LSHSS

Clinical Forum

Teaching Struggling Readers Who Are Native Spanish Speakers: What Do We Know?

Patricia G. Mathes
Southern Methodist University, Dallas, TX
Sharolyn D. Pollard-Durodola
Texas A & M University, College Station
Elsa Cárdenas-Hagan
University of Houston, TX
Sylvia Linan-Thompson
Sharon Vaughn
University of Texas at Austin

Preventing reading failure for nearly all children who are native English speakers has been repeatedly shown to be an obtainable reality (Foorman & Torgesen, 2001; Mathes & Denton, 2002). However, preventing reading failure among students who are English language learners (ELLs) is less well documented. Recent reports simply do not address the issue of whether current findings generalize to these students (i.e., National Reading Panel, 2000; Snow, Burns, & Griffin, 1998). In fact, the National Reading Panel report states that "the panel did not focus on special populations such as children whose language is other than English" (p. 1–3).

Currently, most of what has been written about instructing ELLs has focused on the language of instruction (English vs. native language)

ABSTRACT: **Purpose:** The purpose of this article is to share what we have learned from a series of 4 scientific studies about preventing reading failure through early intervention with native Spanish-speaking students who are struggling readers. The goal is to provide guidance to practitioners about effective practices for working with native Spanish-speaking children who are struggling to become readers using evidence rather than conjecture and opinion.
Method: First, the method and findings are summarized from each of 4 scientific studies (2 English, 2 Spanish) examining supplemental reading intervention that was provided in addition to core reading instruction in first grade. Second, the supplemental interventions are detailed. Next, aspects of instruction that appear to generalize from what we know about preventing reading failure among native English speakers are discussed. Last, the types of adjustments made to this instruction in order to accommodate the needs of English language learners are examined.
Implications: Outcomes confirm that native Spanish-speaking children benefited from explicit, systematic instruction that shared many of the same elements that have been proven to be effective with native English speakers. Further, English as a second language teaching techniques (i.e., use of concrete gestures and visual aids, consistent and repeated routines, and use of repeated phrases and consistent language) benefited native Spanish speakers who were struggling to learn to read in English. However, little transfer of knowledge from one language to another was detected.

KEY WORDS: English language learners, reading interventions, English as a second language, struggling readers, at-risk students

and the timing of transition from the native language to English (early vs. late: August & Hakuta, 1997; Garcia, 2000; Padilla, Fairchild, & Valadez, 1990; Ramirez, Yuen, & Ramey, 1991). Although resolution to these debates is critical to designing effective programs for ELLs, their resolution will do little to inform us about how to promote reading success among ELLs who struggle to learn to read, regardless of the language of instruction.

Recent syntheses of the extant research base of teaching reading to ELLs who are struggling readers revealed that there are relatively few empirical studies addressing the instructional needs of this population. Cavanaugh, Kim, Wanzek, and Vaughn (in press) conducted a synthesis of kindergarten reading intervention research and reported that only 2 studies even included ELLs. Of those that did, the manner in which the data were presented did not allow for disaggregation. Vaughn and colleagues conducted a synthesis of the extant research base of reading interventions provided to native Spanish-speaking ELLs who were struggling readers in kindergarten through third grade (Vaughn, Linan-Thompson, Pollard-Durodola, Mathes, & Cárdenas-Hagan, 2006). In that review, a total of only 8 intervention studies was found with an appropriate comparison condition. Of these, 3 were conducted outside the United States (Defior & Tudela, 1994: Spain; Sanchez & Rueda, 1991: Spain; Stuart, 1999: England). Of the remaining 5 studies, 2 were conducted in English (Denton, Anthony, Parker, & Hasbrouck, 2004; Gunn, Biglan, Smolkowski, & Ary, 2000), and 3 were conducted in Spanish (Goldenberg, 1994; Goldenberg, Reese, & Gallimore, 1992; Muñiz-Swicegood, 1994). All of the interventions, with the exception of Gunn et al., were narrow in scope (e.g., sole focus on phonemic awareness, storybook reading, or a specific comprehension strategy) and of short duration. Further, only Muñiz-Swicegood examined whether instruction in one language transferred to the second language.

Given the paucity of research, it is fair to say that currently there is inadequate evidence to guide decision making about how to best intervene with ELLs who are struggling readers. Although highly plausible, we simply do not know if findings from intervention research with native English speakers generalize well to ELLs. Similarly, we do not know if techniques that are considered best practices when working with ELLs facilitate the transfer of findings from native English-speaking students to ELLs. What is well documented is that, on average, ELLs usually experience lower levels of reading achievement when compared to their native English-speaking peers (August & Hakuta, 1997; Bialystok, 2002). It is speculated that ELLs require between 4 and 7 years to obtain grade-level literacy benchmarks (Hakuta, Butler, & Witt, 2000). Thus, it not terribly surprising that illiteracy rates for these students remain unacceptably and disproportionately high (Denton, West, & Walston, 2003; Gunn et al., 2000). Because ELLs represent the fastest growing population of children in our public schools (Kindler, 2002), it is imperative that we determine how to ensure reading success with these children (August & Hakuta, 1997). Clearly, the need for research-based knowledge for teaching ELLs who struggle to become readers is both immediate and critical (e.g., Gersten & Baker, 2000, 2003; Vaughn, Mathes, Linan-Thompson, & Francis, 2005).

PURPOSE

Since 1999, the Institute of Education Sciences within the U.S. Department of Education and the National Institute of Child Health and Human Development have funded a series of large-scale studies to determine "the conditions under which English-language reading and writing skills are most efficiently and productively developed in children whose first language is Spanish." The focus has been on native Spanish speakers because this is the largest group of ELLs in the United States. (For more information, see the Development of English Literacy with Spanish Speakers [DELSS] Web site: http://www.cal.org/delss/#GRANTS). As part of this initiative, our research team conducted a series of 4 studies (2 English, 2 Spanish) of first graders to directly examine reading intervention with ELLs who are native Spanish speakers and struggling readers. Because our focus was on preventing reading difficulties, we concentrated on first graders.

The purpose of this article is to share what we have learned from these 4 scientific studies about providing reading intervention with native Spanish-speaking ELLs who are struggling readers. We define struggling readers as students who enter first grade with very poor phonemic awareness, little letter knowledge, and little or no alphabetic decoding ability in any language. First, we summarize the findings from each of the 4 studies and share details about the interventions. Next, we examine if what we know about preventing reading failure among native English speakers generalizes to ELLs. Last, we examine the types of adjustments we made to this instruction in order to accommodate the needs of ELLs. Our goal is to provide guidance to practitioners about effective practices for working with native Spanish-speaking children who are struggling to become readers using evidence rather than conjecture and opinion.

Preventing Reading Failure With Native English Speakers

Before we can explore whether what is known about preventing reading failure with native English-speaking students applies to native Spanish-speaking ELLs, it is important to understand what we know about teaching native English-speaking students who are struggling readers. A convergence of evidence has accumulated to suggest that reading failure can be largely avoided among native English speakers (for reviews, see Denton & Mathes, 2003; Simmons, Kame'enui, Stoolmiller, Coyne, & Harn, 2003). However, achieving this outcome requires that schools teach critical content within the domains of phonemic awareness, graphophonemic knowledge, word recognition, fluency, vocabulary, and comprehension in an integrated manner (Foorman & Torgesen, 2001; National Reading Panel, 2000; Snow et al., 1998). Highly effective instruction built on this critical content includes provisions for readers to develop sensitivity to the individual phonemes heard within words, automatic recognition of most common grapheme–phoneme correspondences, and concepts of print. This instruction explicitly shows children how to link their phonemic awareness knowledge and graphophonemic knowledge to the act of phonological recoding (i.e., sounding out words) and building automatic word recognition. Beyond word recognition, effective instruction also provides adequate practice in oral reading of increasingly more complex connected text to develop fluency and oral reading. Effective instruction also teaches students strategies for learning new vocabulary and enhancing the deep processing of text (Foorman & Torgesen, 2001; National Reading Panel, 2000; Swanson, Hoskyn, & Lee, 1999; Vaughn, Gersten, & Chard, 2000).

It is not enough, however, to simply present students with the critical content. Instructional arrangements must provide students with adequate opportunities to develop personal ownership of the content.

Such ownership may require greater time and intensity (highly targeted instruction delivered in small groups) for students who struggle to learn reading as compared with students who learn to read readily. For these students, a tiered approach, with each tier providing instruction of greater intensity, has proven particularly effective (Denton & Mathes, 2003; Mathes et al., 2005; Vaughn & Linan-Thompson, 2003; Vaughn, Linan-Thompson, & Hickman, 2003). In a tiered model, the first tier (Tier 1) represents comprehensive core reading instruction that is provided to all children. The second tier (Tier 2) represents highly targeted instruction that is delivered in homogenous small groups as a supplement to the core. The third tier (Tier 3) is reserved for those children who do not make adequate progress even with Tier 2 supplemental instruction, and who require ongoing support and intervention. Typically, these students are placed in special education.

There are many scientific studies that illustrate the power of providing Tier 1 and Tier 2 instruction in tandem. For example, Vellutino et al. (1996) identified middle class children with very low word recognition skills at the beginning of Grade 1. More than 90% were at grade level by the end of the academic year. More recently, Mathes and colleagues (Denton & Mathes, 2003, Mathes & Denton, 2002; Mathes et al., 2005) demonstrated that the incidence of reading failure (defined as a score at or below the 30th percentile [i.e., standard score $\leq$ 92] on measures of word reading) could be reduced to less than 1% of the total school population by the end of first grade. In sum, the evidence suggests that, at least among native English-speaking children, if high-quality Tier 1 and Tier 2 instruction were provided in our public schools in tandem, less than 2% of children would require ongoing Tier 3 services.

Applicability to Teaching Native Spanish Speakers

It is often assumed that what we know about teaching native English speakers who are struggling readers is applicable to teaching native Spanish speakers who are struggling readers, and that promising practices advocated for teaching English as a second language (ESL) further assist these children to become competent readers (Gersten & Baker, 2000, 2003; Gersten & Geva, 2003). Such ESL practices include using concrete gestures and visuals and consistent routines, as well as keeping instruction highly interactive. It is also assumed that this instruction is even more effective when teachers scaffold explanations for vocabulary and concepts using, when possible, expressions from children's native culture, and when teachers can help students make connections between new and known information through activities such as prereading discussions and drawings (Ediger, 2001). Last, it is assumed that the knowledge that students gain in one language will transfer to a second language (Cisero & Royer, 1995; Durgunoglu, 2002; Durgunoglu, Nagy, & Hancin-Bhatt, 1993; Leafstedt & Gerber, 2005). The studies we conducted allowed us to test these assumptions (Vaughn, Cirino, et al., in press; Vaughn, Linan-Thompson, et al., 2006; Vaughn, Mathes, et al., in press).

SUMMARY OF STUDIES EXAMINING THE EFFECTS OF EARLY READING INTERVENTION FOR NATIVE SPANISH-SPEAKING CHILDREN

Our research team conducted 4 studies to test the efficacy of a Tier 2 supplemental early reading intervention that incorporated content that had been identified as being critical for native English speakers to native Spanish speakers who were struggling readers. Because our purpose was to examine the nature of effective interventions, rather than to report original research, and because each of these 4 studies are fully explicated elsewhere (Vaughn, Cirino, et al., in press; Vaughn, Linan-Thompson, et al., 2006; Vaughn, Mathes, et al., in press), we only briefly summarize the studies here.

Because our goal was not to determine the appropriate initial language of instruction for native Spanish-speaking students, the language of instruction for Tier 2 intervention was matched to the language of Tier 1 instruction. The language of instruction was determined by the schools that were following either a structured English immersion approach or a bilingual transitional education approach. For students whose core reading instruction was provided in English, we provided Tier 2 intervention in English with language supports (Vaughn, Cirino, et al., in press; Vaughn, Mathes, et al., in press). For students whose core reading instruction was provided in Spanish, we delivered Tier 2 intervention in Spanish (Vaughn, Cirino, et al., in press; Vaughn, Linan-Thompson, et al., 2006). However, while the language of instruction varied, all students in these studies received Tier 2 reading instruction using the same instructional approach and design principles.

Intervention History

In the 4 studies, we used an instructional intervention called *proactive reading* (Mathes, Torgesen, Wahl, Menchetti, & Grek, 1999) that had been proven to be highly effective with native English struggling readers. It incorporated all of the elements that had been illustrated as critical for preventing reading failure (Mathes et al., 2005). Outcomes from one study using this intervention with native English speakers who were at high risk for reading failure (i.e., initial status below the 18th percentile on multiple measures) resulted in average effect sizes (i.e., Cohen's d) compared to the no supplemental intervention comparison group on end-of-year growth measures of d = 1.25, and an average effect size for rate of growth across the year on the same measures of d = .89 (Mathes et al., 2005). Likewise, the percentage of children who remained at risk for reading failure in terms of their word reading ability was reduced to .02% of the total school population. Only 1% of the total school population failed to achieve an oral reading fluency goal of 35 words correct per min (Denton & Mathes, 2003). Further, this study included a group of typical readers who served as a benchmark group. Importantly, the rate of growth for struggling readers was steeper than the rate of growth for typical readers on multiple measures, suggesting that there was a closing of the achievement gap between these learner types (Mathes et al., 2005).

Application to Native Spanish Speakers

Although our research team chose proactive reading to serve as the cornerstone of our work with native Spanish speakers who were learning to read in English, we also made modifications to this intervention to reflect best ESL practices. Further, we added a component designed to enhance oral language that was not part of the original proactive intervention as it was conducted with native English speakers.

At the same time, we also created a second intervention in Spanish using identical instructional design principles. However, when we applied the same decision-making scheme to the Spanish language,

we ended up with a scope and sequence of skills progression that was considerably different from that of English. To be clear, we did *not* simply translate proactive reading into Spanish; rather, we created a new intervention using identical procedures applied to Spanish. We call the Spanish intervention *lectura proactiva* (Mathes, Linan-Thompson, Pollard-Duradola, Hagan, & Vaughn, 2001). In the end, the two interventions had identical instructional delivery techniques and nearly identical teaching routines, but introduced content at different times and used completely different text selections.

Research Design

All 4 studies shared the same experimental design, sample selection procedures, and measurement scheme and were conducted within a subset of schools that were participating in a large multistate, multisite, longitudinal project focusing on language and literacy development in young students. Because of the limited number of studies with this population, we chose to conduct our studies across consecutive years using the same research design—an initial study in English (Vaughn, Mathes, et al., in press) and in Spanish (Vaughn, Linan-Thompson, et al., 2006), followed by a replication study in English and in Spanish (Vaughn, Cirino, et al., in press). Schools in all 4 studies and both years were located in the Austin, Houston, or Brownsville areas of Texas. We purposely selected schools that were at least 60% Latino and had passing rates of 80% or better on the state-level reading achievement. Because we were interested in understanding the effectiveness of Tier 2 intervention within contexts in which Tier 1 was effective, we prioritized effective schools (determined by the performance of students in the school on statewide reading assessments). All schools participated in the free or reduced lunch program, and the proportion of students who qualified ranged from 85% to 100%.

Within each participating school, students reading at or below the 25th percentile on measures of letter knowledge and word reading ability in *both* Spanish and English were identified though universal screening of all first graders. Once struggling readers within a building were identified, they were assigned randomly to receive either the school's standard reading program or the standard core reading program plus Tier 2 intervention delivered by intervention teachers who were provided by our research team. Research intervention teachers met daily for 50 min with groups of 3–5 students. During this time, students received a 40-min lesson in either proactive reading or lectura proactiva, depending on the language of instruction. In addition, teachers engaged students in an additional 10-min storybook activity designed to promote oral language development.

Both English and Spanish intervention teachers received 12 hr of professional development from the authors of the intervention before implementation, an additional 6 hr after 6 weeks of implementation, and an additional 6 hr in the spring semester. Teachers also participated in frequent 1- to 2-hr staff development sessions at each site during which they (a) were provided feedback about their instruction based on observations and videotaped lessons, (b) discussed any questions or challenges regarding implementation of the intervention, and (c) collaborated in planning and instruction by using case studies from their students to plan for accelerating the growth of students. These sessions occurred on a weekly basis the first 2 months of intervention implementation and less frequently as intervention teachers improved in confidence and performance. Intervention teachers received frequent onsite coaching that varied from weekly to monthly depending on their needs. Teachers were also videotaped frequently and were asked to watch their videotapes, critique their instruction, and then debrief with a researcher.

Measures

Before the onset of Tier 2 intervention (October), students in both the experimental and contrast conditions completed a comprehensive, individually administered assessment battery examining each child's reading and language ability in both Spanish and English. This same battery was then repeated near the end of the academic year (May). Measures included in this battery are described in the following paragraphs.

Letter naming and letter sound identification. Students were asked to identify each of the 26 letters of the English alphabet and each of the 30 letters of the Spanish alphabet. Children were also asked to provide at least one sound for each letter.

Comprehensive Test of Phonological Processing (CTOPP; Wagner, Torgesen, & Rashotte, 1999). Seven subtests of the CTOPP were used, including Elision, Blending Words, Blending Nonwords, Segmenting Words, Sound Matching (First Sound and Last Sound), Nonword Repetition, and Rapid Letter Naming (Form A or B).

Test of Phonological Processing in Spanish (TOPPS; August, Kenyon, Malabonga, Caglarcan, & Louguit, 2001). TOPPS was developed to align with the English CTOPP in terms of the skills being addressed and the linguistic complexity of the items within each subtest, while still being appropriate for the Spanish language. Each subtest consists of comparable numbers of items as those in the TOPPS.

Woodcock Language Proficiency Battery—Revised: English and Spanish Forms (WLPB–R; Woodcock, 1991; Woodcock, & Muñoz-Sandoval, 1995). All subtests were available for Spanish and English and included Letter–Word Identification, Word Attack, Passage Comprehension, Listening Comprehension, Picture Vocabulary, Verbal Analogies, and Memory for Sentences.

Dynamic Indicators of Basic Early Literacy Skills (DIBELS; Good & Kaminski, 2002)/***Indicadores Dinámicos del Exito en la Lectura*** (Good, Bank, & Watson, 2003). This is a measure of reading fluency requiring the student to read a passage that is geared to the student's grade level orally for 1 min. At pretest and posttest, the first-grade beginning-of-year passage was administered in both Spanish and English. In addition, at posttest, the first-grade end-of-year passage was administered in both Spanish and English.

Efficacy Studies with Native Spanish Speakers Who Are Learning to Read in English

The English studies. In the first English study, 216 first-grade students were screened in both English and Spanish. Forty-eight students scored at or below the 25th percentile in both languages and were randomly assigned within schools to the intervention group or a comparison group representing typical practice in the schools. After 7 months, 41 students remained in the study. In the replication study, 362 students were screened, and 91 students (43 intervention and 48 comparison) met criteria and completed the study.

In the initial study, there were no differences between the treatment and comparison groups in either language on any measures at pretest, but there were significant posttest differences in favor of the treatment group for the following outcomes: phonological awareness, listening comprehension, word attack, word identification, and passage comprehension ($p < .05$). Effect sizes demonstrated a positive

impact of the intervention on the treatment group as compared to children who received the standard educational program, with an average $d = .83$. Importantly, transfer between what was learned in English reading to Spanish reading was apparent for this cohort. The average effect size on measures of Spanish reading was $d = .50$. Effect sizes for individual measures are presented in Table 1.

In the replication study, there were no differences between the treatment and comparison groups in either language on any measures at pretest. However, pretest reading performance levels of students in the replication study were considerably lower than pretest reading performance levels of students in the initial study, indicating that our second sample was lower functioning. Even so, there were significant posttest differences in favor of the treatment group for the following outcomes in English: phonological awareness, graphophonemic identification, word attack, and word reading efficiency. However, overall outcomes, although respectable, were not as robust as those for the initial study, with an average effect size of $d = .39$ on English reading measures (see Table 1 for individual effect sizes). We attribute this to the fact that students started out much lower, which resulted in slower movement through the curriculum. Even so, these students still made greater overall growth than did their counterparts in the comparison group. For this cohort, little transfer of skills to reading Spanish was evident. The average effect size on Spanish reading measures was $d = .03$.

We assessed both cohorts of students again at the end of second grade to determine the long-term impact of the intervention (Vaughn et al., 2007). In second grade, all students received only the school's standard reading program. Students who participated in Tier 2 intervention in first grade maintained superior performance in English as compared to students with an average effect size on reading measures of $d = .40$ (see Table 1 for individual effect size). The only negligible effect size observed was in oral language comprehension, $d = .24$. The average effect size on reading measures at the end of second grade for both cohorts was $d = .39$. However, learning to read in English in first grade had little transfer effect on second-grade Spanish reading (average Spanish reading $d = .06$).

Table 1. Intervention versus comparison group effect sizes on measures of reading.

	Initial study	*Replication study*	*2nd-grade follow-up*[a]
English studies[b]			
Letter Name Identification[c]	.59	–.23	
Letter Sound Identification[c]	1.01	.36	
Rapid Letter Naming[c]	.88	–.16	
Phonological Awareness Composite	1.24	.38	
Word Attack	1.09	.42	.45
Letter–Word Identification	.82	.42	.43
Passage Comprehension	1.08	.06	.31
Dictation	.76	.40	.43
Word Reading Efficiency	.81	.37	.41
Oral Reading Fluency	.17	.30	.36
Spanish studies[b]			
Letter Name Identification[c]	.32	.26	
Letter Sound Identification[c]	.72	.53	
Rapid Letter Naming[c]	.46	.67	
Phonological Awareness Composite[c]	.73	.81	
Word Attack	.85	.45	.54
Letter–Word Identification	.61	.50	.64
Passage Comprehension	.55	.42	.49
Dictation	.39	.45	.65
Word Reading Efficiency	.58	.45	.45
Oral Reading Fluency	.67	.35	.39

[a] Follow-up effect sizes reflect combined initial study and replication studies cohorts; [b] Measures reported match the language of instruction; [c] This measure was not administered in second grade.

The Spanish studies. Just as in English, two consecutive studies were conducted with Spanish-speaking first-grade students who were at risk for reading problems and who were learning to read in their primary language (Spanish). In the initial study, 64 students were assigned randomly to participate in either supplemental instruction ($n = 31$) or the comparison group ($n = 33$) across their first-grade year (Vaughn, Linan-Thompson, et al., 2006). In the replication study, 94 students (42 intervention and 52 comparison) met criterion and participated in the study (Vaughn, Cirino, et al., in press). In the initial study, there were no differences between the treatment and comparison groups in either language on any measure at pretest, but there were significant posttest differences in favor of the treatment group for the following outcomes in Spanish: letter sound identification, phonological awareness, word attack, passage comprehension, and reading fluency. The average effect size on Spanish reading measures was $d = .59$ (see Table 1 for individual effect sizes). However, transfer effect between languages was not evidenced, with an average effect size on English measures of $d = .05$.

In the replication study, there were significant posttest differences in favor of the treatment group for Spanish outcomes in letter sound identification, phonological awareness, and word reading fluency, with an average effect size on reading measures of $d = .49$ (see Table 1 for individual effect sizes). Again, little transfer to reading in English was detected in the replication study, with an average effect size on English reading of $d = .18$.

We assessed students receiving instruction in Spanish again at the end of second grade to determine the long-term impact of the intervention (Vaughn et al., 2007). In second grade, all students received only the school's standard reading program. As observed in English, students who participated in Tier 2 Spanish intervention in first grade maintained superior performance as compared to comparison students. However, in Spanish, the results on reading measures were even more robust, with an average effect size of $d = .52$ (see Table 1 for individual effect sizes). As in English, the only negligible effect size observed was in oral language comprehension, $d = .06$. Transfer from Spanish reading to second-grade English reading demonstrated only a small impact (average English reading $d = .15$).

NATURE OF THE SUPPLEMENTAL INTERVENTIONS (TIER 2)

This section provides a more detailed analysis of the interventions, which was designed to be a comprehensive, integrated intervention for struggling beginning readers. A series of fully specified daily teacher lesson plans addressed development in phonemic awareness, alphabetic knowledge and skills, fluency, vocabulary, and comprehension in both English and Spanish. In addition to these lesson plans, teachers were provided with student activity books, daily reading books using decodable stories, a puppet with a fully articulated mouth, graphophonemic picture cards, "automatic" word cards, a literature selection to be read orally, vocabulary cards, and lesson mastery tracking forms. In English, teachers also received a set of pictures and

short teaching scripts to illustrate specific concepts or vocabulary that were critical to understanding the lesson content. A similar set of materials was created for the Spanish intervention to support vocabulary and concept development in Spanish.

Each proactive reading and lectura proactiva lesson plan was highly detailed, providing exact wording to ensure that teacher language was clear and kept to a minimum. Following these lesson plans, teachers delivered explicit instruction that was designed to assist students in the integrated and fluent use of alphabetic knowledge and comprehension strategies. However, while teachers followed the lesson plans, they also responded to students' learning needs by scaffolding instruction when necessary. Further, in our research, we required teachers to reflect on their instruction through the use of journals and to make adjustments to instruction for individual students based on continuous progress monitoring data. Thus, although lesson plans were prescribed, the way in which lessons were actually delivered incorporated an interaction between the prescribed lesson plans, the teacher's on-the-spot instructional decision making, and minor adjustments made to the lesson plans to focus on a specific target area needed by a particular child in the group.

Because these interventions resulted in improved reading performance among struggling readers in both Spanish and English, we believe that much can be inferred about the nature of the supplemental reading interventions designed to prevent early reading failure with native Spanish-speaking children, regardless of the language of instruction. In terms of the nature of these interventions, there are three important interlaced components: (a) instructional design principles, (b) instructional strand development over time, and (c) instructional delivery techniques.

Instructional Design Principles

The overarching objective in the design of our Tier 2 interventions was to reduce the occurrence of errors through the integration of new learning with previous learning, ongoing review, and opportunities for group and individual responding. The goal was to integrate skills and strategies over time. Thus, the tasks associated with fluent, meaningful reading were carefully analyzed and elements were sequenced into a cumulatively building and carefully integrated set of daily lesson plans. These lessons were constructed so that various content strands (i.e., phonemic awareness, graphophonemic knowledge, word recognition, connected text fluency, vocabulary, and comprehension strategies) were integrated within all lessons. These design principles were derived from the Model of Direct Instruction (Carnine, Silbert, Kame'enui, & Tarver, 2004; Englemann & Carnine, 1982) and were applied to teaching early reading in each language in an identical fashion. We chose this model of instruction because of its longstanding record of success with various populations who are at risk for school failure (Adams & Engelmann, 1996; Borman, Hewes, Overman, & Brown, 2003; Carlson & Francis, 2002; Ligas, 2002). The specific design principles subscribed to in designing each intervention are detailed in Table 2.

Instructional Strands

Applying these instructional design principles to the creation of daily lessons plans required that we integrate instruction across multiple strands, taking into consideration the nature of each language.

Phonemic awareness strand. Phonemic awareness activities in both English and Spanish were included. However, less emphasis was placed in Spanish on phonemic awareness than in English because the structure of words in Spanish is more apparent. The phonemic awareness strand in both languages included two types of activities: phoneme discrimination and phoneme segmentation and blending. Early activities required children to isolate initial sounds in words or to tell if a word started with a particular phoneme. Later activities moved to isolating final phonemes. Phoneme discrimination activities were

Table 2. Instructional design principles for each strand.

Strand	*Design principle*
Phonemic awareness	Graphophonemic correspondences that were to be introduced in the near future were practiced first orally by incorporating them into the phonemic awareness activities. Introduction of a new word type to be sounded out was preceded with auditory practice of words of that type during the phonemic awareness activities.
Orthophonemic knowledge	No more than one graphophonemic correspondence or high-frequency word was introduced in a lesson. Previously mastered graphophonemic correspondence and high-frequency words were reviewed in each lesson. Graphophonemic correspondences used more frequently in words were introduced first. The initial introduction of graphophonemic correspondences and sight words that were auditorially and/or visually similar were kept apart initially and then carefully moved together so ensure discrimination.
Word recognition	Once introduced, graphophonemic correspondences were incorporated into words to be sounded out after 1 day, and then into words found in decodable text 1 day later. The introduction of word types was controlled for difficulty. Across time, word types become cumulatively more advanced. In English, the closed syllable (i.e., consonant-vowel-consonant: CVC) was taught first. Initially, CVC words in which the initial consonant represented a continuant were practiced first. Later, CVC words that started with stops were included. Thus a word like "mat" would precede a word like "hat." In Spanish, this same procedure was adhered to with the two-syllable consonant-vowel, consonant-vowel (CVCV) word type because this word type represents the most frequent word construction in Spanish.
Fluency	Once sounding out was mastered for word recognition, students were scaffolded toward automatic recognition of words. All graphophonemic correspondences, word types, and high-frequency words were integrated into the decodable text. Repeated reading of text was built in to each lesson. Fluency criterion were gradually increased and shared with students.
Comprehension	Comprehension strategies were explicitly taught to students and repeatedly practiced. Only a few strategies were taught.

also used to ensure that children were able to discriminate consonant and vowel phonemes as well as the various vowels from each other. In English, children were taught how to segment one-syllable words into individual phonemes, as well as to recognize words from individually spoken phonemes. In Spanish, this same type of activity was completed with both one-syllable and two-syllable words in which each syllable was comprised of a consonant and a vowel (i.e., CVCV, as in *casa*). Over time, the complexity of words that were included in the segmentation and blending activities increased in complexity. Segmentation activities continued until students were able to segment and blend words with co-articulated consonant blends.

Orthophonemic knowledge strand. Students were taught to map phonemes to graphemes from the first day of instruction, with new phoneme to grapheme correspondences introduced every 2 to 3 days. Before presenting the symbol representing a particular phoneme, teachers manipulated the phoneme orally during segmenting and blending activities in preceding lessons. Once a grapheme–phoneme correspondence was introduced, it was included in daily cumulative review of subsequent grapheme–phoneme correspondences. Students were asked both to say the phoneme represented by each grapheme and to write graphemes as the teacher dictated phonemes.

Word recognition strand. Because the nature of word constructions in English and Spanish is very different, this particular strand had the greatest divergence between the two languages. Thus, each language is discussed separately.

English. The word recognition strand in English included both phonetically regular and phonetically irregular words. In terms of decoding phonetically regular words, children were initially taught to sound out words. Initially, children were given very simple closed-syllable words (i.e., consonant-vowel-consonant: CVC) and extended time to blend the sounds represented by the letters to form words. However, the amount of time allowed to sound out the words was gradually decreased while the complexity of the words was gradually increased (i.e., variant spelling patterns, blends, additional syllable types, multisyllabic words). The goal was to make word reading automatic. Further, as the time for figuring out words decreased, the emphasis on automatic word recognition increased. Additionally, children were required to spell words that were similar in structure to words that they were being asked to read, thus ensuring that children were developing fully specified orthographic representations of various words and word constructions.

As children moved toward decoding unknown words quickly and efficiently, they were also learning to read words representing the six different syllable types of English, although terminology about syllable types was not included. As children demonstrated success reading one syllable type, that syllable type was included in reading multisyllabic words. By the end of the intervention, students were reading and spelling two- and three-syllable words consisting of any combination of the six syllable types.

Another important aspect to the word recognition strand was teaching students to be flexible decoders. Students were taught that sometimes parts of words do not sound out quite right, but that sounding out usually produces a pronunciation that is close enough to figure out the word. High-frequency words that were irregular were presented as tricky words that should be recognized automatically.

Spanish. Because of the syllabic nature of Spanish, teaching students to read syllables quickly was a focus of word recognition from the beginning. Within the first three lessons, students were reading consonant-vowel (CV) type syllables composed of previously taught graphophonemic correspondences. Initially, students sounded out the syllable and then read the syllable as a whole. Within a short time, students were asked to read syllables as a unit rather than phoneme by phoneme. Over time, children were asked to read syllable units at increasingly faster rates, and syllable units began to include three-phoneme syllables. These speeded syllable reading activities were altered daily so that the placement of vowels varied to ensure that students were processing individual phonemes within syllables rather than memorizing a specific pattern. This was done to facilitate later reading in English.

Teaching students to decode multisyllabic words began in the second week of instruction. The basic strategy was to read an unknown multisyllabic word, syllable by syllable, and then put the syllables together to read the whole word. Over time, the amount of time that students were allowed for each step in the process of reading multisyllabic words was reduced until students were decoding unknown words quickly and efficiently. At the same time that students were asked to decode more quickly, the complexity of those words gradually increased in terms of both length (i.e., number of syllables) and complexity of the syllable type (i.e., CVC, CVV, CCV).

Connected text fluency strand. Application of word recognition strategies was practiced through the reading of decodable connected text in both languages. Beginning in the seventh lesson, students read connected text daily. All phonetic elements (and all irregular sight words in English) appearing in the text were taught before students read a particular text selection. As students acquired greater mastery of more and more elements, as well as the ability to decode more difficult words, this text became more and more challenging.

To promote fluency, repeated reading of stories was built into daily lessons, with the goal to increase rate and accuracy by reading the same passage three times. Typically, children read a story in unison on the first reading. On the second reading, children usually read a page or two individually. The third reading was typically read in pairs, with the teacher pairing up with one child and timing that child's reading rate. Each story had a predetermined fluency criterion. Across time, the criterion required increasingly faster reading, even as the text increased in difficulty.

Comprehension strand. Beyond decoding and fluency, a major objective for proactive reading and lectura proactive was for children to read strategically to increase understanding. Thus, before reading a story each day, the teacher engaged in "browsing the story," during which children were asked to look at the pictures in the story and to predict what they thought the story would be about. Teachers then set a purpose for reading, which usually was stated as finding out if the students' predications were true or not. With expository text, teachers activated prior knowledge by asking students to tell what they already knew about the topic and to read to learn more. After reading the story, students then engaged in a number of activities depending on the students' competence and text structure. Initially, children were only asked to tell about what they read. Information in any order was accepted. Over time, children were asked to sequence information until they were able to sequence only the most important information. As children became more advanced, they were taught to identify story grammar elements. When text was expository, children were asked to identify new information learned.

Developing Oral Language

The final component in both English and Spanish was a 10-min storybook routine that was designed to assist students in building and extending vocabulary and in improving their listening comprehension

and oral expression (Hickman, Pollard-Durodola, & Vaughn, 2005). Primarily expository books at a second- to third-grade reading level were selected so that text was at an appropriate level to promote listening comprehension. Books were organized in themes so that vocabulary would be redundant and concepts could be organized, reinforced, and extended. In total, there were eight themes (e.g., bugs), with three or four books that addressed each theme. Books were of a length that they could be broken into passages of approximately 200–250 words (the amount read each day by the teacher). One book was read from and discussed for 3 to 5 days. The entire book was read completely from beginning to end the day after the last passage was read.

Each day, two or three new vocabulary words were taught to the students before the read-aloud. Students were then asked to listen for the "target words" when the story was read. These words were then discussed in context. After the passage was read aloud, students provided an oral retell and dialogued with the teacher about the story using complete sentences and new vocabulary terms.

Inclusion of ESL Techniques

Proactive reading and lectura proactiva incorporate into their basic design many practices that are considered effective with ELLs, including the use of clear and repetitive language, repetitive routines, and gestures, as well as high levels of student teacher interaction and dialogue. To ensure that the students being taught to read in English fully benefited from proactive reading, we also interspersed throughout each lesson a set of language support activities targeting three types of words: (a) directions from the teacher, (b) words describing an instructional concept related to a task, and (c) vocabulary terms found in connected text used for fluency building and comprehension. To explore the meaning of words, intervention teachers provided a target word and asked if students knew the meaning. If students were unable to talk about the word in a meaningful way, then the teacher used the word in a sentence and provided examples of its use using examples from Latino culture when possible. Students were then asked to tell what they knew about the word. The teacher extended meaning based on students' responses. The teacher told the students how the word would be used in the context of the lesson. Students were then asked to give the definition or use the word in a sentence. In addition to providing a definition orally, pictures, gestures, and role play were used to enhance the students' understanding of various words.

Instructional Delivery

Instruction was provided at a quick pace that gave ELLs many opportunities to respond both orally and in writing and to receive immediate feedback. There was ongoing interchange between the instructor and the students. In a typical lesson, students practiced automatic recognition of graphophonemic correspondences, practiced recoding words, read connected text orally, and engaged in dialogue with the teacher about vocabulary and story content. Each of the 50-min lessons was organized around 8 to 11 activities, promoting quick movement from one activity to the next. From day to day, routines and teacher language that were specific to a particular type of content repeated with new content. The overarching teaching routine included the teacher modeling new content, providing guided practice for students, and implementing independent practice. Instructors consistently monitored students' responses, providing positive recognition for correct responses and feedback if an error occurred.

DISCUSSION

The 4 studies we conducted provide an opportunity to empirically examine three commonly held assumptions: (a) What we know about teaching native English speakers who are struggling readers is applicable to native Spanish speakers who are struggling readers, (b) practices advocated for teaching ESL further assist these children to become competent readers, and (c) knowledge gained in one language will transfer to a second language. The studies allow for such examination because the instruction used to facilitate the reading ability of native Spanish-speaking children who were struggling readers included research-derived critical content for teaching reading to struggling English speakers, ESL adaptations designed to assist native Spanish speakers to understand important concepts and information, and oral language development routines that were carefully designed to teach vocabulary and promote oral language. Also, although instruction was delivered in either English or Spanish to match the language of reading instruction selected by the school, we measured learning outcomes in both English and Spanish. Thus, we were able to determine if students transferred knowledge in one language to a second language. In designing instruction in both languages, care was taken to use the same instructional design principles and to replicate teaching routines. Thus, it is possible to describe aspects of instruction that appear to be effective for instruction delivered in either Spanish or English to native Spanish speakers.

Applicability of Reading Instruction

One of the primary questions we addressed was whether or not what we know about teaching reading to struggling native English speakers is applicable to teaching struggling readers who are native Spanish speakers. The answer appears to be yes. In our research, a Tier 2 intervention that had been shown to be effective with struggling native English speakers was also effective with struggling native Spanish speakers who were learning to read in English. Further, the basic instructional delivery system, content, and design were also applicable for providing effective reading instruction in Spanish.

Applicability of Tier 2 Instruction

Outcomes from our research make clear that native Spanish-speaking students who are struggling readers, on average, benefited from participation in Tier 2 supplemental instruction that was provided in addition to core reading instruction in either language. We do not claim to know whether the 50 min of instruction we provided is necessary for all students, or if our group size of 3 to 5 students is the most advantageous. Likewise, we do not know for how many weeks this Tier 2 instruction must be implemented in order to derive the greatest benefit for children. What we can say is that supplemental instruction that is delivered daily by highly trained teachers for 50-min sessions across approximately 25 weeks during the first-grade year resulted in significantly better literacy and language outcomes for ELLs who were learning to read in either English or Spanish than didcore instruction alone. This finding is consistent with outcomes from our research with native English speakers. We speculate that for many native Spanish-speaking students, Tier 2 instruction may prove to be a necessary feature of instruction in order to promote literacy, even when these children are being taught in their native language of Spanish.

Applicability of Instructional Content

Given the positive outcomes that were observed for native Spanish speakers in our studies, it is apparent that categories of early reading content that have been shown to be critical for assisting struggling native English speakers to become competent readers are also effective for promoting reading competence with native Spanish-speaking children (i.e., phonemic awareness, letter knowledge, word recognition, vocabulary, and comprehension). In our research, native Spanish-speaking children benefited from explicit, systematic instruction that shared many of the same elements of effective instruction that was provided to native English speakers, although the way in which this instruction was sequenced, and the elements emphasized, were different based on differences in each language.

To be clear, we are in no way advocating that effective English curricular materials simply be translated into Spanish, or any other language for that matter. For example, in English, we spent considerable time ensuring that children could segment and blend single-syllable CVC words heard auditorially (example: stretch fish. /f/ /I/ /ʃ/. What word did you stretch?). In Spanish, more emphasis was placed on elision activities in which a single phoneme was switched in a syllable (Example: say /m/e/. Now take off the /e/ and add /i/. What syllable now?). Similarly, the order with which grapheme–phoneme correspondences were presented was quite different between the two languages, reflecting which letter sound correspondences occurred more frequently in each language. Thus, the design principle was the same between languages (i.e., teach highest frequency grapheme–phoneme correspondences sooner and less frequent grapheme–phoneme correspondences later), but the way in which the sequence was arranged was quite different.

A major difference between teaching English and Spanish was the need to teach more complex strategies for word recognition in English than in Spanish because English has more orthography to phonology inconsistencies than does Spanish (e.g., silent e rule, vowel teams representing one sound, variant spellings for one sound, and the need to be flexible with slightly irregular words: Ventura, Morais, Pattamadilok, & Kolinsky, 2004). Of course, eventually, children learning to read initially in Spanish will need to be taught the same information about English as well.

Importantly, students being taught in Spanish did benefit from some phonemic awareness work and from being taught to read words grapheme by grapheme—content that sometimes is not embraced for teaching beginning reading in Spanish, but content that we taught with an eye toward students' eventual later transition to English literacy. It is also important to recognize that whereas Spanish is a more transparent language than English in terms of how phonemes consistently map to print, the beginning phase of Spanish is actually somewhat more difficult than English. In Spanish, children must learn to unitize syllable sections very quickly and read multisyllabic words from the beginning. However, once this initial hurdle is mastered, the nature of the structure of words is more consistent, resulting in less phonics content overall to teach. Thus, in our Spanish intervention, all phonics elements were completed easily within 1 year, with the focus of instruction shifting to fluency development, learning new vocabulary, and applying metacognitive strategies to more complex text.

In English, reading multisyllabic words came much later and there was still much more to be learned in terms of phonics elements beyond the first-grade year. During first grade, children were taught to recognize most of the variant spellings for English phonemes, how to recognize when vowels were pronounced short or long, vowel teams, r-controlled vowels, and the schwa sound, but there was still more to be learned. Also in English, students learned to deal with the irregularities of English and to grapple with reading words consisting of any combination of six syllables types.

Although instruction between English and Spanish was different in terms of what was emphasized within phonemic awareness, graphophonemic recognition, and word recognition, instruction was uniform in terms of fluency development work and comprehension strategies. In both interventions, fluency work began with an emphasis on automatic recognition of sounds, reading words as fast as possible, and pushing children to read text as fast as they were capable of reading it. In both languages, children were provided with clear fluency goals and were asked to reread text until these goals were achieved. Fluency goals were gradually increased across time at the same time that text was becoming increasingly more challenging. Similarly, comprehension work in both curriculums was essentially the same. Within both languages, children learned to sequence information, identify new information from information known before reading, identify plot structure using a story map, and retell stories. Of course, in Spanish, children were afforded the opportunities to practice these strategies on more complex text with more involved story lines because they were able to read more complex words in Spanish earlier.

Applicability of ESL Teaching Techniques

Our research demonstrates that ESL teaching techniques can be beneficial for native Spanish speakers who are struggling to learn to read. Although we did not unpack the relative effectiveness of each component of the intervention, practices that are typically recommended for teaching ESL students were incorporated into daily instruction, and this instruction was associated with improved outcomes. Likewise, students responded favorably to the highly interactive, fast-paced instructional sessions in which they demonstrated the skill or strategy being learned or practiced. Downtime between activities was kept to a minimum, behavior management issues were virtually nonexistent, and use of instructional time was maximized. New skills or strategies were explicitly modeled for students, and students were provided with a guided practice phase before being expected to perform any task independently. When students made mistakes or needed extra instruction, it was provided immediately. Teachers provided frequent verbal praise, tracked student mastery overtly, showed delight over even small successes, and established an environment that fostered self-adequacy and self-worth. We should also note that although not all of our teachers shared the children's native language and culture, they all were bilingual and showed respect for and knowledge of the child's native culture. Each teacher was able to make appropriate scaffolds for children, building knowledge from the child's native culture.

Transfer Across Languages

One hypothesis for which our studies provided mixed results was the idea that students would transfer information that they had learned about how to read in one language to the other language. Of course, we only have data on how much transfer occurred across languages at the end of first grade and second grade. In our research, the only transfer observed was for our initial English instruction cohort. This group demonstrated transfer on multiple dimensions of

reading in Spanish at the end of first grade. However, this transfer effect was not sustained to the end of second grade. No transfer effects were observed among the other 3 cohorts.

These findings are consistent with generally accepted patterns of cross-linguistic transfer of metalinguistic knowledge (Cisero & Royer, 1995; Durgunoglu, 2002; Durgunoglu et al., 1993; Leafstedt & Gerber, 2005). Metalinguistic knowledge that is most likely to transfer linguistically across languages is the knowledge of phonological units (e.g., phonemes, syllables.), the syntactic or grammatical structure of written language, print conventions, word recognition and spelling, decontextualized language or ability to define concepts using academic language, knowledge of text genre, and comprehension strategies (e.g., Durgunoglu, 2002). According to Durgunoglu (2002), if language learners know literacy tasks in their native language, then lack of transfer to a second language may be due to low language proficiency in the second language. Thus, it not surprising that we observed little transfer from Spanish to English because students' language proficiency in English was extremely low. Conversely, the transfer we observed in the first cohort of students who were being instructed in English to read in Spanish is logical because these students possessed higher language proficiency in the language to which transfer occurred (i.e., Spanish).

We suspect that this transfer of skills between languages was not replicated with our second cohort of children who were being instructed in English because that group's language proficiency in their native language of Spanish was very low from the outset of the study. However, further research is needed to determine whether initial native language status predicts transfer across languages. Durgunoglu (2002) suggested that lower levels of language proficiency in a child's native language can slow down the transfer of metalinguistic skills between languages. Outcomes from our 4 studies also suggest to us that if transfer is not observed initially, it is not likely to materialize later. Further, the fact that the transfer we observed for our initial English instruction cohort to reading in Spanish was not sustained through second grade, while disappointing, is not surprising. These students all attended a school that embraced a structured English immersion approach. By second grade, nearly all Spanish supports had been removed from instruction. Thus, these children had virtually no opportunities to dialogue or practice reading in their native language while at school; reducing, in our opinion, the likelihood that transfer effects would be maintained. In order to maintain the native language, it appears necessary to include instruction in that language for at least part of the day.

CONCLUSION

In summary, as with all students, the success of ELLs is dependent on effective instruction that focuses on both foundational and cognitively complex skills (García, Wilkinson, & Ortiz, 1995). For native Spanish speakers who are struggling to learn to read, determining how to integrate foundational and cognitively complex skills with the student's language and culture is a challenge. There has been a need to determine (a) what foundation and complex skills these students actually need, (b) how much about teaching native English speakers to read was applicable to native Spanish speakers, and (c) how much of the child's native culture and language must be included in instruction in order to ensure a positive and academically profitable experience for the student. Although our research only begins to address these issues, we believe that we now have some glimmer of understanding of how to best serve native Spanish speakers who struggle to read in first grade.

These studies confirm that there is substantial applicability about what we know from experimental studies on teaching beginning reading to struggling native English speakers to teaching native Spanish speakers, in terms of both instructional content and instructional delivery. Further, these studies support the idea that ESL techniques promote learning among these students. However, it appears that to assume that information learned in one language will transfer automatically to a second language may be naïve. These studies suggest that, at least with native Spanish speakers who are also struggling readers, transfer does not occur readily, and when it does, it is not sustained over time. Clearly, more research is needed to determine what instructional supports are necessary to ensure that transfer across languages does indeed occur. Finally, this work demonstrates that the language of instruction must be considered in designing interventions for native Spanish-speaking ELLs who are struggling readers. This precludes any approach that provides translation as a means of accessing instruction from English to Spanish, at least to teach foundational reading skills. Likewise, our studies demonstrate that native Spanish-speaking children respond positively to working with adults who scaffold instruction, taking into consideration the child's culture.

ACKNOWLEDGMENTS

This research was supported in part by Grant P01 HD39521, which was jointly funded by the National Institute for Child Health and Human Development and the Institute of Education Sciences. The attitudes and opinions expressed in this manuscript are those of the authors and do not necessarily reflect those of the funding agencies. The authors wish to thank their many collaborators and coworkers as well as the students, parents, teachers, and school and district officials who made this research possible.

REFERENCES

Adams, G. L., & Englemann, S. (1996). *Research of direct instruction: 25 years past DISTAR*. Seattle, WA: Educational Achievement Systems.

August, D. E., & Hakuta, K. E. (1997). *Improving schooling for language-minority children: A research agenda*. Washington, DC: National Academy Press.

August, D. E., Kenyon, D., Malabonga, V., Caglarcan, S., & Louguit, M. (2001). *Test of Phonological Processing in Spanish (TOPPS)*. Available at http://www.cal.org/delss/#GRANTS

Bialystok, E. (2002). Acquisition of literacy in bilingual children: A framework for research. *Language Learning, 52,* 159–199.

Borman, G., Hewes, G. M., Overman, L. T., & Brown, S. (2003). Comprehensive school reform and achievement: A meta-analysis. *Review of Educational Research, 73*(2), 125–230.

Carlson, C. D., & Francis, D. (2002). Increasing the reading achievement of at-risk children through direct instruction: Evaluation of the Rodeo Institute for Teacher Excellence (RITE). *Journal of Education for Students Placed at Risk, 7,* 141–166.

Carnine, D. W., Silbert, J., Kame'enui, E. J., & Tarver, S. (2004). *Direct instruction reading* (4th ed.). Upper Saddle River, NJ: Prentice Hall.

Cavanaugh, C. L., Kim, A., Wanzek, J., & Vaughn, S. (in press). Kindergarten reading intervention for at-risk students: Twenty years of research. *Learning Disabilities: A Contemporary Journal*.

Cisero, C., & Royer, J. (1995). The development and cross-linguistic transfer of phonological awareness. *Contemporary Educational Psychology, 20,* 275–303.

Defior, S., & Tudela, P. (1994). Effects of phonological training on reading and writing acquisition. *Reading and Writing: An Interdisciplinary Journal, 6,* 299–320.

Denton, C. A., Anthony, J. L., Parker, R., & Hasbrouck, J. E. (2004). Effects of two tutoring programs on the English reading development of Spanish–English bilingual students. *The Elementary School Journal, 104,* 289–305.

Denton, C. A., & Mathes, P. G. (2003). Intervention for struggling readers: Possibilities and challenges. In B. R. Foorman (Ed.), *Preventing and remediating reading difficulties* (pp. 229–252). Baltimore: York Press.

Denton, K., West, J., & Walston, J. (2003). *The condition of education special analyses: Reading–Young children's achievement and classroom experiences* (Pub. No. 2003–70). Available at http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2003070.

Durgunoglu, A. (2002). Cross-linguistic transfer in literacy development and implications for language learners. *Annals of Dyslexia, 52,* 189–204.

Durgunoglu, A., Nagy, W. E., & Hancin-Bhatt, B. J. (1993). Cross-language transfer of phonological awareness. *Journal of Educational Psychology, 85,* 453–465.

Ediger, A. (2000). Teaching children literacy skills in a second language. In M. Celce Murcia (Ed.), *Teaching English as a second or foreign language* (pp. 153–169). Boston: Heinle & Heinle.

Englemann, S., & Carnine, D. (1982). *Theory of instruction: Principles and applications*. New York: Irvington.

Foorman, B. R., & Torgesen, J. (2001). Critical elements of classroom and small-group instruction promote reading success in all children. *Learning Disabilities Research and Practice, 16,* 203–212.

Garcia, G. E. (2000). Bilingual children's reading. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. III, pp. 813–834). Mahwah, NJ: Erlbaum.

García, S., Wilkinson, C., & Ortiz, A. (1995). Enhancing achievement for language minority students. *Education and Urban Society, 27,* 441–462.

Gersten, R., & Baker, S. (2000). What we know about effective instructional practices for English-language learners. *Exceptional Children, 66,* 454–470.

Gersten, R., & Baker, S. (2003). English-language learners with leaning disabilities. In H. L. Swanson & K. R. Harris (Eds.), *Handbook of learning disabilities* (pp. 94–109). New York: Guilford Press.

Gersten, R., & Geva, E. (2003). Teaching reading to early language learners. *Educational Leadership, 60*(7), 44–50.

Goldenberg, C. (1994). Promoting early literacy development among Spanish-speaking children: Lessons from two studies. In E. H. Hiebert & B. M. Taylor (Eds.), *Getting ready right from the start* (pp. 171–199). Boston: Allyn & Bacon.

Goldenberg, C., Reese, L., & Gallimore, R. (1992). Effects of literacy materials from school on Latino children's home experiences and early reading achievement. *American Journal of Education, 100,* 497–536.

Good, R. H., Bank, N., & Watson, J. M. (Eds.). (2003). *Indicadores Dinámicos del Exito en la Lectura*. Eugene, OR: Institute for the Development of Educational Achievement.

Good, R. H., & Kaminski, R. A. (Eds.). (2002). *Dynamic Indicators of Basic Early Literacy Skills* (6th ed.). Eugene, OR: Institute for the Development of Educational Achievement.

Gunn, B., Biglan, A., Smolkowski, K., & Ary, D. (2000). The efficacy of supplemental instruction in decoding skills for Hispanic and non-Hispanic students in early elementary school. *The Journal of Special Education, 34*(2), 90–103.

Hakuta, K., Butler, Y. G., & Witt, D. (2000). *How long does it take English learners to attain proficiency?* The University of California Linguistic Minority Research Institute.\ Policy Report 2000-1. Available at http://www.lmri.ucsb.edu/publications/00_hakuta.pdf.

Hickman, P., Pollard-Durodola, S., & Vaughn, S. (2005). Storybook reading: Improving vocabulary and comprehension for English-language learners. *Reading Teacher, 57,* 720–730.

Kindler, A. L. (2002). *Survey of the states' LEP students and available educational programs and services: 2000–2001 Summary report*. Washington, DC: Office of English.

Leafstedt, J. M., & Gerber, M. M. (2005). Crossover of phonological processing skills: A study of Spanish-speaking students in two instructional settings. *Remedial and Special Education, 26,* 226–235.

Ligas, M. (2002). Evaluation of Broward County alliance of quality schools project. *Journal of Education for Students Placed at Risk, 7*(2), 117–139.

Mathes, P. G., Denton, C. A., Fletcher, J. M., Anthony, J., Francis, D. J., & Schatschneider, C. (2005). The effects of theoretically different instruction and student characteristics on the skills of struggling readers. *Reading Research Quarterly, 40*(2), 148–182.

Mathes, P. G., & Denton, C. D. (2002). The prevention and identification of reading disability. *Seminars in Pediatric Neurology, 9,* 185–191.

Mathes, P. G., Linan-Thompson, S., Pollard-Duradola, S. D., Hagan, E. C., & Vaughn, S. (2001). *Lectura proactive para principiantes: Intensive small group instruction for Spanish speaking readers*. (Available from Patricia. G. Mathes, Institute for Reading research, Southern Methodist University, PO Box 850381, Dallas, TX 75275.).

Mathes, P. G., Torgesen, J. K., Wahl, M., Menchetti, J. C., & Grek, M. L. (1999). *Proactive beginning reading: Intensive small group instruction for struggling readers*. (Available from Patricia. G. Mathes, Institute for Reading Research, Southern Methodist University, P.O. Box 850381, Dallas, TX 75275.).

Muñiz-Swicegood, M. (1994). The effects of meta-cognitive reading strategy training on the reading performance and student reading analysis strategies of third grade bilingual students. *Bilingual Research Journal, 18*(102), 83–97.

National Reading Panel. (2000). *Report of the National Reading Panel: Teaching children to read: An evidenced-based assessment of the scientific research literature on reading and its implications for reading instruction* (NIH Publication No. 00-4769). Washington, DC: U.S. Government Printing Office.

Padilla, A. M., Fairchild, H. H., & Valadez, C. M. (1990). *Bilingual education: Issues and strategies*. Newbury Park, CA: Sage.

Ramirez, J. D., Yuen, S., & Ramey, D. (1991). *Longitudinal study of structured English immersion strategy, early-exit and late-exit transitional bilingual education programs for language-minority children, Vol. 1–2*. San Mateo, CA: Aguirre International.

Sanchez, E., & Rueda, M. I. (1991). Segmental awareness and dyslexia: Is it possible to learn to segment well and yet continue to read and write poorly? *Reading and Writing: An Interdisciplinary Journal, 3,* 11–18.

Simmons, D. C., Kame'enui, E. J., Stoolmiller, M., Coyne, M. D., & Harn, B. (2003). Accelerating growth and maintaining proficiency: A two-year intervention study of kindergarten and first-grade children at-risk for reading difficulties. In B. R. Foorman (Ed.), *Preventing and remediating reading difficulties: Bringing science to scale* (pp. 197–228). Baltimore: York Press.

Snow, C. E., Burns, M. S., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.

Stuart, M. (1999). Getting ready for reading: Early phoneme awareness and phonics teaching improves reading and spelling in inner-city second language learners. *British Journal of Educational Psychology, 69,* 587–605.

Swanson, H. L., Hoskyn, M., & Lee, C. (1999). *Interventions for students with learning disabilities: A meta-analysis of treatment outcomes*. New York: Guilford Press.

Vaughn, S., Cirino, P. T., Linan-Thompson, S., Mathes, P. G., Carlson, C. D., Cárdenas-Hagan, E., et al. (in press). Effectiveness of a Spanish intervention and an English intervention for English language learners at risk for reading problems. *American Educational Research Journal*.

Vaughn, S., Gersten, R., & Chard, D. J. (2000). The underlying message in LD intervention research: Findings from research syntheses. *Exceptional Children, 67*(1), 99–114.

Vaughn, S., Linan-Thompson, S., & Hickman, P. (2003). Response to instruction as a means of identifying students with reading/learning disabilities. *Exceptional Children, 69,* 391–409.

Vaughn, S., Linan-Thompson, S., Mathes, P. G., Cirino, P., Carlson, C., Francis, D., et al. (2005). Effectiveness of Spanish intervention for 1st grade English language learners at risk for reading difficulties. *Journal of Learning Disabilities, 39,* 56–73.

Vaughn, S., Linan-Thompson, S., Pollard-Durodola, S. D., Mathes, P. G., & Cárdenas-Hagan, E. (2006). Effective intervention for English language learners (Spanish–English) at risk for reading difficulties. In D. K. Dickinson & S. B. Neuman (Eds.), *Handbook of early literacy research* (Vol. 2, pp. 185–197). New York: Guilford Press.

Vaughn, S., Linan-Thompson, S., Mathes, P. G., Pollard-Durodola, S. D., Cárdenas-Hagan, E., Cirino, P. T., et al. (2007). *One year follow-up outcomes of Spanish and English interventions for English language learners at risk for reading problems*. Manuscript in preparation.

Vaughn, S., Mathes, P., Linan-Thompson, S., & Francis, D. J. (2005). Teaching English language learners at risk for reading disabilities to read: Putting research into practice. *Learning Disabilities: Research & Practice, 20,* 58–67.

Vaughn, S., Mathes, P. G., Linan-Thompson, S., Cirino, P. T., Carlson, C. D., Pollard-Durodola, S. D., et al. (in press). First-grade English language learners at-risk for reading problems: Effectiveness of an English intervention. *Elementary School Journal*.

Vellutino, F. R., Scanlon, D. M., Sipay, E. R., Small, S. G., Pratt, A., Chen, R., et al. (1996). Cognitive profiles of difficult-to-remediate and readily remediated poor readers: Early intervention as a vehicle for distinguishing between cognitive and experiential deficits as basic causes of specific reading disability. *Journal of Educational Psychology, 88,* 601–638.

Ventura, P., Morais, J., Pattamadilok, C., & Kolinsky, R. (2004). The locus of orthographic consistency effect in auditory word recognition. *Language and Cognitive Processes, 19*(1), 57–95.

Wagner, R. K., Torgesen, J. K., & Rashotte, C. A. (1999). *Comprehensive Test of Phonological Processing*. Austin, TX: Pro-Ed.

Woodcock, R. W. (1991). *Woodcock Language Proficiency Battery—Revised*. Itasca, IL: Riverside.

Woodcock, R. W., & Munoz-Sandoval, A. F. (1995). *Woodcock-Munoz Language—Revised*. Itasca, IL: Riverside.

Received November 14, 2005
Revision received April 26, 2006
Accepted October 5, 2006
DOI: 10.1044/0161-1461(2007/027)

Contact author: Patricia G. Mathes, Institute for Reading Research, Southern Methodist University, P.O. Box 750381, Dallas, TX 75275. E-mail: pmathes@smu.edu.