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Does Supplemental Instruction Support the Transition From Spanish to English Reading Instruction for First-Grade English Learners at Risk of Reading Difficulties?

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Abstract

This study examines the effect of 30 min of small group explicit instruction on reading outcomes for first-grade Spanish-speaking English learners (ELs) at risk of reading difficulties. Participants were 78 ELs from seven schools who were receiving Spanish only, or Spanish and English, whole group reading instruction in first grade. Students were rank-ordered within schools and then randomly assigned to a treatment condition (n = 39) or a comparison condition (n = 39). Students in the treatment condition received instruction on transition elements that supported their transfer of skills from Spanish to English. Students in the comparison condition received Business as Usual instruction from a variety of commercially available programs. Findings indicated that ELs in both conditions made significant gains from pretest to posttest on all reading outcomes even though instruction in the treatment condition focused significantly more on higher order skills (i.e., vocabulary, comprehension, and transition elements) whereas instruction in the comparison condition focused significantly more on lower order skills (i.e., phonics, word work, and sentence reading). Implications for practice and future research are discussed.

Keywords

bilingualism, reading intervention, English learners, beginning reading, transition lessons

Substantial evidence exists that providing supplemental instruction in small groups to students at risk of reading failure in the early grades reduces future reading difficulties and disabilities (Foorman & Moats, 2004; National Reading Panel, 2000; Snow, Burns, & Griffin, 1998; Vaughn & Linan-Thompson, 2003). Specifically, interventions that include the following components are associated with improved outcomes in phonological awareness, decoding, fluency, vocabulary, and reading comprehension: (a) explicit instruction in core reading competencies, (b) controlling for task difficulty through systematic scaffolding, (c) teaching students in small groups of four to six, (d) teacher modeling, and (e) providing ongoing and systematic feedback (Foorman & Moats, 2004; Gersten et al., 2007; Lyon, Fletcher, Fuchs, & Chhabra, 2006; Vaughn, Gersten, & Chard, 2000).

Although less evidence exists on the effects of supplemental instruction for English learners (ELs) at risk of learning disabilities, research indicates that ELs and native English speakers (ES) follow similar paths toward early literacy development (Gersten et al., 2007; Gunn, Smolkowski, Biglan, Black, & Blair, 2005; Vaughn, Mathes, et al., 2006). Moreover, ELs can learn foundational reading skills such as phonemic awareness and word identification skills in English at the same rate or faster than native ES using the same English curricula (or with minimal adaptations) following an explicit instruction approach (D. L. Baker, Baker, Katz, & Otterstedt, 2009; Gersten & Geva, 2003; Lesaux & Siegel, 2003).

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For example, three experimental studies, conducted with ELs at risk of reading difficulties in first grade where evidence-based commercially available supplemental programs in English were used in the intervention, showed a significant increase in ELs' word reading skills and reading comprehension compared with ELs who received the Business as Usual (BAU) intervention provided by the school (Gunn, Biglan, Smolkowski, & Ary, 2000; Vaughn, Cirino, et al., 2006; Vaughn, Mathes, et al., 2006). In all three studies, interventions were delivered in small groups and for an extended period of time (i.e., for more than 8 weeks, at least 15 min 3 days per week or more in groups of four to six ELs per group). In the Gunn et al. (2000) study, researchers used Reading Mastery (Engelmann & Bruner, 1995), which is a highly systematic and explicit program. ELs in the treatment condition scored significantly higher on measures of reading fluency, letter-word identification, and word attack than students who did not receive the intervention. These skills were sustained a year later (Gunn et al., 2005), and ELs who did not speak English at the onset of the study profited as much from the intervention as ELs who spoke English at pretest. Moreover, findings indicated that students who began the intervention in the later grades (i.e., in Grades 2 and 3) responded to the intervention as well as students who started the intervention in the earlier grades (i.e., in kindergarten and first grade).

The two studies conducted by Vaughn et al. (Vaughn, Cirino, et al., 2006; Vaughn, Mathes, et al., 2006) used Proactive Reading (Mathes, Torgesen, Wahl, Menchetti, & Grek, 1999) with modifications to include vocabulary and language development through story retells as well as embedded English as a Second Language (ESL) supports. Findings indicated that first-grade ELs at risk of reading difficulties in the treatment condition outperformed students in the BAU in phonemic awareness, word attack, and passage comprehension outcomes. Effect sizes (*ES*s, Hedges "*g*") in the Vaughn, Cirino, et al. (2006) study were 0.38 on phonemic awareness, 0.41 on word reading fluency, 0.17 on picture vocabulary, and 0.06 on passage comprehension favoring the treatment group. Although, the magnitude of the *ES*s were in the small to moderate range, none of them were statistically significant. In the Vaughn, Mathes, et al. (2006) study, the *ES*s were 1.24 on phonemic awareness, 0.69 on word attack, 0.09 on picture vocabulary, and 0.83 on reading comprehension. The *ES*s on phonemic awareness and reading comprehension were statistically significant (Richards-Tutor, Baker, Gersten, Baker, & Smith, 2015).

These three studies were conducted in the context of students receiving reading instruction mainly in English with occasional Spanish support, and all three studies showed benefits for ELs in the intervention group, particularly in beginning reading skills that improve word reading. However, only the Vaughn, Mathes, et al. (2006) study indicated significant improvements in EL vocabulary and reading comprehension favoring the treatment group. In the Gunn et al. (2000) study, little emphasis was placed on teaching and assessing vocabulary and reading comprehension. Thus, we do not know if the intervention had an effect on these reading components. Both Vaughn et al. (Vaughn, Cirino, et al., 2006; Vaughn, Mathes, et al., 2006) studies included at least 10 min of language and vocabulary activities. These activities included the teaching of two to three vocabulary words each day that appeared in the text being read. Teachers asked questions about the vocabulary and provided opportunities for students to engage in a dialogue about the text using complete sentences and the new vocabulary. According to the researchers (Vaughn, Cirino, et al., 2006), the differences in *ES*s between the two studies (i.e., Study A and Study C) might be explained by the fact that ELs in the Vaughn, Cirino, et al. (2006) study had lower English oracy and literacy skills in the beginning of the intervention compared with ELs in the Vaughn, Mathes, et al. (2006) study.

The purpose of the current study was to examine the impact of an English language intervention in first grade, developed for Spanish-speaking ELs at risk of reading difficulties that were receiving bilingual reading instruction as a whole group (i.e., Tier 1). The reason for providing the reading intervention in English instead of Spanish was to support the transition from the bilingual reading instruction provided in first grade to the English only reading instruction that was going to be provided in second grade. In the next section, we discuss the evidence that supports the role of native language reading instruction in the early grades, and the reason the transition lessons in English were developed and studied.

Role of the Native Language

Substantial evidence suggests that Spanish-speaking ELs attending bilingual programs appear to perform as well or better on measures in English as Spanish-speaking ELs attending English only programs (Francis, Lesaux, & August, 2006; Goldenberg, 2011). Thus, bilingual instruction appears to be a viable option for students whose native language is not English, and who attend schools prepared to provide strong programs involving native language instruction (D. L. Baker et al., 2012; Ramirez, Pasta, Yuen, Billings, & Ramey 1991; Slavin, Madden, Calderon, Chamberlain, & Hennessy, 2011). For example, Ramirez et al. (1991) found that Spanish-speaking ELs taught first to read in Spanish made greater gains in English on English reading outcomes than ELs in English immersion programs. D. L. Baker et al. (2012) found that ELs attending a paired bilingual program in Spanish and in English from K-3 significantly outperformed ELs attending English only programs on English oral reading fluency (*ES*s [*d*] = 0.33–0.53). In this same

study, ELs at risk of reading difficulties in English who attended the paired bilingual program, scored significantly higher on measures of English reading comprehension at the end of second grade than ELs at risk of reading difficulties attending an English only program ($d = 0.51$). The amount of time ELs at risk spent on interventions between the treatment and comparison groups was the same. Slavin et al. (2011) found that Spanish-speaking ELs attending transition programs performed as well on English reading outcomes as students in English immersion programs by the end of fourth grade, even though the amount of English instructional time across the years was lower in the transition programs compared with the amount of English instructional time in the English immersion programs.

Independent of the type of bilingual program students attend, there is still the question of how to best transition students from their native reading instruction to English reading instruction. This is particularly relevant for ELs at risk of reading difficulties because they might have difficulty transferring their relatively weak native literacy skills to English. For example, Cummins' (1979) threshold hypothesis states that students who achieve a certain proficiency level in their native language perform better in English than students who are below that threshold in their native language. Given that schools sometimes lack the resources and staff to provide supplemental instruction in the native language to struggling readers, the tendency has been to transition students to English only instruction after a year, or another predetermined amount of time rather than waiting until students have acquired sufficient native language literacy skills to benefit from bilingualism as Cummins' theory predicts. Moreover, some studies (Vaughn, Linan-Thompson, et al., 2006; Vaughn, Mathes, Linan-Thompson, & Francis, 2005) that have examined the effect of supplemental reading instruction in Spanish for ELs who were struggling to read in Spanish indicate that although students significantly increased their Spanish reading skills with the additional support, these skills did not appear to transfer naturally to English reading skills.

Thus, many questions remain about how to foster the transfer from Spanish reading skills to English reading skills. For example, in the Cirino et al. (2009) follow-up study on teaching reading skills in Spanish in first grade, the only skill that appeared to transfer from Spanish to English was letter name knowledge. In other studies conducted with Spanish-speaking students learning to read in Spanish in first grade, the findings have indicated that student oral reading fluency and vocabulary in Spanish do not explain significant variance in oral reading fluency, reading comprehension, and vocabulary in English even after taking English language proficiency (ELP) and English reading skills into account (see D. L. Baker, Park, & Baker, 2013; Cena et al., 2013; Manis & Lindsey, 2011). Thus, it appears that providing native language support to struggling ELs might help them improve their native language reading skills as evidenced by the Vaughn et al. (Vaughn et al., 2005; Vaughn, Cirino, et al., 2006; Vaughn, Linan-Thompson, et al., 2006) studies, but these reading improvements in their native language do not consistently transfer to improvements in ELs English reading skills.

Role of ELP

Whether ELs attend an English only program, a transition program, or a paired bilingual program, in U.S. contexts ELs require some level of support in English language development, given that English is not their native language. Although earlier studies have indicated that ELP does not appear to be necessary for students to acquire phonological awareness and decoding skills (D. L. Baker, 2008; Gersten et al., 2007), the available evidence suggests that teaching ELs code-based skills in the early grades so they acquire word automaticity, but neglecting intensive instruction in language development, limits how well students will do on outcomes related to comprehension and vocabulary at later points in time. For example, Kieffer (2008) found that students who entered kindergarten with lower levels of ELP were more likely to struggle to develop adequate reading comprehension skills throughout elementary school compared with ELs who started kindergarten with higher levels of ELP.

In a longitudinal study conducted in Canada with second- to fifth-grade ELs, Farnia and Geva (2011) found that after several years in the school system, ELs continued to lag behind their monolingual counterparts on complex language and reading comprehension tasks that required broad background knowledge and more advanced language proficiency skills. This performance pattern was robust even when controlling for word-level reading skills, reading fluency, and cognitive component skills, further substantiating the importance of ELP in the development of reading comprehension while students are also learning code-based skills.

Confirming the importance of the association between language proficiency and reading skills early in school, a study by D. L. Baker et al. (2013) indicated that there was a significant interaction between ELP and Spanish and English language literacy in the beginning of first grade, in the prediction of English reading comprehension at the end of second grade. This study also indicated that the level of native language literacy suggested by Cummins' (1979) threshold-level hypothesis as predictive of second language acquisition, might not act as a particularly strong protective factor in ensuring English reading acquisition in the later grades. In other words, even highly effective reading instruction in the native language will not be sufficient to meet the English literacy and language proficiency needs of ELs suggesting that ELs need instructional time each day devoted specifically to academic language development in

Table 1. Frequencies and Percentages for School Demographics for Each Group (Treatment and Comparison Condition).

Demographics	Enrollment	Percent of EL	Percent of free or reduced lunch	Treatment (n = 39)		Comparison (n = 39)	
				n	%	*n*	%
School							
A	432	27	44	4	10.3	4	10.3
B	471	24	46	6	15.4	6	15.4
C	592	22	47	8	20.5	8	20.5
D	555	41	48	4	10.3	3	7.7
E	584	34	53	5	12.8	6	15.4
F	236	23	39	4	10.3	4	10.3
G	481	30	63	8	20.5	8	20.5

Note. EL = English language learners.

English (S. Baker et al., 2014; Saunders, & Goldenberg, 2010). Neglecting English academic language development can delay the opportunities ELs have to build vocabulary knowledge and develop their syntactic and semantic awareness.

Thus, the current study aims to examine the effects of transition lessons in English on ELs reading outcomes in English for students receiving either Spanish only or Spanish and English reading instruction in kindergarten and first grade. A fundamental component of the transition lessons are the development of academic language defined as word knowledge deemed necessary for understanding teacher instruction and student texts (Baumann & Graves, 2010). Specifically, we attempted to answer the following research question: Do first-grade Spanish-speaking ELs at risk of reading difficulties who participate in a transition lesson intervention outperform first-grade Spanish-speaking ELs at risk who participate in BAU interventions provided by the school on measures of word reading, passage reading, vocabulary, and listening comprehension?

We hypothesized that students in the treatment condition (i.e., transition lessons) would show larger gains than students in the active comparison condition (i.e., BAU intervention) on the alphabetic understanding, word and sentence reading, oral reading fluency, vocabulary, and comprehension. We expected the effect to be particularly apparent on the vocabulary and comprehension measures given that more time was spent on these higher order skills.

Method

Research Design

This study was part of a large longitudinal randomized control trial designed to enhance Tier 1 instruction in Spanish in first grade, and in English in second grade, for Spanish-speaking ELs attending schools in the Pacific Northwest and in Texas. The current study was conducted in the treatment schools in the Pacific Northwest. To recruit schools for this study, we presented school administrators with an overview of the transition intervention including goals and procedures of the project. Of the eight treatment schools in the larger study, seven agreed to participate in the current study.

To select students eligible to participate, we first identified students who were below benchmark performance targets in pseudoword reading and oral reading fluency in the middle of first grade. We decided to use the middle of first-grade benchmarks to determine low performance because it was the closest score prior to the beginning of the intervention. Frequently, ELs in first grade who appear to start below benchmark in the beginning of first grade tend to improve their skills rather quickly after extensive instruction (Al Otaiba et al., 2009). Thus, students who are below benchmark in the middle of first grade are more likely to be at risk of a reading disability than students who are below benchmark in the beginning of first grade. Next, we rank-ordered all students who were below this benchmark within schools using their fall SAT-10 Word Reading (Harcourt Brace Educational Measurement, 2003) subtest scores. The SAT-10 scores appear to be the most reliable indicators of students' initial reading level (S. K. Baker et al., 2008). Adjacent students were then randomly assigned within schools to either the treatment condition (n = 39) or to the comparison condition (n = 39).

Participants

Schools. All seven schools qualified for Title I services and had similar types of students, based on commonly used demographics. Demographic information on participating schools is presented in Table 1.

Teachers. Three certified teachers and 11 instructional assistants, who were already working in the schools delivering support to struggling ELs, provided the small group

lessons in the treatment and comparison conditions. These interventionists were recruited and assigned to condition by school administrators with feedback from the research team. Teachers remained in their assigned condition during the duration of the study. All were bilingual, and they all had, on average, 11 years of experience teaching.

Students. All student participants were of Hispanic origin and all were Spanish native speakers as determined by a home survey filled out by parents. The average age on entry to first grade was 6.5 years and 42% of the sample was female. All students qualified for Title 1 services.

Instructional Setting

In three schools, the intervention was implemented in an after-school program, and in the other four schools, the intervention was provided during small group instruction. Instruction in treatment and comparison conditions lasted 30 min per day for 60 days, for a total of 1,800 min of intervention. During this time, all students remained in the larger study in which they received, on average, 45 to 140 min of Spanish reading instruction each day. In four of the seven schools, reading instruction was provided only in Spanish during Tier 1. In the other three schools, some reading instruction in English was also provided during Tier 1. Participants in this study in both, treatment and comparison conditions, received exactly the same amount of reading instruction per day.

Treatment condition. Students in the treatment condition received the additional Tier 2 instruction, which we call the *Transition Lessons* in small groups. These lessons consisted of a set of 12 units with five lessons each delivered for 30 min per day, 5 days per week for a total of 12 weeks. Each lesson was comprised of two sections designed to develop (a) student decoding skills including phonemic awareness, letter sound knowledge, and word and sentence reading and (b) ELP. The ELP section focused on building student academic language, content vocabulary, and comprehension strategies centered on a read-aloud story (see a more detailed description of the ELP section below). The transition lessons were scripted and followed principles of effective instructional design such as (a) explicitly modeling the use of learning strategies and new skills, (b) controlling task difficulty by scaffolding instruction, (c) providing multiple opportunities for students to respond in groups and individually, and (d) providing ongoing corrective feedback (Coyne, Kame'enui, & Carnine, 2011).

Moreover, one of the key purposes of the transition lessons was to make explicit to students which language features were transferable from Spanish to English and which were non-transferable. For example, transferable features include the majority of the consonant letter sounds (e.g., the letter "m" sounds the same in English and in Spanish). Non-transferable skills include specific differences in the vowel sounds (e.g., in Spanish the vowel "e" is pronounced as /e/ as in met, but in English this letter has four different sounds, and seven different spelling forms as in elephant, cream, bee, be, evening, fern, and shrew), and different pronunciations of consonants such as the /v/ sound in English which is pronounced as a /b/ in most Spanish-speaking countries. In addition, the lessons were designed to provide ELs with the necessary scaffolding to understand the instructional terminology relevant to the skills and literacy components covered in the lesson. For example, as part of the phonemic awareness instruction, students were taught that the word in English for "sonido" was "sound."

Instructional scope and sequence of the transition lessons. The instructional approach remained consistent throughout and across all 12 units, although each daily lesson template was designed to enhance previously learned skills, and it focused on a different skill or concept.

Description of the decoding section. The decoding section consisted of five components, phonemic awareness, phonics, word reading, vocabulary, and sentence reading. Each component followed a specific 5-day plan that started with a phonemic awareness activity and ended with either a word reading or a sentence reading activity, which also included comprehension questions about the sentence students read.

Description of the ELP section. This section was organized by strategies and skills a reader uses before, during, and after reading a story. There were two read-aloud stories per week. Days 1 and 2 were devoted to the first story and Days 3, 4, and 5 were devoted to the second story. The stories were developed to provide a rich context to build vocabulary knowledge and academic language but also provided an opportunity for students to practice reading decodable words. Therefore, the read-aloud text included targeted vocabulary, academic and story content, as well as decodable words containing the spelling patterns taught during the decoding section. In the teacher script, the different types of words (e.g., targeted vocabulary, academic language, and decodable words) were identified through italics and bold font.

For example, during the explicit vocabulary and comprehension instruction, students were taught three different types of words: targeted vocabulary such as *favorite, angry*, and *last*; academic vocabulary such as *noun*, *adjective*, and *describe*; and decodable words such as *vet*, *mask*, and *mat*. In the teacher script, the different types of words were identified through italics and bold font. Teachers were provided visual aids such as pictures and word cards to teach vocabulary. Comprehension cards and scripted comprehension questions including recommended feedback were provided.

In addition, in the student copy of the text, the decodable words were highlighted to prompt the student to read the words on their own. Of the read-aloud stories, five were fiction texts and 19 were nonfiction texts. All lessons in the read-aloud section followed the same format with only the content changing across lessons.

Teacher training on the transition lessons. Teachers were trained on the implementation of the transition lessons prior to the beginning of the intervention. The training lasted 1 day for a total of 7 hr. The trainer was a member of the research team with extensive experience in providing professional development to teachers. The focus of the teacher training was in the following areas: (a) understanding the key features and design of the transition lessons, (b) enhancing instructional effectiveness through lesson pacing, and (c) learning about explicit instruction to maximize student success. Teachers were first introduced to the lesson content and the structure of the phonics and read-aloud lessons. Next, they observed a model lesson and then practiced each of the components of the lessons. The training also emphasized the importance of teaching vocabulary and academic language to ELs.

Comparison condition instruction. Teachers in the comparison condition implemented the BAU intervention for struggling ELs. This instruction varied across districts. For example, in the school district that included Schools A, B, and C, teachers used a variety of instructional teaching strategies from their Houghton Mifflin core reading curriculum and supplemental materials for English language learners such as leveled reading books to build vocabulary, reinforce comprehension strategies, and teach word-attack skills. Leveled books are a series of short paperbacks that have been assigned a reading level according to the number of words and the number of new words introduced. As part of the core reading program, they are intended to be used to reinforce vocabulary and comprehension strategies during small-group instruction (Fountas & Pinnell, 1996).

In the school district that included schools D and E, teachers used the intervention program, Fast Track Phonics (Wiley, 2001) that is a highly visual activities program designed for students who are learning to read English. Each unit contains carefully controlled high-frequency words embedded in the context of simple, decodable sentences, with clear, colorful illustrations to bolster student comprehension and self-confidence. Instructional features of the program include activities that highlight vowels, blends, diagraphs and diphthongs in words, and opportunities for students to build fluency with reading words, sentences, and decodable text.

At School F, the teacher used the program DISTAR (Adams & Engelmann, 1996). The DISTAR program is a direct instruction reading program that incorporates the following features: frequent student response, immediate teacher feedback, and error correction. The DISTAR program provides opportunities for students to learn letter patterns through word and sentence reading practice. In addition, the program combines oral language development with vocabulary and grammar instruction.

At School G, the teacher implemented the Harcourt intervention program (*Trophies*, 2005). The Harcourt intervention includes a guide that serves as a supplement to the Harcourt core-reading program. The guide includes lessons that reinforce content in the areas of phonemic awareness, phonics, fluency, vocabulary, and comprehension. All teachers in the comparison condition had received professional development from the district on the implementation of the supplemental programs used in their schools.

Fidelity and feasibility of implementation. We obtained an index of implementation fidelity in both the treatment and the comparison conditions using an observation instrument that was adapted from an observation tool used in other studies (D. L. Baker & Kosty, 2012). The first half of the observation tool included a checklist of specific teacher behaviors such as delivering explicit instruction, giving opportunities for student practice, and providing feedback to students. Each teaching behavior was rated on a 4-point Likert-type scale based on the degree of implementation (i.e., consistently, sometimes, rarely, never). The second half of the observation form was used to document the components of literacy (i.e., phonemic awareness, phonics, sentence reading, vocabulary, comprehension) addressed in the lesson. We also recorded the number of minutes devoted to each component of reading, and collected detailed notes on instructional practices and activities implemented. Twelve out of 14 teachers and interventionists (six in the treatment condition, and six in the comparison condition) were observed twice by a member of the research team over the course of the 12 weeks.

After the observations in the treatment condition, coaching and feedback was provided. The coaching sessions focused on reviewing and practicing instructional procedures. At the completion of the study, teachers and instructional assistants in the treatment condition completed a feasibility survey. Items on the survey included teachers' ease of use of the transition program, teachers' opinion about the structure of the lessons, and teachers' perception of the alignment of the transition lessons with their core reading program.

Measures

We used the following measures to screen and assess the impact of the intervention on student reading outcomes.

Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Nonsense Word Fluency (NWF; Good &

Kaminski, 2002) is a 1-min measure of decoding. Students are presented with a list of randomly ordered vowel–consonant and consonant–vowel–consonant units in nonsense words that are fully decodable (e.g., uk, puj). Students can read the words sound by sound, with partial blends, or as whole words. Two scores can be derived from this test: (a) total number of correct letter sounds (CLS) produced in 1 min, and (b) total number of words recoded completely and correctly (WRC) in 1 min. Alternate-form reliability for NWF subtests range from .67 to .88, and predictive validity coefficients range from .73 to .91 (Good & Kaminski, 2002). We administered this measure at pretest and posttest.

DIBELS Oral Reading Fluency (DORF; Good, Kaminski, & Dill, 2002) is a measure of a student's skill in reading connected text accurately and fluently. Students read a passage aloud for 1 min to an examiner, and the examiner calculates the number of words read correctly. Omitted or substituted words and words where the student hesitates longer than 3 s are scored as errors. If a student self-corrects a word within 3 s, the word is scored as correct. Students are asked to read three passages with similar readability levels, and the final score recorded is the median of the three passages. Alternate-form reliability for administration of a single passage ranges from .89 to .96. Concurrent correlations with the *Test of Reading Fluency* (1987) range from .91 to .96 across alternate forms of first-grade DORF passages (Good, Simmons, & Kame'enui, 2001). We administered this measure at pretest and posttest.

Stanford Achievement Test, Tenth Edition (SAT-10; Harcourt Brace Educational Measurement, 2003) is a group administered, norm-referenced test of overall reading proficiency. The measure is not timed, although guidelines with flexible time recommendations are given. The word-reading, sentence-reading subtests of the SAT-10 were administered as part of the pre–post intervention and served as a measure of reading achievement in the areas of word reading and reading comprehension. The internal consistency reliability coefficients for the total reading score is .97 at Grade 1, and correlations between the SAT-10 total reading scale and the Otis-Lennon School Ability Test range from .61 to .74. In addition to administering the word reading and sentence reading subtests in the beginning and at the end of first grade, we also administered the SAT-10 reading comprehension subtest at the end of first grade.

Group Reading Assessment and Diagnostic Evaluation (GRADE; Williams, 2001) is a group, administered, norm-referenced test of overall reading achievement. The word meaning and listening comprehension subtests of the GRADE were administered as part of posttest data collection only and served as a measure of reading achievement in the areas of vocabulary and listening comprehension. On the word-meaning subtest, students were required to silently read a target word and look at a set of four pictures. Students then marked the picture that best defined the meaning of the word. One raw score point was awarded for each correct response on the 27 items.

The listening comprehension subtest is designed to measure receptive comprehension without printed cues. It requires students to listen and understand orally presented connected speech, and to choose one of four pictures that best correspond to what is read by the teacher. Total test alpha and split-half reliabilities for the first-grade subtests ranged from .87 to .96. According to the manual, the correlation between the GRADE total test standard scores and the California Achievement Test (CAT) was .87, and the normative sample for both subtests is representative of the U.S. student population. We administered the GRADE at the end of first grade.

Bilingual Verbal Ability Test (BVAT; Muñoz-Sandoval, Cummins, Alvarado, & Ruef, 1998) is a measure of a child's ability to use two languages to negotiate the meaning of academic content. It consists of three subtests from the Woodcock–Johnson Tests of Achievement-Revised (Woodcock & Johnson, 1989): Picture Vocabulary, Oral Vocabulary, and Verbal Analogies. The test yields an English proficiency score and a score that indicates the language skills the child has in his or her first language. The norming sample included 5,602 participants from more than 100 different U.S. communities. Subsets of the norming sample representing populations with low percentages of occurrence in the United States were oversampled. Concurrent validity of the BVAT with the Language Assessment Scales (Duncan & De Avila, 1985) and the Woodcock Muñoz Language Survey Reading–Writing cluster (Woodcock & Muñoz-Sandoval, 1993) in kindergarten was within the range of .6 to .9. The median alternate form reliability observed across 12 grade levels was .84 in a sample of 542 bilingual participants. We administered the BVAT in the beginning of first grade.

Transition lessons assessment. This test is a researcher developed assessment comprised of eight subtests designed to capture the content and routines of the transition lessons. Two versions of each subtest were developed and administered pre- and posttest. The transition lesson assessment included the following subtests: (a) word reading fluency-decodable (WR-D); (b) word reading fluency-sight words (WR-S); (c) Tier-1 Vocabulary Knowledge (V-Tier 1); (d) Depth of Vocabulary Knowledge (DOK); (e) Comprehension Questions; (f) Story Sequencing; and (g) Grammar Word Sort (W-Sort). A total test score was derived by combining the scores from each subtest. A detailed description of each subtest can be found in Burns (2011). We administered this measure at pretest and posttest to determine student mastery of the skills taught.

Data Collection

All assessments were administered by a team of trained data collectors. A shadow scoring procedure was used for field reliability on 20% of the DIBELS, SAT-10, GRADE, and transition lesson assessment administrations at pretest and posttest. Interrater reliability based on percent agreement between two testers was .89 for the GRADE, SAT-10 and Transition Assessment measures, and .99 for DIBELS NWF and ORF. In addition, data collectors also completed a fidelity checklist for the SAT-10 and the GRADE.

Data Analysis Procedure

To determine growth on student reading skills, we calculated gain scores on each of the reading measures for both conditions using analysis of variance (ANOVA). Assumptions of normality and equality of variance across conditions were verified with Kolmogorov Smirnov tests and Levene's tests, respectively (Howell, 2010).

To compare scores by condition at posttest on the GRADE and the SAT-10 reading comprehension, we used analysis of covariance (ANCOVA) with pretest scores from the BVAT as a covariate. Fidelity of implementation of all the supplemental programs in the treatment and comparison conditions was analyzed using independent observation *t* tests. To determine the feasibility of the intervention in authentic settings, all teachers in the treatment condition completed a feasibility survey. Results were analyzed descriptively and are included in the next section. Although we had student Spanish reading proficiency scores at pretest, we decided not to include them as a covariate given the large number of tests conducted and the small sample size.

Results

Means and standard deviations for all test scores are presented in Table 2

Pretest Differences

Kolmogorov Smirnov tests and Levene tests conducted at pretest on all the measures given at that time verified the assumption of normality and equality of variance between the two conditions. Thus, we conducted a series of ANOVAs to examine pretest differences. None of the differences were statistically significant.

Posttest Differences

Individual ANOVA tests were conducted on the pretest–posttest gain scores on DIBELS ORF, SAT-10 word reading, and sentence reading, vocabulary Depth of Knowledge (DOK), and the researcher developed assessments (i.e., Transition Assessments). Results indicated no significant differences by condition. To examine gain score differences on the GRADE word meaning, listening comprehension, and the SAT-10 reading comprehension, we used the BVAT pretest scores as a covariate, given that language proficiency in the native language and in English might have an effect on comprehension outcomes (D. L. Baker et al., 2013; Geva & Farnia, 2012; Kieffer, 2008).

The results of the ANCOVAs for the GRADE listening comprehension measure and the SAT-10 reading comprehension subtest, taking student bilingual verbal ability at pretest into account, indicated no significant differences by condition at posttest. EL bilingual verbal ability at pretest significantly explained 30% of the variance on the GRADE listening comprehension subtest, and a significant 6% of the variance on the SAT-10 reading comprehension subtest. Thus, although differences did not vary by condition, student language proficiency appeared to have an influence on reading and listening comprehension.

Fidelity of Implementation

Observation data on fidelity of implementation were collected in both the treatment and comparison conditions at two time points during the 60 days of the project. Travel issues resulted in observation data being collected on 12 of the 14 instructors. Results of independent *t* tests were not statistically significant suggesting that fidelity of implementation mean scores did not differ by condition. In addition, the examination of the mean scores for each instructional component by condition indicated that instructors in both conditions had high levels of fidelity of implementation. As reported on Table 3, on average, each item received a rating of 2 (i.e., sometimes) to 3 (i.e., consistently) in both conditions.

Time on Instruction

Given that we found no condition effects for the transition lessons, we explored differences in instructional time devoted to each reading component taught in the interventions in the treatment and comparison conditions. Table 4 indicates that the amount of time instructors spent on each of the core reading components as well as the time devoted to linking elements of English to Spanish varied significantly by condition. Specifically, the treatment group spent significantly more time on phonemic awareness ($M = 2.04$, $p = .013$), vocabulary ($M = 7.13$, $p = .000$), and comprehension instruction ($M = 8.03$, $p = .001$), than the comparison group. Conversely, the comparison group spent significantly more time on phonics ($M = 9.42$, $p = .019$), word work ($M = 8.28$, $p = .000$), and sentence reading ($M = 4.92$, $p = .000$), than the treatment group. Furthermore, the

Table 2. Descriptive Data on All Tests by Condition.

	Treatment (n = 39)		Comparison (n = 39)	
Measure	*M*	*SD*	*M*	*SD*
BVAT bilingual score (pretest only)	454.44	11.65	454.79	8.75
DIBELS NWF				
Pretest	40.00	24.71	47.03	25.37
Posttest	61.18	33.87	68.26	35.03
Gain score	21.18	32.71	21.23	36.66
DIBELS ORF				
Pretest	13.41	12.71	13.67	12.18
Posttest	36.18	24.23	39.00	22.12
Gain score	22.77	22.63	25.33	20.49
SAT-10 word reading				
Pretest	425.82	27.66	424.46	28.79
Posttest	489.85	45.83	491.56	41.17
Gain score	64.03	41.12	67.10	45.84
SAT-10 sentence reading				
Pretest	449.46	31.03	436.90	34.18
Posttest	518.51	39.91	521.72	34.04
Gain score	69.05	35.19	84.82	45.60
DOK vocabulary				
Pretest	3.33	2.51	3.18	2.27
Posttest	5.23	2.76	4.59	2.16
Gain score	1.90	2.86	1.41	2.41
Transition assessment				
Pretest	27.90	14.07	27.13	13.31
Posttest	52.03	18.67	48.74	16.34
Gain score[a]	24.13	13.84	21.62	12.97
GRADE listening comprehension (posttest)	13.77	2.92	13.72	2.67
GRADE word meaning (posttest)	21.69	5.36	22.31	3.76

Note. BVAT = Bilingual Verbal Ability Test; DIBELS NWF = DIBELS Nonsense Word Fluency, DIBELS ORF = DIBELS Oral Reading Fluency; SAT = Stanford Achievement Test; DOK Vocabulary = Depth of Knowledge Vocabulary; GRADE = Group Reading Assessment and Diagnostic Evaluation.
[a]To create gain scores the pretest score was subtracted from the posttest score.

Table 3. Instructional Components by Condition.

	Treatment	Comparison		
Instructional component	*M* (*SD*)	*M* (*SD*)	*t* statistic (*df* = 10)	*p* value
Teacher model	2.58 (0.49)	2.67 (0.52)	−0.29	.780
Group responses	2.75 (0.42)	2.67 (0.41)	0.35	.734
Individual responses	2.75 (0.42)	2.75 (0.42)	0.00	1.000
Feedback	2.58 (0.49)	2.17 (0.41)	1.60	.141
Practice	2.58 (0.58)	2.41 (0.66)	0.46	.654
Signaling	2.25 (0.82)	2.17 (0.75)	0.18	.858
Brisk pacing	2.45 (0.66)	2.67 (0.52)	−0.73	.484

Note. Analyses were conducted at the teacher level (six treatment instructors, six control instructors).

amount of time spent on transition elements was significantly different between the treatment group and the comparison group (p = .000).

Results of the feasibility survey indicated that, on average, instructors in the treatment condition followed the script *moderately closely* (M = 3.00, SD = .82), six out of seven instructors thought that the lessons were *not at all different* from the instruction they were providing during other parts of the school day (M = 1.86, SD = 1.07), and most instructors were *moderately likely* to continue using

Table 4. Time Spent on Core Components of Reading by Condition.

	Treatment	Comparison		
Core components	*M* (*SD*)	*M* (*SD*)	*t* statistic (*df* = 10)	*p* value
Phonemic awareness	2.04 (0.55)	0.83 (0.98)	2.99	.013
Phonics	3.94 (0.48)	9.42 (4.80)	−2.78	.019
Word work	5.48 (0.64)	8.28 (0.77)	−6.86	.000
Sentence reading	2.17 (0.26)	4.92 (1.11)	−5.89	.000
Vocabulary	7.13 (0.29)	1.98 (0.69)	16.73	.000
Comprehension	8.03 (0.27)	4.42 (1.96)	4.48	.001
Transition elements	2.91 (0.29)	1.00 (0.55)	7.58	.000

Note. Analyses were conducted at the teacher level (six treatment instructors, six control instructors).

the transition lessons after project completion ($M = 3.43$, $SD = .53$). In addition, four of the seven instructors (57%) thought that the transition lessons were *moderately useful* for improving language proficiency, and three thought they were *very useful* ($M = 3.43$, $SD = .53$). Finally, on a question of which section of the transition lessons did instructors think students responded best, four of the seven instructors indicated that students responded best during the read-aloud section, and three instructors out of the seven indicated that students responded best during the vocabulary section.

Discussion

The purpose of this study was to compare the effects of English commercially available supplemental programs provided by the school to an English researcher developed supplemental program that emphasized vocabulary and academic language to support the transition from bilingual instruction to English only instruction for ELs at risk of reading failure. Two main findings are noteworthy. First, there were no main effects of the transition intervention on outcomes. In both conditions, students significantly increased their English reading performance from pretest to posttest, but the degree of improvement did not differ by condition.

Second, in our exploratory analysis we found that amount of instructional time spent on each of the core components in reading varied significantly between conditions. In general, in the treatment condition, more time was spent on vocabulary and comprehension, and less on phonemic awareness and phonics compared with the comparison condition. We discuss these findings in the context of prior research targeting the reading performance of ELs at risk or with reading difficulties.

Main Effects

We did not find differences in reading outcomes between conditions in the short-term (i.e., at the end of first grade). We also looked at gains at the end of second grade with data from the larger research study assuming that for ELs, English vocabulary and language proficiency takes longer to acquire than discrete skills such as pseudoword reading and oral reading fluency (Geva & Yaghoub-Zadeh, 2006). Results, however, did not indicate any significant differences between the treatment and comparison conditions on any of the posttest measures in English in second grade (e.g., on DIBELS NWF and on ORF, on the Sat-10 sentence reading subtest and on the reading comprehension subtest).

Given that we could not locate any experimental studies where the effects of an English intervention were examined in the context of Tier 1 bilingual reading instruction, we cannot easily compare this finding to previous research. However, the results of other English intervention studies have found a pattern of outcomes that may be relevant to our findings. For example, in the Gunn et al. (2000) study, the intervention focused on phonological awareness, phonics, and oral reading fluency, and it lasted 60 weeks, 5 days per week for 25 to 30 min, which was longer than the transition lessons intervention in our study. A significant effect was found on word reading, but not on oral reading fluency. In the Vaughn, Cirino, et al. (2006) English study, the English intervention focused on letter knowledge, word recognition, fluency, comprehension, oral language skills, and vocabulary, and it lasted 32 weeks, 5 days per week for 50 min per day which was also longer than in our study. Consistent with our findings, however, none of the *ES*s were statistically significant. In the Vaughn, Mathes, et al. (2006) replication study, using a similar intervention as the one used in the Vaughn, Cirino, et al. study but provided for 40 min, the intervention had significant effects on phonological awareness and passage comprehension, but not on word attack or vocabulary. These three interventions were provided in English in the context of English only whole group reading instruction.

In the current study, the intervention was provided for 60 days, 30 min per day, 5 days per week for a total of 12 weeks. In other words, a plausible explanation for our lack of effects in the treatment group could be the fact that our intervention was less intensive than the Gunn et al. (2000)

and the Vaughn et al. (Vaughn, Cirino, et al., 2006; Vaughn, Mathes, et al., 2006) interventions. Another potential explanation for our lack of effects could be the fact that our intervention was provided in the context of ELs receiving at least 45 min of reading instruction in their native language. Thus, given that the transfer of reading skills from one language to the other is not as apparent as Cummins' (1979) interdependence hypothesis predicts, the benefit of the bilingual reading instruction ELs were receiving in first grade did not appear to have a direct effect on their English reading performance at least in the short term. This hypothesis is also evidenced in more recent studies that have examined the cross-linguistic transfer of Spanish reading skills to English reading skills (see for example, D. L. Baker et al., 2012; Cirino et al., 2009). More research, however, needs to be conducted to understand more clearly when and under what circumstances are reading skills more likely to transfer across languages.

Instructional Time

Findings indicate a significant difference by condition on the amount of time teachers spent on the different components in reading. For example, in the treatment condition, only 14 min were devoted to teaching a combination of phonemic awareness, phonics, word work, and sentence reading, compared with 23 min devoted to those same components in the comparison condition. At the other extreme, the treatment condition spent on average 18 min on teaching vocabulary, comprehension, and transition elements compared with 7 min in the comparison condition. These differences are aligned with the intended design of the transition lessons intervention—that is, more instructional time was devoted on vocabulary and comprehension (i.e., on higher order skills) than is normally devoted to these skills in most schools. However, these differences in instructional emphasis did not appear to make a difference on any of the outcomes measured. Plausible explanations could be that (a) our outcome measures were not sensitive enough to detect differences in growth of higher order skills such as vocabulary and comprehension, (b) growth on higher order skills might not be as apparent as growth on lower order skills such as letter sounds or word reading, and (c) in the early grades small group explicit instruction that allows ELs at risk of reading disabilities to practice their English reading skills independently of whether they teach lower order skills, or higher order skills, might be enough to improve ELs general reading skills.

Furthermore, all supplemental programs used by teachers in the comparison condition included an explicit and systematic approach to teaching the core components in reading (i.e., it included explicit modeling, scaffolding, providing multiple opportunities for students to respond in groups and individually, and providing ongoing corrective feedback). As illustrated in Table 3, instructors in both conditions provided teacher models of new material and opportunities for students to respond individually and as a group. In addition, instructors in both conditions followed student mistakes with corrective feedback and practice opportunities. This approach to supplemental instruction aligns with the approach used in previous studies with ELs, and with recommendations by researchers in the field (see S. Baker et al., 2014; Gersten et al., 2008; Gersten et al., 2007).

Thus, results suggest that while teachers in the treatment condition spent double the time on transition elements (M = 2.04 min) than teachers in the comparison condition (M = 1 min), this difference did not appear to have an effect on student reading performance. This finding indicates that it is not clear how much explicit support is required for students to transition from Spanish reading instruction to English reading instruction when other moderator variables are constant such as teacher years of experience, quality of instruction, and teacher level of bilingualism.

Limitations

Three main reasons can potentially explain the lack of main effects. First, a potential threat to internal validity was treatment diffusion between conditions. As discussed earlier, this study was part of a larger research study designed to examine the effect of systematic teaching routines on student reading outcomes. All schools that participated in the larger study had provided their teachers with professional development on explicit instruction. Moreover, although the training in the larger study was conducted in Spanish in first grade, and it did not include the transition lessons, the Spanish templates developed to provide explicit beginning reading instruction were also based on the same theory and design principles as the transition lessons. Therefore, it is possible that the differences in the quality of instruction were minimal accounting for the lack of effects. Furthermore, teachers in both conditions were all bilingual, they had, on average, the same number of years teaching ELs, and they all had received professional development on explicit instruction. Thus, the contrast between the instruction in the treatment and comparison condition may not have been as large as expected.

Second, our sample size was small, and therefore did not allow us to detect potentially differential effects among the different interventions. Third, we included student bilingual verbal ability at pretest as a covariate, but not student Spanish reading proficiency because of the small sample size and low statistical power. It is plausible that native reading proficiency could have had a differential effect on English outcomes as evidenced by a correlation analysis conducted with all students in the larger efficacy study across 2 years of implementation. In this larger study, there

was a significant interaction effect between Spanish and English reading skills and ELP.

Implications for Practice

This experimental study compared the effects of a transition intervention with standard school-based interventions on the reading development of ELs in first grade who were receiving native reading instruction for at least 45 min a day. Results suggest that both, a transition intervention and a standard school-based explicit intervention were equally effective in improving student reading skills in English. These results suggest that interventions currently on the market for at-risk monolingual students might be also effective with ELs with the adaptations suggested by the publisher. Furthermore, our results suggest that there is no need to wait until students have achieved a certain level of language proficiency in English to include them in small-group instruction that targets their specific reading difficulties as identified by formative assessments. In other words, ELs at risk of reading difficulties can receive explicit supplemental instruction that targets their weak skills as soon as they are screened and identified.

Future Research

Although explicit small group instruction on the core components of reading supports the transition from Spanish to English for ELs at risk of reading difficulties, the reading achievement gap between ELs and non-ELs remains large (Lee, Grigg, & Donahue, 2007), and studies on effective reading interventions for ELs remain scarce (Richards-Tutor et al., 2015). For example, we still do not know the optimal amount of time to differentially support ELs reading. Nor do we know how much language support ELs need to accelerate their reading proficiency. We also do not know the degree Spanish reading proficiency affects English achievement, and whether in bilingual programs, both Spanish and English supplemental support would accelerate reading achievement compared with support in one language only.

We do know that ELP is acquired over many years, and that ELs with little exposure to academic language need more intensive support to develop their language proficiency than ELs who are more exposed to academic language in English. Future research should address what happens when ELs at risk of reading failure receive longitudinal interventions that cut across the school day. Moreover, for students receiving native language instruction, more research is needed on how to transition students from reading in the native language to reading in the second language. Specifically, the answer to the following question still remains: "How can programs (i.e., bilingual or English only) in the United States that are anchored in reading research accomplish the task of accelerating ELs' reading gains taking their native reading proficiency and their English reading proficiency into account?"

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