Narrative and Vocabulary Development of Bilingual Children From Kindergarten to First Grade: Developmental Changes and Associations Among English and Spanish Skills

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Abstract

Purpose—Research has identified English oral language proficiency as being critical for bilingual students' literacy development. This study examines developmental patterns and associations among oral vocabulary and narrative skills in a longitudinal sample of 24 Spanish/English bilingual children from low socioeconomic backgrounds so as to further our understanding of the development of oral proficiency.

Method—English and Spanish data were gathered using standardized vocabulary tests and narrative elicitation tasks provided to kindergartners and first graders. Narratives were coded for length using two measures of productivity and for quality at two levels: story score and language score. Descriptive, correlation, multivariate, and regression analyses were conducted.

Results—Significant gains from kindergarten to first grade were found for all English oral language measures. Despite showing improvements in English vocabulary, the majority of children continued to score below the monolingual mean in first grade. For English narrative productivity, total number of different words (TDW) proved to be a sensitive developmental measure in contrast to total number of words (TNW). In Spanish, significant gains were noted only for narrative story score. Kindergarten Spanish story scores predicted first-grade English narrative quality even when controlling for the effects of English vocabulary and English narrative productivity. First-grade Spanish narrative quality was best predicted by Spanish vocabulary.

Implications—The need for early assessment and monitoring of expressive vocabulary and oral narrative skills, and the potential contributions of Spanish story organization skills to English narrative performance in bilingual children from low socioeconomic families, are highlighted.

Keywords

narrative; vocabulary; bilingual children; Spanish; cross-language associations

The study of oral language skills is at the forefront of the current research agenda on improving literacy achievement in U.S. schools. Based on a comprehensive review of the literature, the National Literacy Panel on Language-Minority Children and Youth identified English oral proficiency as a crucial area of concern for students who speak a language other than English at home (August & Shanahan, 2006). The panel found that when learning to read, language-minority children attain levels of performance that are similar to those of English monolinguals

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in word-level skills (decoding, word identification, and spelling), but they lag considerably behind in text-level skills (reading comprehension and writing). Whereas English oral proficiency is not associated to word-level skills, it does predict English reading comprehension and writing, hence playing a critical role in explaining the disparity in literacy levels (August & Shanahan, 2006).

Among the various English oral proficiency skills, vocabulary knowledge and narrative ability have been found to be important precursors to literacy for monolingual (e.g., Dickinson & Tabors, 2001) and bilingual (August & Shanahan, 2006; Oller & Pearson, 2002) students. These skills have also been identified as an area of special vulnerability in the population of Spanish/English bilingual students (August, Carlo, Dressler, & Snow, 2005; Pearson, 2002). As noted by Snow, Burns, and Griffin (1998), the large differences between the language skills of struggling bilingual students and monolingual students usually arise from the confluence of factors such as low socioeconomic status (SES), home language other than English, and low levels of parental education. Although independent effects of these co-occurring factors are hard to disentangle, when poverty and low levels of parental education are both present, the academic performance of bilingual students is at greatest risk, as is the case of Spanish/English bilingual students from low-SES families. Bilingual children's English skills develop in coexistence with skills in another language. Therefore, to better understand how to improve the English oral proficiency of bilingual children, we need to explore developmental patterns and associations within and across the languages they speak.

The Early Childhood Study of Language and Literacy Development of Spanish-Speaking Children (ECS) was developed to answer some basic questions about the population of young Spanish/English bilingual children from low-SES backgrounds. The study was designed to collect data longitudinally from prekindergarten to second grade for a group of children from homes where Spanish was spoken, with the aims of documenting their language and literacy development and identifying factors associated with their progress in both languages. In this article, we report findings on a subsample of children drawn from the ECS. We focus on the development of vocabulary and narrative skills of Spanish/English bilingual students from kindergarten to first grade, exploring associations among these oral language skills in both languages and presenting a predictive model for explaining narrative quality skills.

Vocabulary Skills

Young bilingual children from low-SES families may be at risk for early literacy difficulties due to their low levels of vocabulary (August & Shanahan, 2006; Snow et al., 1998). Findings from the ECS showed that many Spanish/English bilingual students lag behind monolingual children of the same age in their oral language abilities in English and Spanish (Páez, Tabors, & López, in press; Tabors, Páez, & López, 2003). In particular, English vocabulary skills were limited for children in the ECS sample when they were first assessed at 4 years of age (Páez et al., in press), with low levels of vocabulary and gaps between monolingual norms and the sample persisting through first grade (Páez & Rinaldi, 2006). These findings are consistent with those of recent studies with similar populations of Spanish/English bilingual students that have found these students' oral language, in particular vocabulary knowledge, to lag significantly behind that of their English-speaking peers (August et al., 2005; Lindsey, Manis, & Bailey, 2003; Manis, Lindsey, & Bailey, 2004). Bilingual children bring to the language learning process a wider set of skills than do monolingual learners. Language skills that tend to develop in synchrony for monolingual speakers might develop at different rates in one or both languages for bilingual children (Pearson, 2002). Consequently, bilingual development challenges researchers to go beyond the study of a single ability in order to explore associations among different skills and across languages. In this study, we explore associations between vocabulary and narrative skills in English and Spanish.

Narrative Skills

Narrative skills have been identified as playing an important role in academic achievement for monolingual children, not only as an explicit part of school curriculum (e.g., in sharing time or story writing in classrooms), but also as foundational abilities for later literacy development (e.g., Bishop & Edmundson, 1987; Feagans & Applebaum, 1986; Hemphill & Snow, 1996; Roth, Speece, Cooper, & de la Paz, 1996; Snow, 1983; Snow & Dickinson, 1991). New research in this area suggests that narrative skills positively affect English reading comprehension outcomes within and across languages in Spanish-speaking bilingual students (Miller et al., 2006). Although these findings contribute to a promising inquiry into the relationship between narrative and reading performance, there is still a need to better understand the characteristics and development of bilingual children's oral narratives (Gutiérrez-Clellen, 2004).

Research on bilingual children's oral narrative development is only in the initial stages and is even more limited for Spanish/English bilinguals from low-SES families. The few studies that have studied narratives in this population suggest some interesting directions for inquiry and highlight the need for additional research (Gutiérrez-Clellen, 2002; Muñoz, Gillam, Peña, & Gulley-Faehnle, 2003; Pearson, 2002). Pearson compared the narrative performances of second and fifth graders in a cross-sectional sample of Spanish/English bilinguals and monolinguals from Miami, Florida. Using the wordless picture book *Frog, Where Are You?* (Mayer, 1969) as an elicitation procedure, Pearson examined narrative quality at two levels: (a) At the language level, lexical and grammatical elements were identified; (b) at the story level, the organization of the story was captured by assessing story elements (e.g., characters and events), story sequence, and narrators' perspectives. Results revealed effects of SES, grade, and lingualism (monolinguals vs. bilinguals) in English narrative quality, favoring high-SES, older students and monolingual children. Larger differences were identified at the language level than at the story level, suggesting that these dimensions capture different patterns of change in bilingual skills. Also, bilingual children produced better performances in English than in Spanish, with larger differences on language elements than on story features. Interestingly, results revealed significant cross-language correlations at the level of story and complex syntax, but not at the level of specific language elements, such as lexicon or syntactic accuracy. The author interpreted these findings as evidence of positive "carry-over across languages," offering initial evidence that warrants further research on cross-linguistic associations (Pearson, 2002, p. 149).

Muñoz and colleagues (2003) collected English narrative skills from a cross-sectional sample of 4- and 5-year old "predominantly English-speaking Latino children" also using the picture book *Frog, Where Are You?* (Mayer, 1969). These authors documented developmental progress at the level of syntax and story organization, but found that the length of children's narratives did not vary significantly by age. Length was calculated using two measures of narrative productivity—total number of words (TNW) and total number of different words (TDW). None of these measures was a sensitive indicator of English narrative development in their sample of young, low-SES Latino children. These authors suggest that measures of narrative productivity that are commonly used with English monolinguals might not be sensitive for Spanish/English bilinguals from low-SES families.

Gutiérrez-Clellen (2002) compared spontaneous narrative production (also elicited with the frog-story picture books) with story recalls and story comprehension in English and Spanish for fluent bilingual children. Her findings showed that children performed significantly better in spontaneous narrative production than in story recalls, suggesting that narrative assessments that seem comparable may pose different processing demands on bilingual speakers. Narrating in the presence of a picture book seems to offer a high level of scaffolding via the contextualized pictures that facilitates performance. Examining narration with context might mask difficulties

with more decontextualized discourse features. On the basis of these results, branching out research with alternative narrative elicitation procedures seems like a valuable enterprise. Findings from these narrative studies and their calls for further research led us to conduct an in-depth study of narrative quality.

The critical role of vocabulary development, the limited number of studies that have investigated narrative performance of Spanish/English bilingual students, and the need to further examine the development of and associations between these oral language skills motivated the present study.

In this article, we describe the vocabulary and narrative skills of 24 low-SES Spanish/English bilingual children who were followed longitudinally from kindergarten to first grade. We used standardized vocabulary scores and measures of narrative productivity and quality based on natural speech samples to answer the following questions:

- What are the vocabulary, narrative productivity, and narrative quality skills in English and Spanish for this group of bilingual children? How do these skills change over time from kindergarten to first grade?

- How are vocabulary, narrative productivity, and narrative quality skills related to each other within and across languages?

- What kindergarten oral language measures predict first-grade narrative quality in each language?

METHOD

Participants

We examined data from a subsample of 24 low-SES bilingual children that was drawn from the larger sample of the ECS (see Páez et al., in press; Tabors et al., 2003). ECS participants were recruited by contacting parents in Head Start and public preschool programs in three communities in Massachusetts and one community in Maryland. All of the children were 4 years old at the time of recruitment and were age-qualified to attend kindergarten the following year. In addition, the children in the sample were living in homes where Spanish was spoken. Children with severe special needs and/or global delays (i.e., children with physical or mental/ emotional impairments or specific learning disabilities who needed special education and related services) were excluded from the sample.

During the first year of the ECS, a small group of participating children and their families was invited to participate in a more intensive data collection project that included home visits, parent interviews, and classroom observations. Selection was based on representation of the emerging language profiles[1] that were distilled from the preschool language and literacy skills assessments of the 300 bilingual children participating in the ECS. Given that vocabulary skills have been identified as a predictor of narrative performance (De Temple & Tabors, 1996) and reading comprehension (Dickinson & Tabors, 2001) for monolingual populations, it was important to have enough variability in vocabulary skills to explore the associations between vocabulary and narrative measures over time.

From this subsample group, the 24 children with complete vocabulary and narrative data were included in the present analysis. The sample of the present study includes kindergarten and

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[1]Specifically, children's prekindergarten vocabulary scores in English and Spanish on the Picture Vocabulary subtest of the Woodcock Language Proficiency Battery—Revised (WLPB–R; Woodcock, 1991; Woodcock & Muñoz-Sandoval, 1995) were considered to guarantee representation of children who displayed high levels of vocabulary skills in both languages, high levels in either English or Spanish, and low levels in both languages. See López, 2005, for more information on the selection and procedures for the ECS subsample.

first-grade measures and is balanced in terms of gender. During data collection, all children were enrolled in public school districts.[2] All children received English language and literacy instruction as part of their school program, but a small number of students (8) also had instruction in Spanish as they participated in a two-way English and Spanish program.

Description of the Sample

The 24 children were assessed in English and Spanish at the end of kindergarten in 2003 (Time 1) and at the end of first grade in 2004 (Time 2). The sample mean age for the data collection during kindergarten was 5.58 and for first grade was 6.57. The majority of the children in the sample were born in the United States (83%), and 4 children (17%) were born in different countries in Latin America.[3] Although most of the children in the sample were born in the United States, their parents came from 13 countries in Latin America and the Caribbean, as well as the U.S. territory of Puerto Rico. Three children in the sample did not have a father or male figure present in the home.

Information on language use at home, parental years of education, and family income revealed that all children were exposed to Spanish at home and were from a low-SES background. Of the participating families, 14 (58%) mothers reported speaking only Spanish at home, 9 (38%) reported speaking mostly Spanish, and only 1 reported speaking mostly English at home. Nine (42%) fathers reported speaking only Spanish at home, 6 (28%) reported speaking mostly Spanish, 2 (10%) reported speaking Spanish and English equally, 2 (10%) reported speaking mostly English, and 2 (10%) reported speaking only English at home. The average years of formal maternal education ($M = 12$, $SD = 3.73$) was slightly higher than that for paternal education ($M = 10.38$, $SD = 3.65$). In terms of family annual income, 17 (71%) of the families in the sample reported making less than \$30,000, with 8 (33%) of them reporting annual incomes of less than \$10,000.

Procedure

One-on-one assessment sessions were conducted at the school sites and lasted approximately 45 min. During the assessment session, children were allowed to discontinue the testing situation at any time. All children included in this sample completed the entire assessment battery. Children were assessed on two different days, once in English and once in Spanish. The order of language was determined pseudorandomly for each child based on the availability of the assessor and particular testing times.

Two teams of assessors, composed of native speakers of each language, received extensive training on administering the assessment battery. Before assessing a child, the assessor spent some time in the classroom getting to know the child. Assessors spoke only in the language of the assessment during both the warm-up sessions in the classroom and the assessment sessions. Separate language teams assessed children to minimize code switching by the students during testing sessions. The same procedures were used for data collection at Time 1 and Time 2.

Narrative Task

To facilitate comparison of narratives across languages and ages, narratives were collected in both languages in kindergarten and first grade using the same elicitation procedure. The pictures offered a main plot (girl/dog get lost, family looks for her/them, and finally father

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[2]Because children in the ECS were recruited at the preschool level before enrolling in public school programs, the sample could not be balanced according to language program. However, recruitment targeted sites that would allow for variability in choices of language instruction.

[3]All family demographic information is derived from the parent survey that was administered by telephone or in person during the 2001–2002 academic year. Most of the interviews were done with the mothers of the participating children and lasted 15 to 20 min. All of the families ($n = 24$) in this analytic sample completed this interview.

finds her/them), but still offered some ambiguities in order to allow for legitimate elaborations. For example, children could elaborate on whether both the girl and the dog got lost or only the girl, whether the dog belonged to the family or not, or the girl's motivation/goal for running away. While the children looked at the pictures, the experimenter said to the child: "I have some pictures here that tell a story. I want you to look at them as long as you want and then I am going to take them away. After I take them away, I want you to tell me a story about what happened in the pictures." After the child had carefully examined the three pictures, the experimenter removed the picture set from sight and said: "Tell me what happened in the pictures." Once the child started to narrate, the experimenter would ask only minimal questions: "Is that all?" or "Anything else you want to tell me?" until the child declared that the story had ended or stopped talking.[4]

Narratives were fully transcribed by bilingual transcribers following the CHAT conventions from the Child Language Data Exchange System (CHILDES; MacWhinney, 2000). All narratives were transcribed by a trained bilingual researcher who listened to the tape repeatedly throughout the process and again at the end in order to compare the full transcript with the original recording. A verification process was conducted in which a different bilingual researcher listened to all narratives to check the fidelity of each transcript. Disagreements between transcriber and verifier were resolved by listening to the tape together one more time.

Measures

Data for three language measures are reported in this article: standardized oral vocabulary scores, narrative productivity, and narrative quality. Two measures of productivity and two measures of quality were generated for 96 narratives—24 in each language at kindergarten and first grade.

Expressive vocabulary—The Picture Vocabulary subtests in English and Spanish (Vocabulario Sobre Dibujos) from the Woodcock Language Proficiency Battery—Revised (WLPB–R; Woodcock, 1991; Woodcock & Muñoz-Sandoval, 1995) were administered to all students. Children selected pictures to match words and were asked to say a word when shown a picture. Although a child's receptive vocabulary skills are measured at the beginning of this test, this is primarily an expressive vocabulary task and was used to index students' expressive vocabulary.

Narrative productivity—Two measures of word frequency counts were generated using the FREQ program from CLAN (MacWhinney, 2000): TNW as a measure of narrative length and TDW as a measure of lexical diversity in narratives.

Narrative quality—Based on an adaptation of Pearson's (2002) narrative coding scheme, a total narrative quality (NQ) score was derived for each narrative by adding up scores for two components of quality: story and language (see the Appendix for a copy of the narrative coding scheme). The story score (SS) is an holistic score consisting of a set of measures aimed at capturing "the child's ability to use a hierarchical story structure, maintain a clear flow of information, and include evaluative…statements in recounting the events" (Pearson, 2002, p. 141). The SS includes coding and scores for three subcomponents: story elements, story sequence, and perspective. The language score (LS) "examined the more purely linguistic aspects of the children's performances" (Pearson, 2002, pp. 141–142). The LS includes subcomponents' scores of complex syntax, noun lexicon of the story, and reference clarity.[5]

[4]The narrative procedures are similar to the procedures followed in the Home School Study of Language and Literacy Development (Dickinson & Tabors, 2001). Pictures were taken away to prevent children from describing the pictures and to promote narration of a story. These procedures have been found effective and reliable with monolingual populations of the same age.

All narratives were coded for quality by the same bilingual researcher. To establish reliability, a second bilingual rater who was blind to the participants' identity and other background information coded 10% of the narratives. Cronbach's alpha interrater reliability scores for the SS and LS equaled .91 and .95, respectively, which indicate high levels of intercoder agreement.

Data Analysis

As a first step, measures of central tendency and measures of variance were calculated for the standardized vocabulary scores of the WLPB–R,[6] the two measures of narrative productivity (TNW and TDW), and the three measures of narrative quality (NQ, SS, LS). These analyses were done for the two waves of assessment data in both languages.

Interpretation of the results on the WLPB–R vocabulary scores for bilingual children is based on norms that were developed for monolingual children. At the moment of data collection, there were no tests normed on bilingual populations to measure these skills. Furthermore, a current review of the literature by the National Institutes of Health and the U.S. Department of Education noted that "a comparison group of English-speaking monolinguals is not always the optimal comparison group for bilingual individuals; however, for purposes of studying ELL students in the U.S. education system including such comparisons can be important" (McCardle, Mele-McCarthy, & Leos, 2005, p. 70).

Repeated-measures multivariate analysis of variance (MANOVA) procedures were conducted to investigate the primary variables in this study: vocabulary, narrative productivity, and narrative quality. The MANOVA procedure was done to control for family-wise error and to investigate the effects of individual factors as well as interactions among factors (Keppel, 1991). In this analysis, there were two within-subject factors, each with two levels: time (Time 1, Time 2) and language (English, Spanish).

To clarify differences that were found to be significant in the MANOVA analysis, post hoc paired-samples t tests were used. Effect sizes of these comparisons were determined by computing the value of Cohen's d using the means and standard deviations for the scores.[7] Additionally, Levene's test of homogeneity was used in testing for possible violations of homogeneity of variance (Levene, 1960). To examine the diversity of English and Spanish language skills in our sample, we used graphic displays such as scatter plots that combine children's skills and are effective for displaying dual language abilities.

Second, bivariate correlations were estimated to investigate relationships between different measures within language and across language at both testing times. Third, regression analyses were conducted to predict first-grade narrative quality skills based on kindergarten measures. These ordinary least square regression analyses were conducted separately for English and Spanish narrative quality. Models were fitted to examine the effects of vocabulary and productivity (TDW) on English narrative quality in order to build a baseline control model and then test for the effects of Spanish narrative quality variables. Interactions between the variables were tested to determine if the effects of one variable differed by the level of another variable. For each of the fitted models, the assumptions of regression analysis were examined by

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[5]Pearson (2002) includes the coding of reference under perspective in the story score for her analysis of second graders' and fifth graders' narratives. However, given our age group, we included the coding of unclear references under the language score because at this age, referential strategies are only being established and serve as indicators of the development of linguistic forms rather than indices of a narrator's perspective.

[6]Raw scores for each of the subtests were converted into standard scores using the Woodcock Compuscore and Program Profiles software program.

[7]Throughout the Results section, effect sizes will be reported for hypothesis tests using the set of conventions defined by Cohen (1988): *small* equals 0.20, *medium* equals 0.50, and *large* equals 0.80.

checking residual distributions and univariate statistics using the Wilks-Shapiro *W* statistic (Shapiro & Wilk, 1965) and inspecting scatter plots of the residuals.

RESULTS

Descriptive Results and Patterns of Change

Vocabulary—The means, standard deviations, and ranges for standard vocabulary scores are presented in Table 1. The average standard scores on English and Spanish vocabulary for the sample were below average compared to monolingual norms at both testing times. The scores in kindergarten and first grade show great variability, with standard scores ranging from 23 to 120 in English, and 22 to 113 in Spanish, across testing times.

A significant effect of time was found for vocabulary, $F(1, 22) = 5.65$, $p < .05$. Post hoc tests showed, on average, significant improvements in English, $t(23) = -4.89$, $p < .001$; $d = .43$, but no significant differences in Spanish.

Figures 1 and 2 display Spanish by English standard vocabulary scores for individual children in kindergarten and first grade, respectively. These figures illustrate the diversity of vocabulary skills for children in the sample and also show their patterns of dual language abilities (i.e., combined English and Spanish skills). English vocabulary scores in first grade show great variability, as 3 children performed 1 *SD* or more above average (≥116), 11 performed at an average range (85–115), 2 performed 1 *SD* below average (70–84), and 8 performed 2 *SD* or more below the mean (≤69). Spanish vocabulary scores in first grade show less variability, with more children performing lower in the distribution: 6 performed at an average range (85–115), 4 performed 1 *SD* below the average (70–84), and 14 performed 2 *SD* or more below the mean (≤69). Despite these considerably low scores, the figures show that no child scored at the bottom of the distribution in *both* languages. Still, 7 kindergartners displayed scores that were more than 2 *SD* below the standardized mean of 100 in Spanish and English (see Figure 1). In first grade, 3 out of these 7 children continued performing 2 *SD* below the mean in both languages (see Figure 2). Only 1 child scored consistently above the monolingual mean in both languages in kindergarten and first grade.

Although English vocabulary showed overall improvement over time, it is important to highlight that 8 children performed more than 3 *SD* below the monolingual mean in kindergarten. These 8 children were still at the bottom of the distribution of English scores in first grade, with 5 children still scoring more than 3 *SD* below the mean.

Narrative skills—Most children engaged easily in the narration task. In kindergarten, only 1 child refused to produce a narrative in both languages, and another child produced a narrative only in English. In first grade, all children produced two narratives. The majority of children narrated exclusively in the language in which the narrative was elicited, although some exceptions were noted and coded. In general, there were more instances of code switching in first grade compared to kindergarten, and code switching from Spanish to English was more prevalent than vice versa. Code switching was not the focus of this study, and given the overall low frequency of code switches in this sample, they were excluded from further analysis.[8]

The means, standard deviations, and ranges for the narrative productivity measures TDW and TNW are listed in Table 1. The effect of time approached significance, $F(2, 21) = 3.48$, $p = .$

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[8]In kindergarten, only 2 children code switched into English occasionally when narrating in Spanish. In first grade, 8 of the 24 children code switched into English, but 6 of them produced only five or fewer instances (usually the word *and*). In Spanish-elicited narratives, 1 first grader produced 12 English words out of 57; another produced 25 English words out of 72.

05, with post hoc analysis showing only a significant increase for English TDW, $t(23) = -2.39$, $p < .05$; $d = .36$). No significant differences by language were found.

Descriptive information for the measures of narrative quality including total narrative quality (NQ) and the subcomponents of story score (SS) and language score (LS) can be found in Table 2. A significant time effect was found for all measures: SS, $F(1, 22) = 8.86$, $p < .01$; LS, $F(1, 22) = 6.94$, $p < .05$; and NQ, $F(1, 22) = 9.66$, $p < .01$). Post hoc tests showed significant improvements in all English measures: SS, $t(23) = -2.85$, $p < .01$; $d = .45$; LS, $t(23) = -2.61$, $p < .05$; $d = .45$; and NQ, $t(23) = -3.21$, $p < .01$; $d = .49$. In Spanish, however, significant gains were found only for SS, $t(23) = -2.20$, $p < .05$; $d = .42$. A significant language effect was also found for SS, $F(1, 22) = 6.47$, $p < .05$. On average, children in the sample performed better in English than Spanish for this measure of narrative quality. This pattern was evident in both kindergarten (Time 1) and first grade (Time 2).

To better characterize dual language skills in narrative quality, Figure 3 displays Spanish by English NQ scores in first grade. As displayed in the figure, children in the sample showed a diversity of narrative abilities. In contrast to vocabulary skills, this scatterplot suggests a positive association between Spanish and English narrative quality skills. This association is further examined in the correlational analysis.

Relations among narrative and vocabulary skills—Tables 3 and 4 display the within-language correlations between vocabulary, narrative productivity, and narrative quality measures for English and Spanish, respectively. Results revealed a positive, moderate association between vocabulary and narrative quality measures within language at both testing times. Children with larger English vocabularies tended to have higher scores on the English narrative quality measures. Note the correlation between English vocabulary and story score was found to be consistent and moderate in magnitude at both testing times ($r = .55$, $p < .01$, see Table 3). This association was also found for Spanish ($r = .56$, $p < .01$, see Table 4).

Results also show associations among narrative productivity and narrative quality measures. TDW associations with quality measures were slightly stronger in magnitude and more consistent over time than were the associations with TNW. In addition, both productivity measures displayed associations of greater magnitude with language score than with story score (see Table 4). There were no significant associations between vocabulary and TNW or TDW in English. In Spanish, there was a significant correlation between vocabulary and Spanish TDW only in kindergarten ($r = .50$, $p < .05$), but no other associations were found.

Cross-language relations—Narrative productivity measures exhibited cross-language associations only in first grade. Moderate associations were detected for first-grade TNW ($r = .47$, $p < .05$) and for first-grade TDW ($r = .45$, $p < .05$).

Consistent cross-language associations were identified for selective narrative quality skills (see Table 5). Although language score did not display any associations across languages, story score and total narrative quality had a moderate association across languages at both testing times. The cross-language association for story score ($r = .59$, $p < .01$ in kindergarten; $r = .60$, $p < .01$ in first grade) is moderate and consistent over time. Children who had higher story scores in Spanish tended to have higher story scores in English. Similarly, children who achieved a high total narrative quality score in one language tended to have a high total narrative quality score in the other language.

Predicting First Grade Narrative Quality: Regression Analyses

Table 6 displays the models fitted to predict first-grade English narrative quality using kindergarten measures in English and Spanish. Predictors for these models were selected based

on correlations among kindergarten and first-grade measures. Step 1 shows the simple effect of kindergarten English vocabulary on first-grade English narrative quality. Variation in vocabulary scores explained 30% of the variation in narrative quality, and the association was positive. On average, higher English vocabulary scores in kindergarten would predict higher English narrative quality in first grade for these bilingual children. In Step 2, we added kindergarten TDW in English and found significant effects for both vocabulary and TDW. As a result, the variation explained increased to 44%. To test the contributions of narrative skills across languages, we added the Spanish story score from kindergarten, as displayed in Step 3. Interestingly, kindergarten Spanish story score was found to have a significant effect on first-grade English narrative quality, even when controlling for vocabulary and TDW. The additional variation explained by Spanish narrative skills was significant, and this final model explained 59% of the variation in English narrative quality. We tested for the effects of language program and interaction effects between language program, vocabulary, and narrative measures and none were significant.[9]

Table 7 displays the regression results for predicting Spanish narrative quality in first grade based on kindergarten measures. Step 1 shows the significant effect of kindergarten Spanish vocabulary on Spanish narrative quality. On average, in Spanish, children with higher levels of vocabulary in kindergarten will display higher narrative quality skills in first grade. It is important to note that TDW in Spanish was not significant and did not explain additional variation in Spanish narrative quality when it was added to the model. This was also the case for English narrative quality, as displayed in Step 2. Thus, children's Spanish vocabulary in kindergarten proved to be the only significant predictor of Spanish narrative quality, explaining 45% of the variation. We tested for interaction effects and none were significant.

DISCUSSION

This study examined patterns of change and associations among English and Spanish vocabulary and narrative skills with the ultimate goal of predicting narrative quality in a longitudinal sample of low-SES bilingual children who were followed from kindergarten to first grade. Significant gains from kindergarten to first grade were found for all English oral language measures. Despite showing improvements in English vocabulary, the majority of children continued to score below the monolingual mean in first grade. For English narrative productivity, TDW proved to be a sensitive developmental measure, in contrast to TNW. In Spanish, significant gains were noted only for narrative story score. Narrative story scores displayed significant and consistent cross-language associations. Regression analysis showed that kindergarten Spanish story structure predicted first-grade English narrative quality even when controlling for the effects of English vocabulary and English narrative productivity. Spanish narrative quality was best predicted by kindergarten Spanish vocabulary. These findings highlight the complex relations at play in the language development of bilingual children. Below, we interpret these findings in relation to previous research, underscore the limitations of this study, and conclude with a discussion of implications for practice.

Vocabulary, Bilingualism, and SES

Our findings regarding the low levels of English vocabulary skills relative to monolingual norms are consistent with those reported in previous research with low-SES Spanish/English bilingual children (Lindsey et al., 2003; Manis et al., 2004; Pearson, 2002). Interpreting the vocabulary scores of bilingual children in the United States is a complex yet necessary task with practical implications. On the one hand, experts' advice is to avoid interpretations in terms

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[9]Even though the impact of language program was not the focus of this paper or analysis, we wanted to check that the predictive relationships did not differ across programs.

of deficits when comparing bilingual children's scores to monolingual norms. As Pearson, Fernández, and Oller (1995) documented, when considering the "total conceptual vocabulary," that is, the words a child knows in one and/or the other language, bilingual children's skills may equal or exceed that of monolinguals. In some cases, however, that will not be the case, and children might be at a serious disadvantage in one or both languages. In all cases, knowledge of both languages should be taken into consideration when assessing these children (Cobo-Lewis, Pearson, Eilers, & Umbel, 2002). On the other hand, bilingual children's performances on these widely used assessments offer an estimate of the distance between these children's skills and those of their monolingual peers. Even though it is expected that a bilingual child's vocabulary measured only in one language would not match that of a monolingual speaker, when bilingual children's vocabulary levels are too low in the language in which they are learning to read, these young learners will certainly encounter difficulties. In this study, a majority of kindergartners displayed considerably low vocabulary scores (more than 2 *SD* below the population mean), and scores continued to be low during first grade—a crucial year for learning how to read. Given the well-documented link between expressive vocabulary and early reading ability (Snow et al., 1998), these findings suggest that this group of young bilingual children may well be at risk for early literacy development.

However, it is necessary to point out that a few children did score above the monolingual population mean in English, and 1 child scored above the population mean in both languages in kindergarten and first grade. These cases suggest that delays in lexical development cannot be interpreted solely as a consequence of bilingualism, but also as a result of the interaction between a bilingual context and the challenges faced by an environment of economic hardships and low levels of parental education. Hart and Risley (1995) documented the role of SES as a significant factor associated with vocabulary in children between 10 and 36 months of age. These authors documented differences in children's lexical environments, reporting that by age 3, children from privileged families have heard 30 million more words than children from underprivileged families (Hart & Risley, 2003). Given the large impact of SES documented on monolingual vocabulary development, it is crucial to consider the effects and interactions among risk factors such as sociocultural context and linguistic factors (e.g., learning to read in a poorly developed language). One of the limitations of this study, however, is the focus on associations between language measures without considering some of these important factors. Future research with large longitudinal samples is needed to investigate the influence of home and school variables on education and to identify factors that enable some low-SES bilingual children to strive and achieve above-average skills and eventual literacy success.

Narrative Productivity, Narrative Quality, and Assessment

In assessing narrative productivity, TNW failed to capture meaningful developmental changes for these children, a finding that has already been documented by Muñoz et al. (2003). However, in contrast to Muñoz and colleagues' findings, TDW was found to be a sensitive developmental measure. This discrepancy might arise from the different elicitation procedures used in these two studies or from the differences in age of participants.[10] Based on their findings, Muñoz and colleagues suggest the potential inappropriateness of monolingual measures for the assessment of bilingual narrative development. Given our findings, further research is needed to determine if indeed these productivity measures are appropriate for capturing bilingual children's narrative development. Another important issue that needs further investigation concerns the elicitation procedures in narrative research with bilingual children. Gutiérrez-Clellen (2002) discussed how different elicitation procedures might pose

[10]In fact, Muñoz and colleagues (2003) might have failed in finding a significant change in TDW due to the small gap between their two age groups. The range of the older group was from 60 to 66 months; the range of the younger group was from 46 to 56 months. In other words, some children assigned to two different groups differed by only 4 months of age.

different challenges, and therefore, research needs to take into consideration interactions between narrative task and narrative measures.

In line with past research, findings from this study confirm identifiable developmental changes in bilingual narrative quality skills (Gutiérrez-Clellen, 2004; Muñoz et al., 2003). Pearson's (2002) analytical framework of assessing narrative quality using story score and language score proved to be useful in detecting developmental gains in this group of young children. These two measures of quality showed interesting relationships within and across languages and also demonstrated distinct patterns of change. On average, children showed significant gains in both English quality measures, whereas in Spanish, only story scores displayed improvements. Despite the lack of significant development in the overall language component, the ability to organize a story continued to improve in Spanish. Although Pearson applied her scoring to an older bilingual sample of second and fifth graders, the current adaptation of her scoring system offers additional evidence for the sensitivity of these analytical dimensions to narrative quality changes in younger bilingual children.

Associations Across Skills and Across Languages

Our results suggest that there are different trends in the development of vocabulary and narrative skills for this sample of bilingual children. Vocabulary was positively, but only moderately, associated with narrative skills. This association was found for these measures within each language, Spanish and English. These results suggest that vocabulary and narrative might constitute two sets of skills that positively influence each other, but that might develop at different rates in bilingual children. Future research comparing these children's narratives to those of monolingual speakers is needed to further understand similarities and discrepancies in their discourse development.

Despite some emerging evidence of a positive contribution of Spanish vocabulary to English literacy in the later years of elementary school (Nagy, García, Durğunoglu, & Hancin-Bhatt, 1993; Proctor, August, Carlo, & Snow, 2006), this study did not find cross-linguistic associations in vocabulary at these earlier ages. In contrast, Spanish story scores displayed significant cross-linguistic associations. Our findings are similar to those found by Pearson (2002) with a sample of second and fifth graders in Florida. In addition, our regression analyses showed that kindergarten Spanish story structure predicted first-grade English narrative quality even when controlling for the effects of English vocabulary and English narrative productivity. This study was not designed to address whether this finding suggests transfer of skills, simultaneous development in both languages, or yet a common underlying cognitive skill. Still, the contribution of a specific narrative skill in Spanish to English narrative quality is of particular importance. Studies with larger samples are needed to confirm this finding and to explore the potential for Spanish skills to contribute to children's English narrative quality.

Language Attrition

Finally, this study points to the early vulnerability of these bilingual children to language loss in the context of acquiring a societal language as an additional language. English skills were, on average, higher than Spanish skills in kindergarten, and for some skills, the gap between the languages only increased over time. This pattern should not only alert us about the power of the societal language, but make us reflect about how we can best describe the multiplicity of dual language levels in bilingual children. Although English constitutes a language that coexists with Spanish for these children, this coexistence can take multiple forms due to different constellations of skills mastered at various proficiency levels in each language.

IMPLICATIONS FOR PRACTICE

The early school years have been identified as an important time to evaluate children's prereadiness skills for reading acquisition (Snow et al., 1998). Findings from this study can be used by researchers and practitioners who are trying to better understand the development of oral language proficiency in Spanish/English bilingual students from low-SES backgrounds. Although the sample size in this study was small, findings show the diversity of skills that exist among these students and denote the importance of further investigation on the development of oral language proficiency for this population. On the basis of our findings, we have three recommendations for professionals (SLP, special educators, and reading specialists) to consider in their educational planning for this population of students.

First, implement active screening and assessment early in the school-age years. Practitioners should assess language abilities in the child's first language, as well as in English, to monitor the child's progress in oral language skills from kindergarten to first grade. Knowledge of the child's dual language abilities (i.e., Spanish and English combined skills) can help professionals identify those students who might be at risk due to low levels of skills in both languages. In addition, low levels of English vocabulary skills, regardless of the level of Spanish vocabulary, pose particular challenges and possible difficulties for children as they begin learning to read. Researchers in the area of bilingual language development (e.g., August & Shanahan, 2006) are urging literacy programs to target vocabulary to support oral language development in English, which in turn could contribute to literacy success.

Second, attention should be paid to different components of oral language ability such as vocabulary knowledge and the language versus story features involved in narration. Our findings indicate that vocabulary and narrative skills can have different developmental trajectories in Spanish and English, and perhaps should be considered independently for assessment and targeted instruction. Moreover, word knowledge and the language features of narrative discourse seem to develop independently in each language, at least at this early age. Practitioners working with kindergarten and first-grade students should make sure they provide a rich language environment that allows for the development of these skills in the chosen language(s) of instruction. Future studies in this area should further explore the relationship between these components of oral language proficiency to provide more concrete recommendations for instructional support.

Finally, our cross-language findings for narrative quality at story level suggest that story structuring skills in Spanish can contribute to narrative quality in English. This finding is of particular importance and, if confirmed with future research, could have important implications. For example, it would suggest that if children hear, engage, or tell stories in Spanish with friends, family, or at school, the learned set of skills required to structure a story in Spanish could positively contribute to children's English narrative quality. Considering the limitations of this study and our small sample size, we offer this finding not as a final conclusion, but as a promising area for future inquiry with implications for practice.

We are not arguing here that vocabulary and narrative constitute an exhaustive assessment of bilingual children. To the contrary, the full array of school-relevant skills that need to be assessed in bilingual children is still an unanswered question. Recent research suggests that other areas such as oral comprehension might also be crucial (Gutiérrez-Clellen, 2002). Also, the limited size of the present sample might have obscured some significant relationships. Only further research can confirm the patterns described here. Future research with the ECS data will allow us to examine how different home and school factors contribute to performance differences over time; for example, we will be able to explore the connection of the narrative and vocabulary skills documented here with longitudinal data on reading comprehension. In

addition, future analyses will model how individual growth trajectories vary systematically as a function of selected language and contextual variables, such as characteristics of the individual children, language background, and language experiences at home and at school.

Capturing and interpreting the variety and complexity of interrelationships among language skills within and across languages in bilingual children constitutes one of the main challenges in educational research nowadays. These are the children who are presently pushing forward our thinking, our research, and our practice. In unraveling the complexities of how school systems can better serve them, the lessons we will learn, and the successful assessments and instructional practices we will develop, will in the long term be of great benefit for all children, multilingual or monolingual.

Acknowledgments

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APPENDIX. NARRATIVE QUALITY CODING SHEETS

STORY SCORE

Child's ID:_____   Year:_____   Language:_____

Story Elements

+2 girl/dog gets lost / (+1 dog runs away; +1 girl runs after dog)
+2 someone looks for them / (+1 someone runs after them)
+2 father finds them / (+1 father gets them)
+1 offers setting (up to +2)
+1 articulates goal
+1 additional related events
+2 offers resolution

_____ points (max. 12 points)

Sequence

0 No performance/incomprehensible rendition
2 Picture description
4 Disorganized narrative
5 Isolated events
6 Incomplete narrative sequence

8 Minimal complete sequential plot
10 Hierarchical structure: beginning/middle/end
12 Hierarchical structure + highpoint

(−1 for irrelevant details)

_____ points (max. 12 points)

Perspective / Affect

0 no perspective added (i.e., disorganized, descriptive)
4 neutral observer (requirement: plot elements –could be incomplete)
6 external perspective (reported speech, physical causality, formulaic
   opening/ending)
8 at least one feature expressing internal/complex perspective
   +1 internal state
   +1 intentions
   +1 defeats of expectations
   +1 explanations

_____ points (max. 12 points)

LANGUAGE SCORE

Child's ID:_____   Year:_____   Language:_____

Complex Syntax: Verbs

0 no verbs
2 up to three verbs
3 four or more verbs

English/Spanish:
+1 each modal verb/aspectual auxiliaries (up to 3)
+1 each subordinated clause (up to 3)

Spanish:
+2 for one subjunctive verb; +3 for 2 or more

_____ points (max. 12 points)

Complex Syntax: Between Clauses

0 no connectives at all
1 only *and, y*
3 no conjunctions beyond *and then, y pues, or entonces*

+1 for adversative connective (up to 1)
+1 for one causal connective (up to 2)
+2 for one temporal connective (up to 4)
+1 each aspectual marker (*still, already, todavía*) (up to 3)

_____ points (max. 12 points)

Lexicon

Circle if present by name (do not count code-switches).
Essential words: (−½ if child demonstrates not knowing the word)
+2 niña/girl (or equivalent forms)
+2 perro/dog (or equivalent forms)
+2 papá/father (or equivalent forms)

Additional words:
+1 mamá/mother (or equivalent forms)
+1 picnic (or equivalent forms)
+1 lago, río, agua/pond, river, water (or equivalent forms)
+1 familia/family
+1 pato/duck (or equivalent forms)
+1 fútbol/soccer + ½ other words

_____ points (max. 12 points)

Reference

−1 poor first mention of characters.
Lapses in reference: reader must ask 'who?'
−1 one defective reference; −2 two defective references; −4 five or more

Perspective / Affect

0 no perspective added (i.e., disorganized, descriptive)
4 neutral observer (requirement: plot elements –could be incomplete)
6 external perspective (reported speech, physical causality, formulaic
   opening/ending)
8 at least one feature expressing internal/complex perspective
   +1 internal state
   +1 intentions
   +1 defeats of expectations
   +1 explanations

_____ points (max. 12 points)

LANGUAGE SCORE

Child's ID: _____   Year: _____   Language: _____

Complex Syntax: Verbs

0 no verbs
2 up to three verbs
3 four or more verbs

English/Spanish:
+1 each modal verb/aspectual auxiliaries (up to 3)
+1 each subordinated clause (up to 3)

Spanish:
+2 for one subjunctive verb; +3 for 2 or more

_____ points (max. 12 points)

Complex Syntax: Between Clauses

0 no connectives at all
1 only *and, y*
3 no conjunctions beyond *and then, y pues, or entonces*

+1 for adversative connective (up to 1)
+1 for one causal connective (up to 2)
+2 for one temporal connective (up to 4)
+1 each aspectual marker (*still, already, todavía*) (up to 3)

_____ points (max. 12 points)

Lexicon

Circle if present by name (do not count code-switches).
Essential words: (−½ if child demonstrates not knowing the word)
+2 niña/girl (or equivalent forms)
+2 perro/dog (or equivalent forms)
+2 papá/father (or equivalent forms)

Additional words:
+1 mamá/mother (or equivalent forms)
+1 picnic (or equivalent forms)
+1 lago, río, agua/pond, river, water (or equivalent forms)
+1 familia/family
+1 pato/duck (or equivalent forms)
+1 fútbol/soccer + ½ other words

_____ points (max. 12 points)

Reference

−1 poor first mention of characters.
Lapses in reference: reader must ask 'who?'
−1 one defective reference; −2 two defective references; −4 five or more

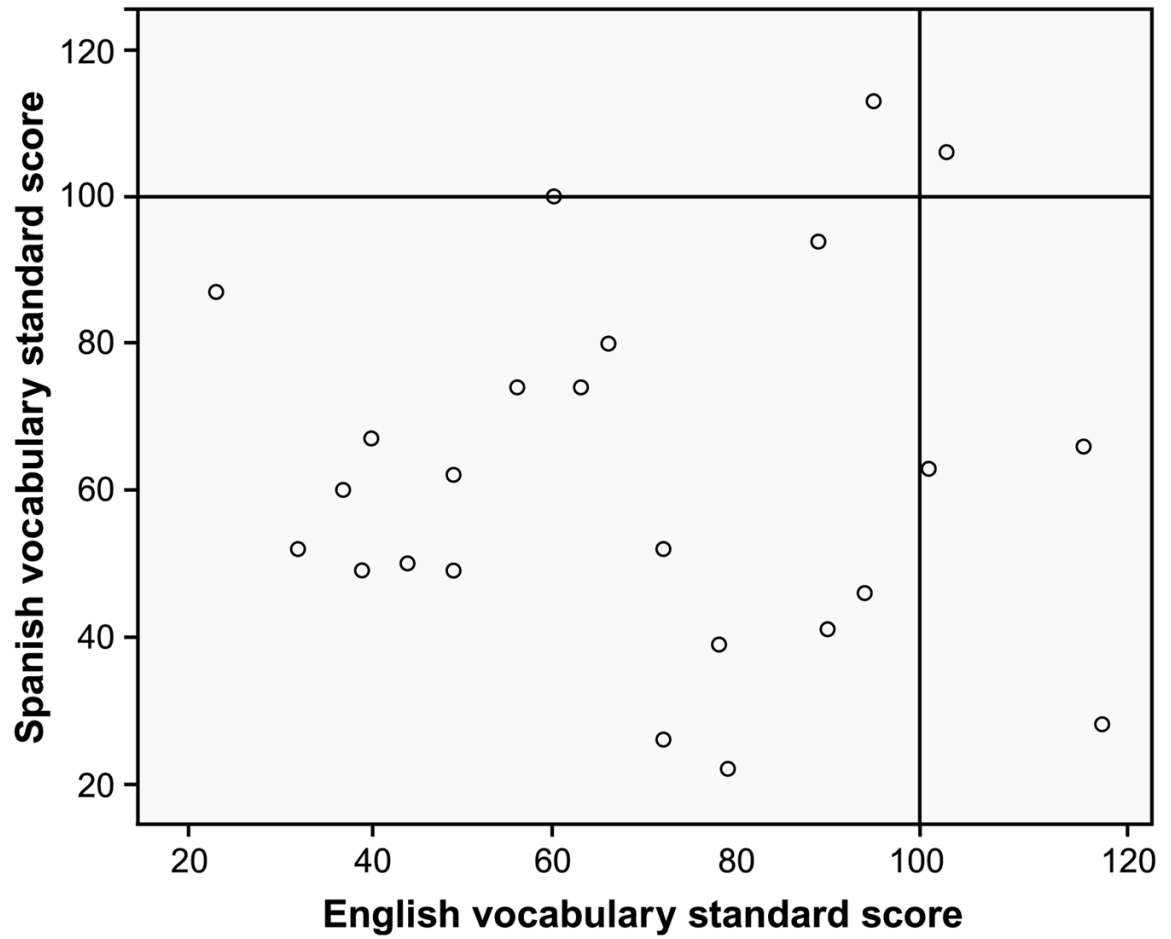**Figure 1.**
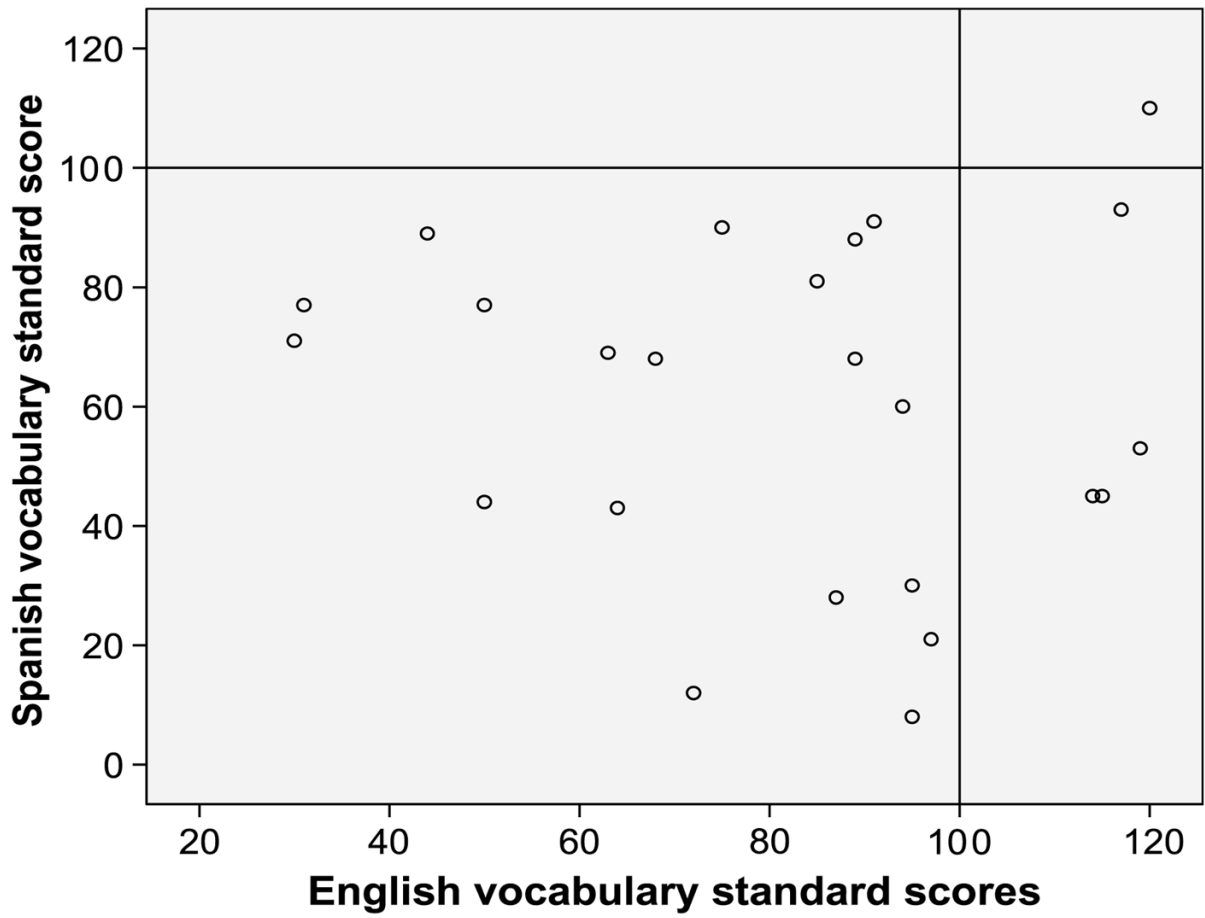Dual language abilities in kindergarten vocabulary skills (*N*= 24).

Figure 2.
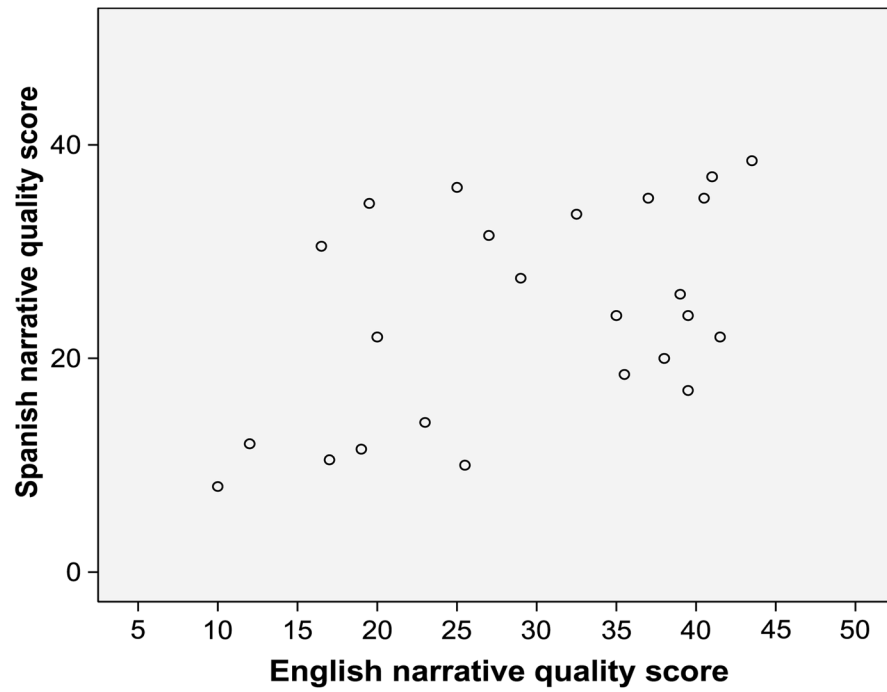Dual language abilities in first-grade vocabulary skills (*N* = 24).

Figure 3.
Dual language abilities in first-grade narrative quality ($N = 24$).

Table 1

Means of performance on vocabulary tests and narrative productivity for the Early Childhood Study sample (*N* = 24).

| | Vocabulary | | Narrative skills | | | |
| | | | TDW | | TNW | |
	K	1st grade	K	1st grade	K	1st grade
English						
M	69.54	81.42	21.38	25.54	38.29	45.67
SD	27.57	27.10	13.07	9.82	24.23	21.13
Range	23–120	30–120	0–70	7–50	0–111	9–93
Spanish						
M	62.50	60.87	20.79	24.92	35.79	42.50
SD	24.88	27.90	14.92	11.14	36.30	23.67
Range	22–113	8–110	0–69	8–52	0–178	10–116

Note. TDW = total number of different words; TNW = total number of words.

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Table 2

Narrative quality scores for the ECS sample (*N* = 24).

	Story score (SS)		Language score (LS)		Total score (NQ)	
	K	**1st grade**	**K**	**1st grade**	**K**	**1st grade**
English						
M	13.21	16.33	11.21	13.08	24.42	29.42
SD	6.76	7.22	3.97	4.40	9.94	10.39
Range	0–22	4–27	0–18	6–21	0–36	10–44
Spanish						
M	9.88	12.71	9.92	11.40	19.79	24.10
SD	7.21	6.21	6.16	4.36	12.75	9.82
Range	0–21	3–22	0–23	5–20	0–42	8–39

Table 3

Within-year correlations between English lexical measures—standardized vocabulary (VOC), TNW, and TDW—and English narrative quality measures.

	English SS	English LS	English NQ
Kindergarten			
English TNW	.40	.57**	.50*
English TDW	.33	.55**	.44*
English VOC	.55**	.45*	.55**
First grade			
English TNW	.47*	.75**	.64**
English TDW	.49*	.76**	.66**
English VOC	.55**	.19	.46**

*
$p < .05$.

**
$p < .01$.

***
$p < .001$.

Table 4

Within-year correlations between Spanish lexical measures—VOC, TNW, and TDW—and Spanish narrative quality measures.

	Spanish SS	Spanish LS	Spanish NQ
Kindergarten			
Spanish TNW	.63**	.77**	.73**
Spanish TDW	.73**	.84**	.82**
Spanish VOC	.68**	.63**	.69**
First grade			
Spanish TNW	.39	.67**	.55**
Spanish TDW	.48**	.79**	.66**
Spanish VOC	.56**	.49*	.57**

*
$p < .05$.

**
$p < .01$.

***
$p < .001$.

Table 5

Cross-language correlations among narrative quality measures: SS, LS, and NQ.

	English SS	English LS	English NQ
Kindergarten			
Spanish SS	.585**	.395	.555**
Spanish LS	.365	.327	.379
Spanish NQ	.507*	.382	.497*
First grade			
Spanish SS	.591**	.420*	.588**
Spanish LS	.187	.302	.257
Spanish NQ	.457*	.399	.486*

*
$p < .05$.

**
$p < .01$.

***
$p < .001$.

Table 6

Summary of hierarchical regression analysis for kindergarten variables predicting English narrative quality in first grade ($N = 24$).

Variable	B	SE B	β
Step 1			
English VOC	.21	.07	.54[**]
Step 2			
English VOC	.17	.06	.45[*]
English TDW	.31	.14	.49[*]
Step 3			
English VOC	.15	.06	.39[*]
English TDW	.31	.12	.39[*]
Spanish story structure	.58	.21	.40[*]

Note. R^2 = .30 for Step 1, .44 for Step 2, and .59 for Step 3; ΔR^2 = .14 for Step 2 (*ps* < .05) and ΔR^2 = .15 for Step 3 (*ps* < .05).

[*]
p < .05.

[**]
p < .01.

[***]
p < .001.

Table 7

Summary of hierarchical regression analysis for kindergarten variables predicting Spanish narrative quality in first grade ($N = 24$).

Variable	B	SE B	β
Step 1			
Spanish VOC	.27	.06	.67***
Step 2			
Spanish VOC	.25	.06	.63**
English story structure	.30	.23	.20

Note. $R^2 = .45$ for Step 1, and .49 for Step 2; $\Delta R^2 = .04$ for Step 2 (*ns*).

~
p < .10.

*
p < .05.

**
p < .01.

***
p < .001.