) demonstrated that there is a strong relationship between phonological awareness and text reading efficiency (accuracy and fluency) with second grade ESL students (see also Gottardo et al., 2001). If letter–sound correspondences are established in the L1, these particular abilities seem to transfer reasonably easily (Durgunoglu, Nagy, & Hancin-Bhatt, 1993; Lesaux, Lipka, & Seigal, 2006; Gottardo et al., 2001).

Word recognition efficiency

English L1 research on eye-movement tracking has shown that good readers recognize words on average in about 200–250 milliseconds, they move their eyes ahead approximately eight letter spaces per focus, they make regressive eye-movements about 12 percent of the time (often for slight adjustments), and they actively focus on more than 80 percent of the content words and about 35 percent of function words. In short, reading is a process of very rapid word recognition carried out through fairly consistent eye behaviors. Automaticity is a key to this rapid word recognition process. The observable eye-movement processes of fluent readers are quite similar in all languages, with variation due to differing amounts of linguistic information provided by individual graphic forms (see Rayner, Juhasz, & Pollatsek, 2005). Word reading efficiency is going to vary somewhat among different orthographic systems (Frost et al., 2005; McBride-Chang et al., 2005). L2 word reading efficiency, in some situations, can be a strong predictor of L2 reading comprehension abilities (Kahn-Horwitz, Shimron, & Sparks, 2005); in other settings, it will not be predictive for multiple complex reasons.

Vocabulary knowledge

Research on English L1 vocabulary knowledge has demonstrated that fluent readers have very large recognition-vocabulary knowledge resources and that vocabulary knowledge is highly correlated with reading ability (see Bowey, 2005; Stahl & Nagy, 2006; Tannenbaum, Torgesen, & Wagner, 2006). While estimates of word knowledge vary greatly (from 19,000 to 200,000 words; Anglin, 1993; Nation, 2001), the most widely accepted figure is that high school graduates know on average 40,000 words as fluent L1 readers (Nagy & Anderson, 1984; Stahl & Nagy, 2006). This is a very large number of words to learn and most accounts suggest that many of these words are learned by exposure to new words through continual reading practice. Stanovich (2000) has argued that extended exposure to print over years leads to major differences not only in vocabulary knowledge but also in increasing comprehension and a range of measures of conceptual knowledge.

Research on L2 vocabulary knowledge has also shown that vocabulary is correlated with L2 reading comprehension. Droop and Verhoeven (2003) reported a strong relationship between third and fourth grade L2 students' vocabulary knowledge and their reading abilities. Schoonen, Hulstijn, and Bossers (1998) also reported very strong relationships between vocabulary and reading, reporting an r^2 of 0.71 for eighth grade EFL students in Holland. This relationship has also been clearly demonstrated in research involving L2 reading assessment studies (Pike, 1979; Qian, 2002).

Early experimental studies on vocabulary instruction have demonstrated that vocabulary learning can lead to reading comprehension improvement (Beck, Perfetti, & McKeown, 1982; McKeown et al., 1985), though the impact of vocabulary on comprehension improvement is complex and requires intensive instructional effort (Nagy, 2005). In the past 20 years, there have been relatively few studies of efforts to teach vocabulary explicitly and then compare the experimental group to a control group for reading comprehension gains. However, Carlo et al. (2004) have demonstrated that intense explicit vocabulary instruction with L2 English fourth graders leads to significant improvement over control groups, not only in greater vocabulary knowledge but also on a measure of reading comprehension abilities.

Morphology, syntax, and discourse knowledge

Research on L1 morphological, syntactic, and discourse knowledge shows that they all have an impact on reading comprehension. A number of studies have shown that morphological knowledge contributes to reading comprehension: research by Anglin (1993), Carlisle (2003), and Nagy et al. (2003) all argue that morphological knowledge (knowledge of word parts) is very important to more advanced word recognition and reading development (see Stahl & Nagy, 2006). The contribution of syntax to reading is less well examined in L1 reading contexts because L1 students develop implicit knowledge of most grammatical structures.

(For this reason, L1 students are not commonly assessed for their grammar knowledge.) However, there is evidence that grammatical knowledge (syntactic parsing) plays a role in L1 reading comprehension (and it is intuitively obvious on reflection) (Bowey, 2005; Lesaux, Lipka, & Siegal, 2006; Perfetti et al., 2005). There is extensive evidence that discourse knowledge contributes in important ways to reading comprehension. Syntheses by Duke and Pearson (2002) and Trabasso and Bouchard (2002) point to the importance of discourse signaling mechanisms, organization patterns in texts, logical relations across clauses and sentences, and text structures that can be recognized and learned (see also Hudson, 2007; Koda, 2005).

Research on L2 syntax and discourse knowledge have both shown that there are strong relationships between these language knowledge bases and reading comprehension. This relationship also appears in reading assessment research. Research studies with Dutch students have shown that syntax is a powerful predictor of reading comprehension abilities. Schoonen et al. (1998) showed that syntax was a very strong predictor of reading ability in a multiple regression study. More recently, Van Gelderen et al. (2004) reported a very strong relationship between syntactic knowledge and reading comprehension. In reading assessment research, both Alderson (2000) and ETS researchers (Enright et al., 2002) have presented very high correlations showing that syntactic knowledge is strongly related to reading comprehension. In research on the role of discourse knowledge, Carrell (1984, 1985) has shown that discourse structure knowledge is strongly related to reading comprehension. Similarly, Horiba (1993) reported that Japanese L2 students at different proficiency levels used discourse knowledge differently in their recall of text information. Focusing more specifically on the role of discourse-based graphic organizers, Tang (1992) showed that students trained to recognize the discourse structure of a text, performed better on a comprehension measure.

Strategic processing

L1 research on strategic processing during reading (e.g., inferencing, comprehension monitoring, and goal setting) demonstrates that strategic processes and metacognition influence reading comprehension. Discourse comprehension researchers have shown that inferencing that arises from "learning from texts" has an important impact on comprehension (Goldman & Rakestraw, 2000; Nation, 2005; Perfetti et al., 2005). Similarly, comprehension monitoring (as in monitoring for problems in text comprehension) appears to be a predictor of comprehension abilities (Cain, Oakhill, & Bryant, 2004). At the same time, these abilities, being metacognitive in nature, are not simple reading strategies. Rather, they constitute a range of skills and abilities, and represent a range of strategic responses to text difficulties.

Experimental research on comprehension instruction and strategy training is extensive (see Pressley, 2006; Trabasso & Bouchard, 2002). Many studies demonstrate a causal impact of instructional skills and strategies on reading

comprehension. Important evidence supports answering main idea questions as a post-reading task, using semantic mapping of ideas from a text, previewing specific information from the text, asking student to formulate questions about a text, filling in and generating graphic organizers that reflect the organization of the text, visualizing information from the text, raising awareness of discourse organization of the text, among others. Overall, a number of reasonably effective strategies have been identified in instructional research, though *combinations of strategic responses to texts* appear to be more effective in supporting comprehension development (Trabasso & Bouchard, 2002; see Grabe, 2004). The best strategic approaches to reading instruction involve reciprocal teaching, transactional strategies instruction, and concept-oriented reading instruction (Block & Pressley, 2002; Guthrie, Wigfield, & Perencevich, 2004; Pressley, 2006).

Research on L2 strategic processing is far more limited. There are relatively few studies that demonstrate a relationship between reading strategies and reading comprehension. Chen and Graves (1995) showed that previewing a text was a pre-reading strategy that improved student comprehension. Klingner and Vaughn (2000) drew on reciprocal teaching concepts and developed a four-strategy program for teaching strategic reading, Cooperative Strategic Reading. Results showed some improvements in reading strategy use and in vocabulary growth based on the approach. In a recent meta-analysis of L2 reading strategy research, Taylor, Stevens, and Asher (2006) reviewed the existing empirical research in L2 reading strategy training (10 published studies and 12 dissertations) and concluded that a low to moderate effect exists between strategy training and L2 reading comprehension improvement. The analysis is encouraging, but it should be treated cautiously due to the limited database available for the analysis.

Extended exposure to print

L1 research on extended exposure to print has demonstrated a strong relationship between amount of reading (over long periods of time) and improved reading comprehension (Guthrie, Wigfield, & Von Secker, 2000; Guthrie, Wigfield, & Perencevich, 2004; Stanovich, 2000). Stanovich and colleagues, in a series of studies, showed that exposure to print (amount of reading) was an important independent predictor of reading ability (see Stanovich, 2000 for overview). Sénéchal (2006) also showed that reading exposure was a significant predictor of reading comprehension among 90 fourth grade French-speaking students. Interestingly, despite many claims about Sustained Silent Reading (SSR) and Free Voluntary Reading (FVR), there are no rigorously controlled experimental studies that show a strong relationship between either of these instructional approaches and reading comprehension abilities.

Research on extensive reading is relatively unexplored in L2 reading. The one set of studies that has indicated the positive effects of extensive reading on reading comprehension was that carried out by Elley over a period of 20 years (Elley, 2000). In these studies, he has shown that getting students to read extensively over a long period of time consistently improved reading comprehension abilities,

as well as a number of other language skills. In most other studies on extensive reading, there is little controlled empirical evidence that reading extensively has a significant influence on reading comprehension development.

Fluency

L1 research on reading fluency has demonstrated that the reading fluency, or relative non-fluency, of readers with reading difficulties, and especially children, is strongly correlated with reading comprehension (Samuels, 2006). Sabatini (2002) showed that fluency was correlated with reading ability for people with reading difficulties across a wide age range, including adults with reading difficulties. Levy (2001) has shown that there is a moderate correlation between word reading fluency and reading comprehension. Fuchs et al. (2001) and Jenkins et al. (2003) have shown that oral passage reading fluency – orally reading a text for one minute – is strongly related to reading comprehension abilities for L1 children. Walczyk et al. (1999) has shown that increasing reading rate moderately among readers leads to improved comprehension. Breznitz (2006) has also demonstrated this relationship between increased reading rate and improved comprehension among second grade children with reading difficulties. Research using Rapid Automatic Naming (RAN) tasks is somewhat more controversial (Bowey, 2005), but a number of researchers have shown a relationship between RAN measures and reading comprehension for children, both with and without reading disabilities (Georgiou, Parrila, & Kirby, 2006; Geva & Yaghoub-Zadeh, 2006). RAN appears to be a strong predictor of reading difficulties for languages with shallow orthographies (unlike English) (Landerl & Thaler, 2006).

Experimental research focused on reading fluency in L1 settings is fairly well established. A number of studies have shown that training to recognize words faster will lead to faster word recognition on other words if the training is sufficiently extensive (Martin-Chang & Levy, 2006). However, this type of training appears to have only limited direct benefits for reading comprehension. Levy, Abello, and Lysynchuk (1997) showed that training on word recognition for most of the words in a given text led to better text comprehension for that text. Tan and Nicholson (1997) achieved similar results but also demonstrated that word recognition training (through flash card practice) led to better reading comprehension on other texts, as well. However, in other studies, Levy and her colleagues have not demonstrated that learning to recognize words more fluently will lead directly to improved reading comprehension (see Levy, 2001). In the area of passage fluency training, primarily by rereading passages multiple times (sometimes aloud and sometimes silently), there is good evidence that passage rereading leads to both improved reading fluency and improved reading comprehension (Stahl & Heubach, 2005; National Reading Panel, 2000; Samuels & Farstrup, 2006).

There is little research that demonstrates a relationship between reading fluency and reading comprehension development in L2 contexts. However, a series of recent studies carried out by Sawaki and Sabatini (2007; Jiang, Sabatini, & Sawaki,

2007) has reported a strong relationship between oral passage reading fluency and reading comprehension ($r^2 = 0.36$). Also, Geva and Yaghoub-Zadeh (2006) have demonstrated that RAN tasks are related to L2 text reading efficiency and word reading fluency. In a series of L2 training studies by Taguchi, Takayasu-Maass, and Gorsuch (2004) and by Lems (2005), there is clear evidence that fluency practice leads to increased L2 reading fluency and to some improvement in L2 reading comprehension. Improved word-reading fluency through training has also been reported by Fukkink, Hulstijn, and Simis (2005).

Motivation

L1 reading motivation is an area with only limited research focused explicitly on reading abilities. However, a few studies have shown that more motivated readers both read more and have better reading comprehension abilities. Guthrie et al. (2000) showed that third grade and fifth grade readers who were more motivated read more and that eighth and tenth grade readers who were more motivated also were better at reading comprehension. Guthrie, Wigfield, and Perencevich (2004) also showed that specific instructional contexts can improve reading motivation and, as a consequence, improve reading comprehension. There is very little research on L2 reading motivation, a construct that is quite different from general L2 language learning motivation (cf. Mori, 2002).

All of the above components contribute directly to reading comprehension and represent aspects of the construct of reading comprehension. (There are additional components not covered in this review that also impact L2 reading comprehension – e.g., working memory, background knowledge – though these components require more complex descriptions and evaluations.) In almost all cases, L1 research demonstrates that training in these components leads to improved reading comprehension. In addition, the experimental training studies indicate that these component skills are likely to be useful components of a curriculum designed to improve students' L2 reading abilities. Comparable L2 research on training impacts of component skills on reading comprehension is still needed (see Grabe, 2004).

L1 and L2 Reading Differences

The above section developed the concept that L1 and L2 reading abilities share many of the same component skills and that the reading construct is very similar in terms of underlying cognitive and linguistic components. In most respects, this is a reasonable position to take (see Geva & Siegal, 2000; Koda, 2007). At the same time, any consideration of L2 reading abilities has to recognize that there are specific aspects of reading in a second language that distinguish it from L1 reading abilities. Among these differences, six stand out as potentially important for discussions of skills and abilities that support L2 reading comprehension (and that might impact L2 teaching and testing).

1 In the L2, learners have a much smaller linguistic knowledge base of the L2 when they begin reading. Their knowledge of vocabulary is much more limited; their knowledge of syntax is similarly limited and there are no native intuitions about structure; their knowledge of markers of discourse structure and their awareness with text organization in the L2 will also be limited.
2 L2 students, overall, will have much less experience with reading exposure in the L2. They simply will have had much less practice in L2 reading.
3 L2 students will experience L2 reading differently because they have experiences reading in two different languages and because cognitive processing will involve two language systems (e.g., accessing the bilingual lexicon, using a joint strategy system – Garcia, 1998; Kern, 1994) (see also Cook & Bassetti, 2005a: Multi-competence Hypothesis).
4 Aside from the possibilities of developing somewhat distinct cognitive processing, students engaged in L2 reading will also experience a range of transfer effects (cognitive skills, strategies, and goals and expectations). Some transfer effects will involve interference from the L1; others will facilitate L2 reading processes. (See Dressler & Kamil, 2006; Geva & Siegal, 2000; Koda, 2005 on the Interdependence Hypothesis and the Underlying Cognitive Abilities, or Central Processing Hypothesis.) Specific issues related to transfer include the Linguistic Threshold Hypothesis and unique aspects of L2 reading. The Linguistic Threshold Hypothesis argues persuasively that a certain level of L2 linguistic knowledge is needed to support more fluent reading comprehension processes. Unique aspects of L2 reading include the extensive use of glosses while reading, the effort to carry out mental translations while reading, and the extensive use of bilingual dictionaries and guessing word meanings.
5 L2 reading is also distinct in that readers rely on a different combination of general background knowledge. Drawing on information about "how the world works" sometimes varies between L1 and L2 reading experiences.
6 Moreover, L2 readers will encounter distinct social and cultural assumptions in L2 texts that they may not be familiar with or find somewhat hard to accept. Certain types of inferencing that might be routine in L1 reading may not support comprehension processing in the L2, particularly in cases of engaging in reading for purposes of "reading to learn."

There has been a growing debate on the extent of the differences between L1 and L2 readers. Drawing on the arguments made by Bernhardt (2003, 2005), Koda (2005), Genesee et al. (2006), and Geva and Siegal (2000), a number of statements can be developed. First, beginning and intermediate L2 reading abilities are more distinct from L1 reading than advanced L2 reading abilities will be. As an L2 reader becomes fluent and highly skilled in reading comprehension, the reading processes involved become more similar (though perhaps never the same). Second, the linguistic differences between L1 and L2 (e.g., the linguistic differences between Spanish and English vs. the linguistic differences between Chinese and English) will have an impact on L2 reading. This impact of L1/L2 differences will diminish with increasing L2 reading proficiency (but will not disappear). Third,

the extent of linguistic differences between L1 and L2 readers will be distinct for children learning to read in the L2 (emerging bilingual learners) and older L2 learners (adolescents and adults). The differences found between L1 and L2 reading will be larger for older learners. Fourth, L2 reading will require a foundation in L2 language skills and knowledge bases in order for higher-level L1 reading skills and strategies to transfer easily.

Finally, the underlying cognitive processes involved in L1 and L2 reading are generally the same. While there are clear and demonstrable differences between L1 and L2 reading among various groups of learners, overall patterns suggest that the underlying component skills are essentially the same (Geva & Siegal, 2000; Koda, 2007). Moreover, as L2 reading proficiency increases, the reading comprehension process looks increasingly similar. This increasing similarity is likely to be true for numerous reasons, including the following: greater amounts of reading practice and exposure to L2 print, more efficient combinations of strategic approaches to L2 reading in line with goals for reading, greater resource knowledge of the L2 and the social/cultural world of the L2, greater fluency and automaticity of L2 reading skills, recognition of successes in L2 reading, and an increasing willingness to read in the L2 for various purposes. One conclusion to be taken from this discussion of L1/L2 differences is that many if not most of the results of research on component skills that support reading comprehension will likely apply across L1 and L2 learner groups (except perhaps for beginning to low-intermediate readers).

L2 Reading Assessment

Discussions of language assessment of all types start with considerations about test validity. This chapter will assume that the concept of validity, or construct validity, is available for review through other sources. It is sufficient to note that validity is an extended argument from multiple perspectives (construct representation, reliability, comparative assessment, consequential impact, and usability) that persuasively argues for the appropriate and fair use of a test in a given context. In this section, I will assume that these principles should guide assessment activities.

In discussing reading assessment, one must decide if the discussion is to focus primarily on classroom assessment, informal assessment, and alternative assessment practices, or on standardized assessments. Classroom assessment of reading development has a much wider scope than standardized assessment options. In situations of formal comprehension assessment in the classroom, often as an achievement test, comprehension gains are assessed on a specific text or set of texts that has been recently taught. Classroom settings for reading assessment also include informal reading inventories or miscue analysis (reading aloud one-on-one with an evaluator who notes errors on a record sheet and then determines what progress a student has made or what instructional support is needed by the student).

The classroom context also allows for various types of alternative assessment options for determining student progress. In the classroom, one has the option of continuous ongoing assessment (quizzes, observations, record keeping of homework, interviews, progress charts, amount of reading, etc.). In such settings, almost any language task that is a teaching task can also be used as an assessment task. What might be lost in the way of relatively weak validity or consistency for any given reading task or measurement in the classroom setting is countered by the continual nature of assessment practices of all types. At the same time, teachers and administrators have a responsibility to develop appropriate tasks and appropriate interpretations of task outcomes so that students are not evaluated unfairly. For this reason, it is important to look at the types of tasks developed for more standardized reading tests and consider how these major tests incorporate and reflect the reading construct, and how they engage L2 learners in fair and appropriate assessment tasks (see Appendix).

Unfortunately, there are not many relevant, easily accessible, and useful classroom-based tests of English L2 reading abilities. This problem is clearly demonstrated by a recent review of L2 literacy development in US K-12 settings (August & Shanahan, 2006a). As the editors state, "The assessments cited in the research to gauge language-minority students' language proficiency and to make placement decisions are inadequate in most respects" (August & Shanahan, 2006b, p. 17). There is certainly a need for good, well-developed low- to medium-stakes reading tests that can be used in a variety of classroom contexts, that are graded for multiple proficiency levels, that are affordable, and that can support instructional decision-making.

In contrast to the more open classroom settings, standardized assessment practices are far more constrained by concerns of validity, reliability, time, cost, useability, and consequence. Most standardized tests attempt to establish a student's level of reading comprehension ability, either in relation to some set of criteria or in relation to a wider population. The time available for such an assessment is limited and the test must be fair and useful. These concerns strongly limit the types of reading assessment tasks that can be used. Until fairly recently, standardized L2 reading assessment has not been overly concerned with the development of reading assessment in terms of an evidence-based construct of reading abilities tied to the group of students being assessed. However, efforts to develop standardized reading tests in the past 15 years have focused much more explicitly on the construct of reading and claims that can be made for reading proficiency based on evidence from the test. There are a number of good examples of standardized assessments being developed from an initial set of claims about the nature of L2 reading ability and a set of tasks that would measure the relevant component skills.

The development of the IELTS (International English Language Testing System) represents one example of building a standardized test from construct assumptions and the gathering of appropriate evidence (Clapham, 1996). Similarly, the efforts to redesign the TOEFL have only recently (since 1995) been driven by the prior establishment of an appropriate L2 reading construct and evidence to support

assessment tasks that would measure this construct (see Chapelle, Jamieson, & Enright, 2008). Additional approaches to L2 standardized assessment that are built from claims about reading abilities include the suite of Cambridge English proficiency exams (Weir & Milanovich, 2003) and the Advanced English Reading Test in China (Weir, Huizhong, & Yan, 2000). These approaches to L2 reading assessment strongly document arguments for an L2 reading construct, the importance of specific components of reading ability, the types of tasks that can assess these component abilities, and the creation of overall tests that generate evidence for the claims made (thus building a validity argument for the appropriateness of the test that has been developed).

Drawing on evidence from research on reading abilities to argue for a reading construct is one way in which reading assessment practices have improved. However, the relationship is reciprocal; it is also the case that careful reading assessment research has helped provide evidence for the component abilities central to L2 reading, as well. That is, the evidence provided from assessment research has influenced conceptualizations of component abilities underlying L2 reading comprehension.

For example, it is now clear from assessment research that L2 vocabulary knowledge is a powerful component of L2 reading abilities (Pike, 1979; Qian, 2002). Similarly, and perhaps more surprisingly for some, L2 grammar knowledge is a major component ability for L2 reading comprehension (Alderson, 2000; Enright et al., 2002; Pike, 1979). Appropriate reading strategies (as opposed to test-taking strategies) used in testing contexts also appear to be an important component of L2 reading abilities. While there is other compelling evidence for these components of L2 reading ability (as well as other components of reading ability), it is important to recognize that these component skills have also emerged from research on L2 reading tests.

L2 Implications for Reading Instruction and Assessment

Overall, the combination of research on L1 and L2 reading abilities suggests that there is a reasonably good set of implications for L2 reading instruction and assessment suggested by research results. Reading comprehension requires the following skills and knowledge resources:

1. The ability to decode graphic forms for efficient word recognition
2. The ability to access the meaning of a large number of words automatically
3. The ability to draw meaning from phrase- and clause-level grammatical information
4. The ability to combine clause-level meanings to build a larger network of meaning relations (comprehend the text)
5. The ability to recognize discourse-level relationships and use this information to build and support comprehension

6 The ability to use reading strategies with more difficult text and for a range of academic reading tasks
7 The ability to set goals for reading and adjust them as needed
8 The ability to use inferences of various types and to monitor comprehension in line with reading goals
9 The ability to draw on prior knowledge, as appropriate
10 Abilities to evaluate, integrate, and synthesize information from a text to form a situation model of comprehension (essentially what the reader learns from the text)
11 The ability to maintain these processes fluently for an extended period of time
12 The motivation to persist in reading and to use the text information appropriately in line with reader goals

In an ideal world, each of these implications from research would be subject to a set of instructional training studies and longitudinal development studies to determine the potential for turning implications into effective applications in the classroom. Once interesting applications are developed, it is important to determine the effectiveness of those applications more generally for the development of L2 reading abilities. Of course, we cannot wait for this ideal to be carried out because we need to improve L2 students' reading abilities at the present moment as best we can. Instructional practices, based on current evidence, need to be used in classrooms while additional evidence is gathered. The best that we can offer are practices that have been examined and found useful, and then teachers should draw on their expertise and experience to build the larger curriculum framework for effective teaching.

Teaching L2 Reading

The major argument of the chapter to this point is that a number of key reading subskills can be taught successfully, and further, that the learning of these subskills will contribute to a learner's reading comprehension abilities. How these skills should be taught most effectively is indicated to some extent by the research reviewed above. However, there are many instructional approaches that can potentially contribute to the development of reading abilities. While there is not yet extensive empirical research on the effectiveness of many practices, there is teaching expertise and experience which support these approaches until controlled evidence is collected and assessed. Quite a lot is already known about promising instructional practices. In some cases, we know that instructional activities carried out consistently have been useful with some groups of students and should be useful with a number of other student groups. We know that instructional activities which receive enough instructional time, intensity of effort, and priority in the curriculum can lead to significantly improved reading skills development. We know that students respond well to a number of instructional activities that improve reading skills. We can build on these starting points while additional research is being carried out.

The goal for reading instruction, at a general level, is to incorporate key component skills and knowledge into a reading curriculum. Specific instructional activities included in the curriculum follow from the major themes developed earlier in the article and the resulting implications. To describe how to carry out each suggestion would amount to multiple teaching-instruction handbooks, a task that goes far beyond the scope of the present chapter. More generally, good suggestions and examples for many of the issues described here can be found in a number of good reading textbook sets (e.g., Anderson, 2003; Blanchard & Root, 2007; Silberstein, Dobson, & Clarke, 2002; for many good instructional examples). What can be offered in this chapter is a set of more general curricular principles when building a reading curriculum and rethinking instructional practices. These principles include:

1 A curricular framework for conceptualizing L2 reading instruction that should integrate major skills instruction with extensive practice and exposure to print (building upon a needs analysis, goals and objectives for teaching and testing, attractive and plentiful resources, appropriate curriculum framework, effective teacher support, effective teaching materials and resources).
2 Reading materials and resources that need to be interesting, varied, good-looking, abundant, accessible, and well-used.
3 Some degree of student choice along the way in selecting major reading sources.
4 Reading skills that are introduced and taught by examining the primary texts used in the reading course. There should not be a need for special materials to introduce reading skills (though additional activities for further practice are necessary). If skills are meant to help comprehension, they should help with comprehension of the major texts being read in a class. This link between skills and instructional texts also raises metalinguistic awareness of how texts are put together linguistically.
5 Lessons that are structured around pre-reading, during-reading, and post-reading activities, and these activities should be varied from one major reading to the next.
6 Instruction that is built on an integrated curriculum framework and can support the following developmental goals:
   (a) Promote word-recognition skills
   (b) Build a large recognition vocabulary
   (c) Practice comprehension skills that combine awareness of grammar, main idea identification, and comprehension strategies: strategy instruction is not separate from text comprehension instruction
   (d) Build awareness of discourse structure (recognize main ideas, recognize major organizing patterns, recognize how the information is organized in parts of the text, recognize overt signals of text structure, recognize anaphoric relations in texts, recognize other cohesive markers in texts)
   (e) Promote strategic reading
   (f) Practice reading fluency (build reading rate, build text passage reading fluency, read and reread at home with parent or tape or self)

(g) Develop extensive reading
(h) Develop motivation
(i) Combine language learning with content learning

7 Opportunities for students to experience comprehension success while reading.
8 Expectations that reading occurs in class every day and that many extended reading opportunities are provided on a regular basis.

Testing L2 Reading

Carrying out appropriate reading assessments also requires a translation from "implications from research," as well as an effort to consider useful applications directly from assessment research to realistic classroom situations. Again, a thorough set of practical recommendations and associated example activities is beyond the scope of this chapter. However, a number of good examples of reading assessment tasks can be found in Alderson (2000), Hughes (2004), and Weir and Milanovic (2003). It is also important to highlight two key concepts for reading assessment. First, reading assessment tasks are a restricted purpose for reading. The context for assessment itself precludes any strong assumption of a match to authentic reading in the "real world." One consequence is that assessment tasks do not need to be avoided or radically distorted because they are not the same as reading in the real world. Realistic reading assessment tasks, as opposed to real reading tasks, may be the better benchmark (see Alderson, 2000). Second, reading assessments need to take into account both students' proficiency levels and students' ages. Tasks need to change to fit a given proficiency range and student maturity level as part of an appropriate reading assessment battery.

In closing the discussion of reading assessment, 10 recommendations for good assessment practices are offered (though the list could easily include 20 recommendations):

1 Students should be tested on a range of relevant skills.
2 Students should be encouraged to read longer texts (for advanced assessment, 700–1,200 words, assuming 120–150 wpm).
3 Background knowledge influences all comprehension and needs to be accounted for in a positive way (multiple topics, multiple tasks, general topics, limited interdependence of items within some subset of tasks).
4 Group tasks might be used to engage discussions of reader interpretations of texts.
5 Extensive reading should not be discouraged by assessment procedures.
6 The importance of identification and fluency skills needs to be explored (reading word lists, oral reading for one minute, silent reading on computer, timed reading, assessment of rereading).
7 Tests might explore ways to assess synthesis skills, evaluation skills, strategies, metacognitive knowledge, and skills monitoring (text monitoring while reading).

8 Reading might be tested within a content-focused battery (but item interdependence has to be a concern).
9 Tests might consider item types that take advantage of computer interfaces (e.g., allow a text to disappear after reading, use a few hypertext links in a test passage, combine information from multiple texts to complete a task).
10 Many skills might be measured usefully through informal assessment options in classroom contexts. What one loses in reliability and objective controls could be countered by the many formal and informal assessments that can be made in the classroom. (But informal assessment is not a substitute for more formal testing.)

Concluding Comments

There are a number of additional recommendations that can be made for building L2 reading instruction, planning effective multi-level reading curricula, developing appropriate assessment practices, and providing feedback on learning progress (assessment for learning). This article has sought to develop the foundation that leads to useful implications for reading instruction and assessment. It has also outlined a simple array of curricular guidelines for reading instruction and assessment practices that can be developed or adapted to a fairly wide range of L2 reading contexts. At the same time, a short article of this type can only begin to scratch the surface of the potential instructional and assessment options and variations that can help make a difference in reading success with L2 students. The key to these ongoing efforts is to continue exploring effective practices for reading instruction and tasks for reading assessment that are based on important and relevant reading research and persuasive instructional research.

Appendix: Reading Test Item Types (see Alderson, 2000; Hughes, 2004, and others)

The primary purpose of assessment is to collect information to make inferences about students' reading abilities.

1 Cloze formats
2 Gap-filling formats (a rational reason for selecting blanks)
3 Multiple-choice formats
4 Sentence completions
5 Matching (and multiple matching) techniques
6 Classification into groups
7 Text segment ordering
8 Dichotomous items (T/F, Y/N)
9 Editing formats
10 C-tests

11 Cloze elide formats (remove extra word)
12 Text gap formats (place a sentence in the appropriate text gap)
13 Short answer formats
14 Free recall formats
15 Summary formats (1 sentence, 2 sentences, 5–6 sentences)
16 Information transfer formats (graphs, tables, flowcharts, outlines, maps, etc.)
17 Choosing from a "heading bank" to label identified paragraphs
18 Portfolios
19 Project performance
20 Informal assessment methods
   (a) Have students read aloud for the teacher/tester and make notes/observations or use of checklist/note miscues on the text
   (b) Have students read aloud in class
   (c) Have a student read and then have a discussion on the text (one-on-one)
   (d) Keep a record of student responses to questions in class after a reading
   (e) Keep notes on student participation in class discussions on a reading
   (f) Have students do think-alouds while reading (one-on-one)
   (g) Have student keep diaries or reading journals
   (h) Have students do book reports
   (i) Have students recommend books
   (j) Have students enact a scene/episode/event
   (k) Keep charts of student readings
   (l) Keep charts of reading rate growth
   (m) Have students list words they want to know after reading and why
   (n) Record how far a student gets on an extended reading task
   (o) Observe what reading material is read during free reading or SSR
   (p) Observe how much students spend time on task during free reading or SSR
   (q) Note the uses of texts in a multi-step project and discuss
   (r) Ask students about their reading progress
   (s) Ask students about their goals for reading with various texts and tasks
   (t) Have student do paired readings and observe
   (u) Observe students reading with an audio tape
   (v) Have students list strategies they have used while reading
   (w) Have students explain why they gave their answers after or during a task

REFERENCES

Alderson, C. (2000). *Reading assessment*. New York: Cambridge University Press.
Anderson, N. (1999). *Exploring second language reading*. Boston: Heinle & Heinle.
Anderson, N. (2003). *Active skills for reading*, 4 vols. New York: Heinle & Heinle.

Anglin, J. (1993). *Vocabulary development: A morphological analysis.* Monographs of the Society for Research in Child Development 58, 10. Chicago: University of Chicago Press.

August, D. & Shanahan, T. (eds.) (2006a). *Developing literacy in second language learners.* Mahwah, NJ: Lawrence Erlbaum.

August, D. & Shanahan, T. (2006b). Introduction and methodology. In D. August & T. Shanahan (eds.), *Developing literacy in second language learners* (pp. 1–42). Mahwah, NJ: Lawrence Erlbaum.

Beck, I., Perfetti, C., & McKeown, M. (1982). Effects of long-term vocabulary instruction on lexical access and reading comprehension. *Journal of Educational Psychology* 74, 506–21.

Bernhardt, E. (2003). Challenges to reading research from a multilingual world. *Reading Research Quarterly* 38, 112–17.

Bernhardt, E. (2005). Progress and procrastination in second language reading. *Annual Review of Applied Linguistics* 25, 133–50.

Blanchard, K. & Root, C. (2007). *For your information: Reading and vocabulary skills,* 4 vols. New York: Pearson Longman.

Block, C. & Pressley, M. (eds.) (2002). *Comprehension instruction: Research-based best practices.* New York: Guilford Press.

Bowey, J. (2005). Predicting individual differences in learning to read. In M. Snowling & C. Hulme (eds.), *The science of reading: A handbook* (pp. 155–72). Malden, MA: Blackwell.

Breznitz, Z. (2006). *Fluency in reading.* Mahwah, NJ: Lawrence Erlbaum.

Cain, K., Oakhill, J., & Bryant, P. (2004). Children's reading comprehension ability: Concurrent prediction by working memory, verbal ability, and component skills. *Journal of Educational Psychology* 96, 31–42.

Carlisle, J. (2003). Morphology matters in learning to read: A commentary. *Reading Psychology* 24, 291–322.

Carlo, M., August, D., McLaughlin, B., Snow, C., Dressler, C., Lippman, D., Lively, T., & White, C. (2004). Closing the gap: Addressing the vocabulary needs of English-language learners in bilingual and mainstream classrooms. *Reading Research Quarterly* 39, 188–215.

Carrell, P. (1984). The effects of rhetorical organization on ESL readers. *TESOL Quarterly* 18, 441–69.

Carrell, P. (1985). Facilitating ESL reading by teaching text structure. *TESOL Quarterly* 19, 7272–752.

Chapelle, C., Jamieson, J., & Enright, M. (eds.) (2008). *Building a validity argument for the Test of English as Foreign Language.* Mahwah, NJ: Lawrence Erlbaum.

Chen, H.-C. & Graves, M. (1995). Effects of previewing and providing background knowledge on Taiwanese college students' comprehension of American short stories. *TESOL Quarterly* 29, 663–86.

Chow, B., McBride-Chang, C., & Burgess, S. (2005). Phonological processing skills and early reading abilities in Hong Kong Chinese kindergartners learning to read English as a second language. *Journal of Educational Psychology* 97, 81–7.

Clapham, C. (1996). *The development of IELTS: A study of the effects of background knowledge on reading comprehension.* Cambridge: Cambridge University Press.

Cook, V. & Bassetti, B. (2005a). An introduction to researching second language writing systems. In V. Cook & B. Bassetti (eds.), *Second language writing systems* (pp. 1–67). Buffalo, NY: Multilingual Matters.

Cook, V. & Bassetti, B. (eds.) (2005b). *Second language writing systems.* Buffalo, NY: Multilingual Matters.

Dressler, C. & Kamil, M. (2006). First- and second-language literacy. In D. August & T. Shanahan (eds.), *Developing literacy in second-language learners* (pp. 197–238). Mahwah, NJ: Lawrence Erlbaum.

Droop, M. & Verhoeven, L. (2003). Language proficiency and reading ability in first and second language learners. *Reading Research Quarterly* 38, 78–103.

Duke, N. & Pearson, P. D. (2002). Effective practices for developing reading comprehension. In A. Farstrup & S. Samuels (eds.), *What research has to say about reading instruction* (3rd edn., pp. 205–42). Newark, DE: International Reading Association.

Durgunoglu, A., Nagy, W., & Hancin-Bhatt, B. (1993). Cross-language transfer of phonological awareness. *Journal of Educational Psychology* 85, 453–65.

Ehri, L. (2006). Alphabetics instruction helps students learn to read. In R. M. Joshi & P. Aaron (eds.), *Handbook of orthography and literacy* (pp. 649–77). Mahwah, NJ: Lawrence Erlbaum.

Ehri, L., Nunes, S., Willows, D., Schuster, B., Yaghoub-Zadeh, Z., & Shanahan, T. (2001). Phonemic awareness instruction helps children learn to read: Evidence from the National Reading panel's meta-analysis. *Reading Research Quarterly* 36, 250–87.

Elley, W. (2000). The potential of book flooding for raising literacy levels. *International Review of Education* 46, 233–55.

Enright, M., Bridgeman, B., Cline, M., Eignor, D., Lee, Y. W., & Powers, D. (2002). Evaluating measures of communicative language abilities. Paper presented at annual TESOL Convention. Salt Lake City, UT, April.

Frost, R. (2005). Orthographic systems and skilled word recognition processes in reading. In M. Snowling & C. Hulme (eds.), *The science of reading: A handbook.* (pp. 272–95). Malden, MA: Blackwell.

Frost, R., Kugler, T., Deutsch, A., & Forster, K. (2005). Orthographic structure versus morphological structure: Principles of lexical organization in a given language. *Journal of Experimental Psychology: Learning, Memory, and Cognition* 31, 1293–1326.

Fuchs, L., Fuchs, D., Hosp, M., & Jenkins, J. (2001). Oral reading fluency as an indicator of reading competence: A theoretical, empirical, and historical analysis. *Scientific Studies of Reading* 5, 239–56.

Fukkink, R., Hulstijn, J., & Simis, A. (2005). Does training in second-language word recognition skills affect reading comprehension? An experimental study. *Modern Language Journal* 89, 54–75.

Garcia, G. (1998). Mexican-American bilingual students' metacognitive reading strategies: What's transferred, unique, problematic. *National Reading Conference Yearbook* 47, 253–63.

Genesee, F., Geva, E., Dressler, C., & Kamil, M. (2006). Synthesis: Cross-linguistic relationships. In D. August & T. Shanahan (eds.), *Developing literacy in second language learners* (pp. 153–74). Mahwah, NJ: Lawrence Erlbaum.

Georgiou, G., Parilla, R., & Kirby, J. (2006). Rapid naming speed components and early reading acquisition. *Scientific Studies of Reading* 10, 199–220.

Geva, E. & Siegal, L. (2000). Orthographic and cognitive factors in the concurrent development of basic reading skills in two languages. *Reading and Writing* 12, 1–30.

Geva, E. & Yaghoub Zadeh, Z. (2006). Reading efficiency in native English-speaking and English-as-a-second-language children: The role of oral proficiency and underlying cognitive-linguistic processes. *Scientific Studies of Reading* 10, 31–57.

Goldman, S. & Rakestraw, J. (2000). Structural aspects of constructing learning from text. In M. Kamil, P. Mosenthal, P. D. Pearson, & R. Barr (eds.), *Handbook of reading research,* vol. 3 (pp. 285–310). New York: Longman.

Gottardo, A., Yan, B., Siegal, L., & Wade-Woolley, L. (2001). Factors related to English reading performance in children with Chinese as a first language: More evidence of cross-language transfer of phonological processing. *Journal of Educational Psychology* 93, 530–42.

Grabe, W. (2004). Research on teaching reading. *Annual Review of Applied Linguistics* 24, 44–69.

Guthrie, J., Wigfield, A., Barbosa, P., Perencevich, K., Taboada, A., Davis, M., Scafiddi, N., & Tonks, S. (2004). Increasing reading comprehension and engagement through Concept-Oriented Reading Instruction. *Journal of Educational Psychology* 96, 403–23.

Guthrie, J., Wigfield, A., Metsala, J., & Cox, K. (1999). Motivational and cognitive predictors of text comprehension and reading amount. *Scientific Studies of Reading* 3, 231–56.

Guthrie, J., Wigfield, A., & Perencevich, K. (eds.) (2004). *Motivating reading comprehension: Concept-Oriented reading Instruction*. Mahwah, NJ: Lawrence Erlbaum.

Guthrie, J., Wigfield, A., & Von Secker, C. (2000). Effects of integrated instruction on motivation and strategy use in reading. *Journal of Educational Psychology* 92, 331–41.

He, Y., Wang, Q., & Anderson, R. (2005). Chinese children's use of subcharacter information about pronunciation. *Journal of Educational Psychology* 97, 572–79.

Horiba, Y. (1993). The role of causal reasoning and language competence in narrative comprehension. *Studies in Second Language Acquisition* 15, 49–81.

Hudson, T. (2007). *Teaching second language reading*. New York: Oxford University Press.

Hughes, A. (2004). *Testing for language teachers*, 2nd edn. New York: Cambridge University Press.

Jenkins, J., Fuchs, L., van den Broek, P., Espin, C., & Deno, S. (2003). Sources of individual differences in reading comprehension and reading fluency. *Journal of Educational Psychology* 95, 719–29.

Jiang, X., Sabatini, J., & Sawaki, Y. (2007). Efficiency and fluency in ELL reading comprehension. AERA annual conference, Chicago, IL. April.

Joshi, R. M. & Aaron, P. (eds.) (2006). *Handbook of orthography and literacy*. Mahwah, NJ: Lawrence Erlbaum.

Kahn-Horwitz, J., Shimron, J., & Sparks, R. (2005). Predicting foreign language reading achievement in elementary school students. *Reading and Writing* 18, 527–58.

Kern, R. G. (1994). The role of mental translation in second language reading. *Studies in Second Language Acquisition* 16, 441–61.

Klingner, J. & Vaughn, S. (2000). The helping behaviors of fifth graders while using collaborative strategic reading during ESL content classes. *TESOL Quarterly* 34, 69–98.

Koda, K. (2005). *Insights into second language reading*. New York: Cambridge University Press.

Koda, K. (2007). Reading and language learning: Crosslinguistic constraints on second language reading development. *Language Learning Supplement* 57, 1, 1–44.

Kroll, J., Michael, E., Tokowicz, N., & Dufour, R. (2002). The development of lexical fluency in a second language. *Second Language Research* 18, 137–71.

Landerl, K. & Thaler, V. (2006). Reading and spelling acquisition and dyslexia in German. In R. M. Joshi & P. G. Aaron (eds.), *Handbook of orthography and literacy* (pp. 121–34). Mahwah, NJ: Lawrence Erlbaum.

Lems, K. (2005). A study of adult ESL oral reading fluency and silent reading comprehension. In B. Maloch et al. (eds.), *54th Yearbook of the National Reading Conference* (pp. 240–56). Chicago, IL: National Reading Conference.

Lesaux, N., Koda, K., Siegal, L., & Shanahan, T. (2006). Development of literacy. In D. August & T. Shanahan (eds.), *Developing literacy in second-language learners* (pp. 75–122). Mahwah, NJ: Lawrence Erlbaum.

Lesaux, N., Lipka, O., & Siegal, L. (2006). Investigating cognitive and linguistics abilities that influence the reading comprehension skills of children from diverse linguistic backgrounds. *Reading and Writing* 19, 99–131.

Levy, B. (2001). Moving the bottom: Improving reading fluency. In M. Wolf (ed.), *Dyslexia, fluency, and the brain* (pp. 357–79). Timonium, MD: York Press.

Levy, B., Abello, B., & Lysynchuk, L. (1997). Transfer from word training to reading in context: Gains in reading fluency and comprehension. *Learning Disability Quarterly* 20, 173–88.

Lundberg, I. (1999). Learning to read in Scandinavia. In M. Harris & G. Hatano (eds.), *Learning to read and write: A cross-linguistic perspective* (pp. 157–72). New York: Cambridge University Press.

Martin-Chang, S. & Levy, B. (2006). Word reading fluency: A transfer appropriate processing account of fluency transfer. *Reading and Writing* 19, 517–42.

McBride-Chang, C., Cho, J.-R., Liu, H., et al. (2005). Changing models across cultures: Associations of phonological awareness and morphological structure awareness with vocabulary and word recognition in second graders from Beijing, Hong Kong, Korea, and the United States. *Journal of Experimental Child Psychology* 92, 140–60.

McKeown, M., Beck, I., Omanson, R., & Pople, M. (1985). Some effects of the nature and frequency of vocabulary instruction on the knowledge and use of words. *Reading Research Quarterly* 20, 522–35.

Mori, S. (2002). Redefining motivation to read in a foreign language. *Reading in a Foreign Language* 14, 91–110.

Nagy, W. (2005). Why vocabulary instruction needs to be long-term and comprehensive. In E. Hiebert & M. Kamil (eds.), *Teaching and learning vocabulary: Bringing research to practice* (pp. 27–44). Mahwah, NJ: Lawrence Erlbaum.

Nagy, W. & Anderson, C. R. (1984). How many words are there in printed school English? *Reading Research Quarterly* 19, 304–30.

Nagy, W., Berninger, V., Abbott, R., Vaughn, K., & Vermeulen, K. (2003). Relationship of morphology and other language skills to literacy skills in at-risk second-grade readers and at-risk fourth-grade writers. *Journal of Educational Psychology* 95, 730–42.

Nation, I. S. P. (2001). *Learning vocabulary in another language*. New York: Cambridge University Press.

Nation, K. (2005). Children's reading comprehension difficulties. In M. Snowling & C. Hulme (eds.), *The science of reading* (pp. 248–65). Malden, MA: Blackwell.

National Reading Panel (NRP) (2000). *Teaching children to read: An evidence based assessment of the scientific research literature on reading and its implications for reading instruction.* Washington, DC: National Institute of Child Health and Human Development.

Nicholson, T. & Ng, G. L. (2006). The case for teaching phonemic awareness and simple phonics to preschoolers. In R. M. Joshi & P. Aaron (eds.), *Handbook of orthography and literacy* (pp. 637–48). Mahwah, NJ: Lawrence Erlbaum.

Perfetti, C., Landi, N., & Oakhill, J. (2005). The acquisition of reading comprehension skill. In M. Snowling & C. Hulme (eds.), *The science of reading* (pp. 227–47). Malden, MA: Blackwell.

Perfetti, C. & Liu, Y. (2005). Orthography to phonology and meaning: Comparisons across and within writing systems. *Reading and Writing* 18, 193–210.

Pike, L. (1979). *An evaluation of alternative item formats for testing English as a second language.* TOEFL Research Reports, No. 2. Princeton, NJ: Educational Testing Service.

Pressley, M. (2006). *Reading instruction that works*, 3rd edn. New York: Guilford Press.

Proctor, C. P., Carlo, M., August, D., & Snow, C. (2005). Native Spanish-speaking children reading in English: Toward a model of comprehension. *Journal of Educational Psychology* 97, 246–56.

Qian, D. (2002). Investigating the relationship between vocabulary knowledge and academic reading performance: An assessment perspective. *Language Learning* 52, 513–36.

Rayner, K., Juhasz, B., & Pollatsek, A. (2005). Eye movements during reading. In M. Snowling & C. Hulme (eds.), *The science of reading* (pp. 79–97). Malden, MA: Blackwell.

Sabatini, J. (2002). Efficiency in word reading of adults: Ability group comparison. *Scientific Studies of Reading* 6, 267–98.

Samuels, S. (2006). Toward a model of reading fluency. In S. Samuels & A. Farstrup (eds.), *What research has to say about fluency instruction* (pp. 24–46). Newark, DE: International Reading Association.

Samuels & Farstrup (eds.) (2006). *What research has to say about fluency instruction*. Newark, DE: International Reading Association.

Sawaki, Y. & Sabatini, J. (2007). Reading efficiency and reading comprehension. Princeton, NJ: Educational Testing Service. Unpublished manuscript.

Schoonen, R., Hulstijn, J., & Bossers, B. (1998). Metacognitive and language-specific knowledge in native and foreign language reading comprehension: An empirical study among Dutch students in grades 6, 8, and 10. *Language Learning* 48, 71–106.

Sénéchal, M. (2006). Testing the home literacy model: Parent involvement is differentially related to grade 4 reading comprehension, fluency, spelling, and reading for pleasure. *Scientific Studies of Reading* 10, 59–88.

Silberstein, S., Dobson, B., & Clarke, M. (2002). *Reader's choice*, 4th edn. Ann Arbor, MI: University of Michigan Press.

Stahl, S. & Heubach, A. (2005). Fluency-oriented reading instruction. *Journal of Literacy Research* 37, 25–60.

Stahl, S. & Nagy, W. (2006). *Teaching word meanings*. Mahwah, NJ: Lawrence Erlbaum.

Stanovich, K. (2000). *Progress in understanding reading: Scientific foundations and new frontiers*. New York: Guilford Press.

Taguchi, E., Takayasu-Maass, M., & Gorsuch, G. (2004). Developing reading fluency in EFL: How assisted repeated reading and extensive reading affect fluency development. *Reading in a Foreign Language* 16, 2, 70–96.

Tan, A. & Nicholson, T. (1997). Flashcards revisited: Training poor readers to read words faster improves their comprehension of texts. *Journal of Educational Psychology* 89, 276–88.

Tang, G. (1992). The effect of graphic representation of knowledge structures on ESL reading comprehension. *Studies in Second Language Acquisition* 14, 177–95.

Tannenbaum, K., Torgesen, J., & Wagner, R. (2006). Relationships between word knowledge and reading comprehension in third-grade children. *Scientific Studies of Reading* 10, 381–98.

Taylor, A., Stevens, J., & Asher, J. W. (2006). The effects of explicit reading strategy training on L2 reading comprehension. In J. Norris & L. Ortega (eds.), *Synthesizing research on language learning and teaching* (pp. 213–44). Philadelphia: John Benjamins.

Trabasso, T. & Bouchard, E. (2002). Teaching readers how to comprehend texts strategically. In C. Block & M. Pressley (eds.), *Comprehension instruction: Research-based best practices* (pp. 176–200). New York: Guilford Press.

Tunmer, W. & Chapman, J. (2006). Beginning reading development. In R. M. Joshi & P. Aaron (eds.), *Handbook of orthography and literacy* (pp. 617–35). Mahwah, NJ: Lawrence Erlbaum.

Van Gelderen, A., Schoonen, R., de Glopper, K., et al. (2004). Linguistic knowledge, processing speed, and metacognitive knowledge in first- and second-language reading comprehension: A componential analysis. *Journal of Educational Psychology* 96, 19–30.

Wagner, R., Piasta, S., & Torgesen, J. (2006). Learning to read. In R. Traxler & M. Gernsbacher (eds.), *Handbook of psycholinguistics* (2nd edn., pp. 1111–42). San Diego, CA: Academic Press.

Walczyk, J., Kelly, K., Meche, S., & Braud, H. (1999). Time limitations enhance reading comprehension. *Contemporary Educational Psychology* 24, 156–65.

Weir, C. & Milanovich, M. (2003). *Continuity and innovation: Revising the Cambridge proficiency in English examination 1913–2002*, Studies in Language Testing 15. Cambridge: Cambridge University Press.

Weir, C., Huizhong, Y., & Yan, J. (2000). *An empirical investigation of the componentiality of L2 reading in English for academic purposes*, Studies in Language Testing 12. Cambridge: Cambridge University Press.