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Kelly M. Thomason
Marquette University

Brenda K. Gorman
Marquette University

Connie Summers
The University of Texas at Austin

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English Literacy Development for English Language Learners: Does Spanish Instruction Promote or Hinder?

Kelly M. Thomason & Brenda K. Gorman, Marquette University
Connie Summers, The University of Texas at Austin

Clinical Scenario

Joanne is a monolingual speech-language pathologist (SLP) working in an elementary school. A first grade teacher approaches her about a particular student in her class named César. César's predominant language is Spanish, and he has been learning English in school since kindergarten. Most of his classmates are native speakers of English. Although the demographics in the school district have been changing in recent years, like elsewhere in the country, César's teacher has had relatively little training in teaching English language learners. She is concerned that César is falling behind his monolingual English-speaking peers in reading because of his limited English proficiency. With the statewide reading proficiency tests looming ahead, she would like to help him accelerate his English reading acquisition so that he does not continue to fall behind. The teacher recently met with César's parents to discuss her concerns.

During this meeting, César's parents informed the teacher that they work with César at home on reading and writing activities in Spanish. They reported that he enjoys looking at books, being read to, and telling stories in Spanish. The teacher observes that his parents speak some English, but they report that they speak Spanish at home with the expectation that César will learn English in school. The teacher also learned that they live in a neighborhood where Spanish is frequently spoken, and that César has limited exposure to English outside of school. Following this meeting, the teacher tells Joanne that she would like to recommend that César's parents speak and read with him in English rather than in Spanish to help accelerate his English language and literacy development. She is interested in Joanne's response to this recommendation as well as identification of additional strategies that she can use to help him catch up to his peers.

Background and Rationale

Given the rapidly changing demographics in the United States, more and more SLPs in all parts of the country are facing scenarios similar to the one discussed here. According to the National Clearinghouse for English Language Acquisition and Language Instruction Educational Programs (NCELA, 2007), the number of English language learners (ELLs) attending elementary and secondary schools in the U.S. has more than doubled over the last 15 years. These data also indicate that during the 2004-2005 school year, the enrollment of ELLs exceeded five million students. Spanish is the primary language of approximately 79% of ELLs (Kindler, 2002).

There has long been a great deal of controversy and confusion about the effects of native language instruction on English language learners' achievement. Education policies toward native language instruction/support were favorable for approximately two decades following the enactment of the Bilingual Education Act in 1968. The tide shifted during the 1990s, when opposition to bilingual education and preference for English immersion began to resurge. With the passing of the No Child Left Behind Act in 2001 (NCLB), which requires states to test ELLs in reading and language arts in English after three consecutive years of schooling in the U.S., this trend has continued.

Within the context of both more and less favorable climates toward providing bilingual support to ELLs, research indicates that these pupils continue to be at high risk for reading failure. According to the National Center for Education Statistics (NCES, 2005), 73% of English language learners fall below the basic reading proficiency level in fourth grade. Dropout rates are high among English language learners; in 1999, approximately 39% of young adults (ages 18-24) who spoke Spanish at home did not complete high school compared to 10% of those who spoke only English at home (NCES, 2004). Some scholars and educators consider bilingual instruction a partial solution to this problem by promoting literacy skills in the language that ELLs understand best and can then transfer to English (Cummins, 1983, 1993; Lopez & Tashakkori,

2004a). Other educators, policy makers, and the general public consider native language instruction to be part of the problem (Lopez & Tashakkori, 2004a), and some teachers may believe that instruction in the native language can impede children's academic progress in English (Ambert, 1986). For example, Rueda and Garcia (1996) interviewed a sample of teachers in southern California who taught predominately Hispanic/Latino ELLs and found that most teachers, including those with bilingual credentials, did not have positive views toward bilingual instruction. Many educators also believe that continuing to speak Spanish is the primary cause of Spanish-speaking ELLs' academic underachievement (Escamilla, 2006).

The Clinical Question

SLPs who are familiar with the concept of evidence-based practice understand the need for making judicious clinical and educational recommendations that are based on evidence. They also know that one can find "evidence" for nearly any clinical question, whether from anecdotal or empirical sources, but that there may be vast differences in the quality of evidence among sources. Therefore, the aim of this brief is to use an evidence-based decision-making process to help SLPs gain some clarity for addressing and making appropriate recommendations in the clinical scenario identified earlier. More specifically, this brief describes the outcomes of a systematic process designed to answer the following question posed by our hypothetical SLP, Joanne: Does literacy instruction in Spanish promote or interfere with Spanish-speaking English language learners' literacy development in English?

Search for Evidence

Inclusion Criteria

To conduct a search for evidence respondent to the question posed in this brief, inclusion criteria were established based on the Evidence Standards for Reviewing Studies developed by the U.S. Department of Education's What Works Clearinghouse (WWC, Revised 2006). These procedures were designed to facilitate systematic evaluation of the quality of a research study's design and methodology. Readers can use such quality ratings to help determine the extent to which they can make conclusions about the causal effects of a particular instructional approach based on a body of studies. For the present brief, five criteria were used to identify included studies (see Table 1). The first criterion was that the study must utilize one of the three research designs that the WWC considers to provide the best support for causal relationships between a specific instructional approach and outcome measures: randomized controlled trials (RCTs), quasi-experimental controlled studies (QEDs), and regression discontinuity designs (RDs). The second criterion was that the independent variable under study must involve a direct comparison of literacy instruction in Spanish versus English or a direct comparison of explicitly described amounts of Spanish versus English instruction. The third criterion was that dependent measures needed to include direct measures of literacy skills (e.g., reading, comprehension, fluency, phonological awareness, preliteracy skills) at pretest and posttest in English. Also, if the authors did not report effect sizes as either standardized *d* or Eta squared values, they needed to provide the means and standard deviations of participant performance on the outcome measures so that effect sizes could be calculated. The fourth criterion was that participants needed to be native Spanish speakers who were learning English as a second language and who were enrolled in preschool through fifth grade. The fifth criterion was that only articles that were peer-reviewed and published from the years 1990 to the present were included. While additional research on this topic was published prior to 1990, there have since been significant changes in policies and practices related to native language instruction as well as changes in demographic trends of the Spanish-speaking population in the United States (Slavin & Cheung, 2005). Hence, for purposes of generalizability, this brief focused on more recently published research of instructional programs that may more closely align with current educational practices and demographics of the target population.

Article Search

Once these inclusion criteria were established, a search for relevant articles was conducted using these databases: Academic Search Elite, Campbell Collaboration, Cochrane Database of Systematic Reviews, Division for Early Childhood of the Council for Exceptional Children, Educational Resources Information Center (ERIC),

Google Scholar, PsychINFO, Research and Training Center of Early Childhood Development, EBSCO, and the What Works Clearinghouse. Search terms included the following: literacy, reading, Spanish, bilingual, English, English language learners, English as a second language, immersion, and bilingual education.

After generating a comprehensive list of citations and abstracts from these sources, each article's title and abstract were studied for indication of potential relevance to the clinical question. A total of 58 articles underwent further review following a process adapted from procedural recommendations described by the WWC (2006) and by Gillam and Gillam (2006). The first stage of this review process entailed screening each article to determine if it met the inclusion criteria presented in Table 1. Five research studies from 1990 to the present met these criteria, as well as several systematic reviews and meta-analyses (Greene, 1997; Rossell & Baker, 1996; Slavin & Cheung, 2005; Willig, 1985) that attempted to compare education outcomes of English immersion and different models of bilingual education programs. The vast majority of studies in these reviews were published in the 1970s and 80s. Given that systematic reviews and meta-analyses are considered to represent the highest level of evidence of treatment efficacy (Harbour & Miller, 2001; Oxford Centre for Evidence-Based Medicine, 2001), the findings from the present review will be considered against the results and conclusions of these reviews in the discussion section. The primary reason for exclusion of studies was failure to meet design criteria and/or lack of pretest measures of literacy skills in English. Concerning the latter, pretest measures are necessary for determining baseline equivalence between groups in order to meet standards of evidence for high-quality research (WWC, 2006).

Evaluating the Evidence

Description of Included Studies

The corpus for this review consisted of five studies that included a total of 332 Spanish-speaking English language learners in grades kindergarten through third grade. All children were enrolled in public elementary schools in various parts of the United States including Texas (Maldonado, 1994), the south (Lopez & Tashakkori, 2004a, 2004b), and California (Gerber et al., 2004). Carlisle and Beeman (2000) did not indicate where their study took place. All studies were conducted in schools that were reported to have high numbers of Hispanic/Latino Spanish-speaking ELLs and to have moderate to high percentages of students who qualified for free or reduced lunch.

In each study, the control and experimental groups received different amounts of literacy instruction in Spanish versus English. Maldonado (1994) compared the performance of 10 second and third graders receiving all English instruction to 10 students receiving instruction in both Spanish and English. Both groups were enrolled in special education. Lopez and Tashakkori (2004a) compared the performance of 33 children who were taught primarily in English with 33 children who received 50% of their instruction in Spanish and 50% in English as they progressed from kindergarten to first grade. Lopez and Tashakkori (2004b) conducted a similar study of children in the same grades, but the experimental instruction involved a different balance of Spanish and English instruction; specifically, one group of 57 children received primarily English instruction, whereas the other group of 71 children received 30% of their instruction in Spanish and 70% in English. In Gerber et al. (2004), 37 kindergartners identified as low-performers at the beginning of kindergarten received supplemental literacy instruction in Spanish and were compared at the end of kindergarten with a control group of 45 better-performing students who received no supplements. Children were then followed through 1st grade, during which 14 students continued to receive intervention in Spanish. Carlisle and Beeman (2000) compared the performance of 17 children who received literacy instruction in English with 19 children who received literacy instruction in Spanish as they progressed from first grade to the fall of second grade.

Children's English literacy skills were measured using standardized assessments, tests developed by school districts, and experimenter-designed tools. Standardized tests included the Comprehensive Test of Basic Skills (used in Maldonado, 1994), the Scholastic Reading Inventory (used in Lopez & Tashakkori, 2000a, 2000b), the Woodcock-Johnson Tests of Achievement III (used in Gerber et al., 2004) and the Woodcock-Johnson Psycho-Educational Battery-Revised (used in Carlisle & Beeman, 2000). Additional school- and experimenter-designed tools were used to evaluate alphabet knowledge, phonological

awareness, phonics, reading and writing.

Estimated Effects

Each study was classified according to its research design and then appraised for 11 attributes (Table 2) based on the WWC (2006) and Gillam and Gillam (2006). Two authors evaluated each study and rated each attribute using Law and colleagues' (2005) 3-point scale (0=inadequate, 1=unclear, 2=adequate). Inter-rater reliability of this rating procedure was 89%. All differences were within one point and were resolved through discussion. The ratings reported in Table 2 reflect those following consensus procedures. These ratings show that the studies included in this corpus generally exhibited about half of the attributes.

Table 3 provides a summary of each study, including participants, instructional approaches, outcome measures, and results. To examine the consistency of results and compare results across studies, effect-size estimates were calculated using Hedges and Olkin's correction factor (1985) and 95% confidence intervals based on posttest differences between the instructional groups. Based on Cohen's (1988) recommendations, an effect size of d = .2 is considered small, .5 is medium, and .8 is large. Prior to consideration of these effect-size estimates, *a priori* decisions for how to interpret findings were established. Specifically, results revealing greater English literacy performance of an experimental group that received more Spanish instruction than a control group that received more English instruction would indicate that native language instruction promoted English literacy acquisition. Results revealing lower performance of the experimental group than the control would indicate that native language instruction interfered with or delayed English literacy development. Results revealing no differences between groups would indicate that native language instruction did not interfere with English literacy acquisition.

Of the five studies reviewed, Maldonado's (1994) study ranked the highest in terms of quality and was the only to include randomization procedures. The experimental group of students received primarily Spanish instruction during second grade. During third grade, 50% of instruction was in Spanish and 50% in English. During fourth grade, instruction was in English. The control group received all instruction during those years in English. Despite the fact that the experimental group scored lower at pretest in English, they outperformed the control group at posttest. The effect size calculated for this review was d = 6.71 (CI = 4.45 to 8.96). Furthermore, students in the experimental group were able to be mainstreamed following the study with only consultative services. A strength of this study was that it was the longest in duration, although the sample size was the smallest of this corpus. Overall, this study provides evidence that native language instruction promoted English literacy acquisition for these children.

The remaining four studies were quasi-experimental in nature. The next two highest ranking studies in terms of quality were both conducted by Lopez and Tashakkori (2004a, 2004b) and were each two years in duration. In the first study (2004a), the experimental group received 50% of instruction in Spanish and 50% in English, while the controls received instruction primarily in English. In the second study (2004b), the experimental group received 30% of their instruction in Spanish and 70% in English, and the control group again received primarily English instruction. At the outset of both studies, there were differences between the experimental groups that received greater amounts of literacy instruction in Spanish than the control groups who received greater amounts of literacy instruction in English; children in the experimental groups were considered at higher risk for academic difficulties because they were of somewhat lower socioeconomic status (SES) and displayed lower levels of English proficiency compared to the controls. Some group differences at the end of first grade remained on measures of alphabet knowledge (d = -0.59, CI = -1.08 to -0.10) and sight word reading (d = -0.57, CI = -1.06 to -0.08) in the first study (2004a) and in sight word reading (d = -0.46, CI = -0.82 to -0.11) in the second study (2004b). However, there were no statistically significant performance differences on the Scholastic Reading Inventory between the experimental and control groups by the end of first grade in either study. The authors concluded that bilingual instruction appeared to help narrow the gap between the groups and to break the school's traditional pattern of achievement discrepancies between students with limited English proficiency and students proficient in English.

The Gerber et al. study (2004) received the next highest quality rating. Results indicated that from the beginning to the end of kindergarten, the experimental group that received supplemental instruction in Spanish closed gaps in English rime awareness (d = -0.92, CI = -1.58 to -0.26 pretest, d = -0.11, CI = -0.55 to 0.32 posttest) and English segmentation (d = -0.66, CI = -1.30 to -0.02 pretest,

d = 0.00, CI = -0.43 to 0.44 posttest), and narrowed gaps in English word identification (*d* = -0.98, CI = -1.64 to -0.32 pretest, *d* = -0.44, CI = -.88 to 0.00 posttest). On word attack measures (collected only at posttest), a group difference favoring the control group that did not receive supplemental Spanish instruction was present at the end of the year (*d* = -0.53, CI = -0.97 to -0.08). By the end of first grade, however, there were no statistically significant group differences found for either word identification or word attack. Although the amount of native language instruction for the experimental group was less than observed in the other studies reviewed, these results support the benefits of supplemental Spanish instruction, particularly because these students were initially identified as at-risk compared to the control group.

In the final study included in this review, Carlisle and Beeman (2000) examined students over a period of one year. On standardized measures, there were no significant differences between the experimental group that received literacy instruction in Spanish and the control group that received literacy instruction in English on English letter-word identification or English listening comprehension by the fall of first grade. There were also no significant differences between groups in English reading comprehension by the fall of second grade. The only difference on standardized measures was the experimental group's higher performance on Spanish reading comprehension (*d* = 1.50, CI = 0.76 to 2.24) in the fall of second grade. On experimental measures, there were no significant differences between groups on English reading comprehension or English writing productivity. The experimental group received higher scores on English measures of linguistic complexity (*d* = 0.70, CI = 0.02 to 1.37) and on English spelling (*d* = 0.89, CI = 0.21 to 1.58). In addition, the experimental group performed higher on measures of Spanish reading comprehension and Spanish writing. The only task on which the control group performed higher was an experimental measure of English listening comprehension (*d* = 1.13, CI = 0.43 to 1.84).

To summarize the results of this corpus of studies, none indicated that native language instruction for Spanish-speaking ELLs inhibited their literacy development in English. In contrast, research results from Maldonado (1994) provided compelling evidence that children showed greater literacy gains during bilingual instruction as compared to English-only instruction. Findings from Lopez and Tashakkori (2004a; 2000b) and Gerber et al. (2004) suggested that Spanish instruction helped close the gap in some skills and narrow the gap in other skills between at-risk ELL children and their peers. Finally, results from Carlisle and Beeman (2000) indicated that native language instruction helped children achieve equal or even higher skills in both English and Spanish literacy skills than peers who received all English instruction. Taken together, the findings from this review reveal that bilingual instruction promotes English literacy development in ELLs.

No studies reviewed indicated that native language instruction hindered literacy development.

The Evidence-Based Decision

Early in this brief, a scenario was presented in which César's teacher considered encouraging his parents to speak and read with him in English rather than Spanish to help accelerate his English literacy development. The teacher consulted with Joanne, the school SLP, for input on this matter. This review considered how Joanne ought to respond by answering the question of whether literacy instruction in Spanish promotes or interferes with Spanish-speaking ELLs' literacy development in English. This review of five studies that met recommended evidence standards (WWC, 2006) indicated that Spanish literacy instruction either promoted or did not interfere with English literacy development among ELLs. More specifically, three studies provided strong evidence that native language instruction promotes literacy acquisition in English (Carlisle & Beeman, 2000; Gerber et al., 2004; Maldonando, 1994), and two studies indicated that native language instruction helped narrow a gap in literacy performance between ELLs and their peers (Lopez & Tashakkori, 2004a, 2004b). Based on the quality of this

Two studies indicated that native language instruction helped narrow a gap.

evidence and consistency of findings, it appears that literacy instruction provided in Spanish while children continue to learn English supports Spanish speaking ELLs' literacy development and transfer of skills to English.

These findings are further supported by the conclusions of Collier (1992), Slavin and Cheung (2005), Willig (1985), and Wong-Fillmore and Valadez (1986) in their reviews and meta-analyses (which included earlier studies). In another review with which some educators may be familiar, Rossell and Baker (1996) contested that bilingual students profited more from English immersion programs. However, Greene (1997) examined the corpus of studies that they had reviewed and reported that many of them did not meet evidence standards due to significant methodological flaws. Once the data from studies that did meet evidence standards were re-analyzed, the data also supported the benefits of native language instruction. It is also important to consider not only the language of instruction, but the quality of instruction and the impact of home and community on children's literacy development (Ramirez, 1992; Reese, Goldenberg, & Saunders, 2006; Slavin & Cheung, 2005).

With that in mind, we return to the clinical scenario with César and his teacher. Although Joanne, our hypothetical SLP, is a monolingual speaker of English, she has carefully examined the evidence concerning language of instruction using an evidence-based process. On the basis of this review, she found no evidence to support switching a child's home language from Spanish to English. Thus, she explains to César's teacher the importance of supporting a child's native language, emphasizing research findings showing that literacy instruction in one's home language promotes children's literacy development in English. Joanne advises the teacher to conference with the parents again to encourage them to continue to provide a rich language and literacy environment in the home with César and to continue to read to him in Spanish if that is the language they know best. Joanne also encourages the teacher to send home books for him to read to his parents in Spanish (Goldenberg, Reese, & Gallimore, 1992; Hancock, 2002). Joanne emphasizes that while further longitudinal research is needed in this area, existing data indicates the importance of drawing upon children's native language to support English literacy acquisition for Spanish-speaking children.

The SLP recommends drawing upon the child's native language.

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Author Notes

Kelly M. Thomason, B.S., is a graduate student in the Department of Speech Pathology and Audiology at Marquette University. Brenda K. Gorman, Ph.D., CCC-SLP, is an assistant professor in the Department of Speech Pathology and Audiology at Marquette University. Connie Summers, M.S., CCC-SLP, is currently a doctoral student in the Department of Communication Sciences and Disorders at The University of Texas at Austin.

Correspondence concerning this brief may be sent to Dr. Gorman at brenda.gorman@marquette.edu

Table 1. Inclusion Criteria for Studies
Design
Pretest-Posttest Designs: Randomized Controlled Trial (RCT)[1] or Quasi-experimental design (QED)[2] or Regression discontinuity design (RD)[3]
Independent Variable(s)
Direct comparison of literacy instruction/input in Spanish versus English or Direct comparison of explicitly described amounts of Spanish versus English literacy instruction/input
Dependent Variable(s)
Direct measures of literacy skill (reading, comprehension, fluency, phonological awareness, preliteracy skill) in English
Participants
Native Spanish speakers and English language learners and Children enrolled in preschool through fifth grade
Publication
Peer-reviewed journal and 1990 to present
1 RCTs are well-designed, prospective studies in which participants are randomly assigned to groups in order to minimize the possibility that groups will differ by unidentified characteristics that may influence their response to the instruction. *2 Strong quasi-experimental controlled studies are those in which the treatment variability is manipulated but the assignment of participants to groups is not randomized.* *3 In the regression-discontinuity design, participants are assigned to either the experimental or comparison group based on a specific cut-off score on a particular pretest measure.*

Table 2. Appraisal of Study Quality[1] using Law et al.'s (2005) 3-point scale (0=inadequate, 1=unclear, 2=adequate).

	Study				
	Maldonado (1994)	Lopez & Tashakkori (2004a)	Lopez & Tashakkori (2004b)	Gerber et al. (2004)	Carlisle & Beeman (2004)
Criteria					
Randomization	2	0	0	0	0
Recognizable Participants	1	2	2	2	2
Baseline Equivalence	2	0	0	0	2
Blinding	0	0	0	0	0
Reliable Outcome Measures	2	2	2	2	2
Statistical Significance	2	2	2	2	2
Practical Significance	0	2	2	0	0
Confidence Interval	0	0	0	0	0
Attrition	2	2	1	1	1
Teacher-Intervention Confound	1	2	2	2	1
Treatment Fidelity	0	0	0	2	0
Total Appraisal Points	12	12	11	11	10

1 Appraisal points are based on WWC (2006) and Gillam & Gillam (2006).

Table 3. Description of Studies Comparing Outcomes of Literacy Instruction Emphasizing Spanish vs. English.

Reference	Research Design	Participants	Instruction: Experimental Group	Instruction: Control Group	Outcome Measure(s)	Results/Conclusions	Effect Size and 95% Confidence Intervals
Maldonado (1994)	Randomized Controlled Trial	Hispanic/Latino Spanish-speaking ELLs attending an inner city elementary school in Houston, TX. Participants were in 2nd grade at the outset of the study and were followed for 3 years. All were labeled as learning disabled (LD) and enrolled in special education. Ten students were assigned to the experimental group and 10 to the control group. Groups were similar in terms of age, disability, educational experience, language proficiency, and family background.	Students received integrated bilingual special education services. In 2nd grade, the majority of instruction was in Spanish, with 45 minutes/day of ESL instruction. In 3rd grade, half the day was spent in each language. By 4th grade, instruction was in English.	Students received traditional special education services in English only.	Comprehensive Test of Basic Skills (CTBS)	The experimental group performed significantly better than the control group at the end of 3rd grade. A follow-up study one year later indicated that students who received bilingual instruction were able to be mainstreamed into general education classrooms with only LD consultant support.	Bilingual integrated vs. English only d = 6.71 (4.45 to 8.96)
Lopez & Tashakkori (2004a)	Quasi-Experimental Design	Students enrolled in a public elementary school in the southern U.S. in which 90% of students were native Spanish-speakers. Participants were followed from kindergarten through 1st grade. There were 33 participants in the experimental group and 33 in the control group. 73% of students in the experimental group had limited English proficiency (LEP) compared to 12% of students in the control group. 55% of students in the experimental group qualified for free or reduced lunch compared to 48% in the control group.	Instruction was 50% in Spanish and 50% in English	English instruction except for 2.5 hours/week of Spanish Language Arts.	Standardized measure: Scholastic Reading Inventory (SRI). District-designed measures: Kindergarten Assessment Guide, Emergent Reader Screening, and a high frequency word list.	Significant differences at the end of kindergarten decreased by the end of 1st grade. Increased native language instruction did not negatively impact literacy in English. The authors concluded that native language instruction appeared to help narrow the gap between students with limited English proficiency and their more proficient peers.	Bilingual Instruction Experimental Group vs. Primarily English Control Group at the end of 1st grade: Scholastic Reading Inventory (SRI) d = -0.25 (-0.74 to 0.23)

Table 3, cont.

Lopez & Tashakkori (2004b)	Quasi-Experimental Design	Students enrolled in a public elementary school in the southern U.S. in which 90% of students were native Spanish-speakers. Participants were followed from kindergarten through 1st grade. There were 71 participants in the experimental group and 57 in the control group. 74% of students in the experimental group had limited English proficiency (LEP) compared to 15% of students in the control group. 57% of students in the experimental group qualified for free or reduced lunch compared to 44% in the control group.	Instruction was 30% in Spanish and 70% in English.	English instruction except for 2.5 hours/week of Spanish Language Arts.	Standardized measure: Scholastic Reading Inventory (SRI) District-designed measures: Kindergarten Assessment Guide, Emergent Reader Screening, and a high frequency word list.	Significant differences at the end of kindergarten decreased by the end of 1st grade. Increased native language instruction did not negatively impact literacy in English. The authors concluded that native language instruction appeared to help narrow the gap between students with limited English proficiency and their more proficient peers.	Bilingual Instruction Experimental Group vs. Primarily English Control Group at the end of 1st grade: Scholastic Reading Inventory (SRI) d = -0.27 (-0.62 to 0.08)
Gerber et al. (2004)	Regression Discontinuity Design Participants in the experimental group were identified as at-risk students based on combination of low scores on English and Spanish versions of phonological awareness tasks and teacher concern.	Students were Hispanic/Latino Spanish-speaking ELLs in elementary schools in California. Participants were followed from kindergarten through 1st grade. As kindergartners, there were 37 at-risk students in the experimental group, and there 45 normally performing controls that were randomly selected from the same classrooms. Children were followed from kindergarten through 1st grade. By the end of 1st grade, there were complete data for 28 participants in the experimental group and 15 controls.	Participants received supplemental small group literacy instruction in Spanish of approximately three hours spread out over 9 sessions.	Students in the control group remained in the classroom where they received English instruction.	Standardized measures: Woodcock-Johnson Tests of Achievement III. Experimenter-developed measures of phonological awareness in Spanish and English.	Performance gaps narrowed by the end of kindergarten. By the end of 1st grade, there were no statistically significant group differences found for either word identification or word attack. Results support the benefits of the supplemental Spanish instruction, particularly because these students were initially identified as at-risk compared to the control group.	Spanish supplemental instruction vs. English instruction in the classroom: Word identification d = -0.11 (-0.75 to 0.53) Word Attack d = -0.37 (-1.02 to 0.28)

Table 3, cont.

Carlisle & Beeman (2004)	Quasi-Experimental Design	Participants attended one school with a high enrollment of Hispanic/Latino ELLs (location not specified). 19 children were instructed primarily in Spanish and 17 controls were instructed primarily in English as they progressed from 1st grade to the fall of 2nd grade. Over 80% qualified for free or reduced lunch.	Participants received literacy instruction in Spanish.	Participants received literacy instruction in English.	Standardized measure: Woodcock-Johnson Psycho-Educational Battery - R. Experimenter-designed measures of word identification, reading comprehension, and writing.	On standardized measures, there were no significant differences on English letter-word identification by the fall of 1st grade. There were also no significant differences in English reading comprehension by the fall of 2nd grade. The only difference on standardized measures was the experimental group's higher performance on Spanish reading comprehension in the fall of 2nd grade.	Spanish literacy instruction vs. English literacy instruction: English letter-word identification d = -0.32 (-0.98 to 0.34) English reading comprehension d = -0.34 (-1.00 to 0.32)

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Kelly M. Thomason
Marquette University

Brenda K. Gorman
Marquette University

Connie Summers
University of Texas at Austin