Cross-Linguistic Lexical, Grammatical, and Discourse Performance on Oral Narrative Retells Among Young Spanish Speakers

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This study investigated relations among microlevel and macrolevel domains of oral narrative retells within and across the languages of Spanish-speaking bilingual children. Fifty-six first and second graders ($M_{\text{age}} = 7$ years, 3 months) were assessed on a retell task in Spanish and English. Two statistical analyses were conducted: (a) correlations within and across microlevel lexical (number of different words) and grammatical (mean length of utterance-word and subordination index) domains and (b) hierarchical regression to determine the influence of microlevel domains on a macrolevel discourse score. Results highlighted a number of significant within- and cross-language correlations, and identified vocabulary as a significant predictor of macrolevel discourse scores within both languages, while grammar was a predictor within English only.

Reading comprehension is an area in which many second language learners struggle (Carlisle, Beeman, Davis, & Spharim, 1999; Munoz, Gillam, Peña, & Gulley-Faehnle, 2003; Roth, Speece, Cooper, & De La Paz, 1996), and researchers have begun to advocate the assessment of comprehension for such students through listening and retelling (Fiestas & Peña, 2004; Miller et al., 2006; Munoz et al., 2003). As such, oral narrative retells have been used extensively with this population in recent years (Bedore, Peña, Gillam, & Tsung-Han, 2010; Fiestas & Peña, 2004; Munoz et al., 2003; Rojas & Iglesias, 2013). The Oral Narrative Retell Assessment (ONR) requires children to understand a story that is heard and organize a coherent, detailed retell (Bedore et al., 2010). The processing demands of oral narrative retells are therefore similar to those needed to comprehend written text (Roth et al., 1996). Because of the joint comprehension and production demands, performance on this task is thought to align closely with written literacy skills (Allen, Ukrainetz, & Carswell, 2012). Like reading, oral narrative retelling is composed of microlevel (word or sentence) and macrolevel (discourse) components. Microlevel components of retells fall within lexical and grammatical domains and are commonly measured by counting the total number of words and number of different words (NDW) used. In the grammatical domain, mean length of utterance and degree of subordination are typically measured (Allen et al., 2012; Heilmann, Miller, Nockerts, & Dunaway, 2010; Miller et al., 2006). The macrolevel domain provides a holistic picture of a child’s understanding of higher order narrative skills and is assessed by measuring their ability to organize a coherent retell that includes key narrative elements. Discourse, as used in the current study, refers to “units of spoken text beyond the sentence level, and includes the ability to construct an original story and to retell a previously heard story” (Roth et al., 1996, p. 258).

Retells are considered more culturally relevant and ecologically valid than standardized tests for second language learners because they are a major component of the literacy curriculum and are not normed on monolinguals (Bedore et al., 2010; Gutiérrez-Clellen, 1998; Reese, Sparks, & Suggate, 2012). From an early age, children are expected to understand and use narrative form effectively, so assessment of such skill is appropriate and informative (Heilmann, Miller, Nockerts, & Dunaway, 2010). In addition, oral narrative tasks are not dependent on graphemic systems, so they can readily be compared across bilingual children’s two languages, providing a more comprehensive picture of their language and literacy proficiency (Snow, Tabors, Nicholson, & Kurland, 1995).

One large-scale study to date has shown a robust relation between performance in oral narrative retell domains and reading proficiency in Spanish-speaking
second language learners (Miller et al., 2006), but little is known about interrelations among lexical, grammatical, and discourse domains of oral narrative retells within this population, especially cross-linguistically. Scholars have noted the importance of attending to oral language and literacy skills in both languages (Gottardo & Mueller, 2009; Manis, Lindsey, & Bailey, 2004; Miller et al., 2006), and doing so has both practical and theoretical benefits. Practically, it highlights the contributions of various first (L1) and second (L2) language skills to the development of literacy in both languages (Droop & Verhoeven, 2003); theoretically, it identifies which linguistic skills are universal and which may be language specific (Goodrich, Lonigan, & Farver, 2013).

Research has shown different and sometimes contradictory patterns of correlation within and across the domains of oral narrative retells (Bedore et al., 2010; Heilmann, Miller, Nockerts, & D unway, 2010; Simon-Cereijido & Gutiérrez-Clellen, 2009). This article builds on the scant research base by reporting findings from a study that investigated relations among microlevel and macrolevel domains within and across languages for first- and second-grade Spanish-speaking second language learners. By looking at performance across languages, I have begun to identify the patterns of skill development that may affect the acquisition of literacy in children learning a second language (Simon-Cereijido & Gutiérrez-Clellen, 2009). Attention to microlevel and macrolevel domains makes it possible to examine children’s proficiency at various levels as well as to investigate relations among the various oral language skills that have been found to be significant for the development of literacy.

**Oral Language Development and Assessment for Second Language Learners**

The important role that oral language plays in the development of reading skill is well documented for both monolingual and bilingual children (Roth, Speece, & Cooper, 2002; Snow et al., 1995; Speece, Roth, Cooper, & De La Paz, 1999). For example, there is widespread agreement that phonological awareness is a key oral language predictor of future reading success (Bialystok, 2001; Bialystok & Herman, 1999; Carlisle et al., 1999; Durgunoglu, Nagy, & Hancin-Bhatt, 1993), and robust correlations have been reported in this domain between bilingual children’s two languages (Gottardo & Mueller, 2009; Hammer & Miccio, 2006). However, phonological awareness is only one of many oral language skills, and currently less is known about within- and cross-linguistic relations among the lexical, grammatical, and discourse domains of oral language for second language learners.

**Microlevel Domains**

Vocabulary is the primary component of the lexical domain, and it is an area of concern for many second language learners (August, Carlo, Dressler, & Snow, 2005; Carlo et al., 2004). There is widespread agreement in the literature about the predictive validity of L1 and L2 vocabulary in reading comprehension in the same language for children as young as first grade and as old as fourth grade (Carlisle et al., 1999; Droop & Verhoeven, 2003; Lindsey, Manis, & Bailey, 2003; Proctor, August, Carlo, & Snow, 2006; Proctor, August, Snow, & Barr, 2010; Proctor, Carlo, August, & Snow, 2005). In a large-scale study of 1,531 kindergarten through third-grade Spanish-English bilingual children in transitional bilingual classrooms, Miller et al. (2006) investigated relations between oral narrative retell performance, reading comprehension, and decoding in Spanish and English. They found that the NDW used in retells—a component within the lexical domain—accounted for a significant amount of variance in both comprehension and decoding within and across languages.

A child’s performance in the grammatical domain—often operationalized as awareness of morphology and syntax—is also a potential predictor of reading proficiency in second language learners of various ages (Droop & Verhoeven, 2003; Gottardo & Mueller, 2009; Lindsey et al., 2003; Manis et al., 2004), albeit a less robust one than phonological awareness or vocabulary. In the aforementioned Miller et al. (2006) study, grammatical complexity was measured using mean length of utterance, and again it was found to contribute significantly to variance in comprehension and decoding.

**Discourse Domain**

Macrolevel analysis of oral narrative retells focuses on discourse rather than word or sentence-level components. It is relevant to the development of literacy because the skills needed to be proficient in narrative discourse are also those needed to comprehend written text (Roth et al., 1996). Oral narrative discourse and written text share a prevalence of academic or low-frequency vocabulary, a
complex syntactic style, and a coherent overall organization.

Story grammar has historically been used to measure children’s discourse skills (Terry, Mills, Bingham, Mansour, & Marencin, 2013). Story grammar requires children to identify a story’s setting and features of its episodic structure, including the central problem, attempts to solve the problem, and consequences or outcomes of such attempts. However, Heilmann, Miller, and Nockerts (2010) contended that measures from the story grammar tradition focus too much on the recall of specific episodes and not enough on higher level narrative skills. Therefore, they argued that such tools might not be appropriate for assessing children beyond the emergent stage of literacy development. To that end, they developed the Narrative Scoring Scheme (NSS), which incorporates features of story grammar with elements such as character development, cohesion, and the use of metalinguistic and metacognitive verbs. The NSS is scored using a combination of discrete coding criteria and researcher judgment (Heilmann, Miller, Nockerts, & Dunaway, 2010). Miller et al. (2006) used the NSS to assess the retells of children in kindergarten through third grade and found scores on it to be significantly predictive of comprehension and decoding.

Relations Among Domains

A small amount of recent research using oral narrative retells has investigated relations among microlevel lexical and grammatical components both within and across the languages of second language learners. Simon-Cereijido and Gutiérrez-Clellen (2009) conducted a study with 44 preschool- and kindergarten-aged Spanish-English bilinguals using the Mercer Mayer Frog books (Mayer, 1969, 1973, 1974, 1975). They found strong within-language correlations between the two domains (Spanish lexical and Spanish grammatical, \( r = .71 \), \( p < .001 \); English lexical and English grammatical, \( r = .64 \), \( p < .001 \)) but no significant correlations between domains across languages (Spanish lexical and English grammatical, \( r = .18 \), ns; Spanish grammatical and English lexical, \( r = .15 \), ns). This largely corroborates findings from nonretell studies and provides support for the interdependence of domains within a language, but limited cross-linguistic relations among domains. However, Simon-Cereijido and Gutiérrez-Clellen did not calculate cross-linguistic correlations within the same domain, which could have provided information about those associations as well.

In a related study, Bedore et al. (2010) analyzed the spontaneous oral narratives of 170 kindergarten Spanish-English bilinguals using the Frog books (Mayer, 1969, 1974) in the interest of identifying how microlevel components that map onto lexical diversity and grammatical complexity converged with language ability. Finding relations among the domains was not the goal of the study, but correlations were nonetheless reported. Like Simon-Cereijido and Gutiérrez-Clellen (2009), Bedore et al. found highly significant correlations between lexical and grammatical domains within both languages (Spanish lexical and Spanish grammatical, \( r = .65 \), \( p < .001 \); English lexical and English grammatical, \( r = .57 \), \( p < .001 \)), but no significant correlations across languages between domains (Spanish lexical and English grammatical, \( r = .13 \), ns; Spanish grammatical and English lexical, \( r = .12 \), ns). They also analyzed components across languages within domains and found evidence of cross-linguistic correlations in grammatical complexity (Spanish grammatical and English grammatical, \( r = .26 \), \( p < .001 \)) but not in lexical diversity (Spanish lexical and English lexical, \( r = .12 \), ns).

Few studies to date have investigated the relations between oral narrative retell microlevel domains and discourse domain skills, and they have been conducted with only monolingual English speakers. Heilmann, Miller, and Nockerts (2010) examined the relations between lexical performance (measured using NDW), grammatical performance (based on mean length of utterance-morpheme and the subordination index [SI]), and scores on the NSS in a study of one hundred and twenty-nine 5- to 7-year-olds using the retell methodology. They sought to provide, “evidence for the role of vocabulary and grammar in the development of young school-age children’s narrative organization skills” (p. 157). Findings showed correlations between lexical and grammatical domains and macrolevel narrative skills (lexical and discourse, \( r = .58 \), \( p < .001 \); grammatical and discourse, \( r = .44 \), \( p < .001 \)).

Heilmann, Miller, and Nockerts (2010) also performed hierarchical regression analysis to identify the microlevel components that were the best predictors of macrolevel discourse skill. They found that children’s vocabulary was the only unique predictor of discourse skill. Grammatical complexity did not add significantly to the regression equation. They therefore proposed “a special and important relation between narrative organization and vocabulary skills that emerges prior to children becoming literate” (p. 161). This finding lines up with studies...
that have used standardized measures of vocabulary as predictors of reading proficiency (Droop & Verhoeven, 2003; Lindsey et al., 2003; Verhoeven, 2000), thus underscoring the potential value of the oral narrative retell as a complementary assessment tool to identify the strengths and challenges that second language learners face with regards to reading.

One other study that investigated associations between microlevel and macrolevel domains of retells was conducted with preschool-aged African American children (N = 146; Terry et al., 2013). In line with Heilmann, Miller, and Nockerts’s (2010) findings, they reported highly significant correlations between lexical and grammatical components and discourse skill (lexical and discourse, r = .51, p < .001; grammatical and discourse, r = .52, p < .001).

The Current Study

In this article, I report findings from a study that investigated within- and cross-linguistic relations in the lexical, grammatical, and discourse oral narrative retell performance of second language learners. Fifty-six first- and second-grade Spanish-speaking children were assessed using an oral narrative retell task in both Spanish and English. Transcripts were analyzed and compared within and across languages.

The specific research questions addressed in this study were:

1. Which microlevel components of oral narrative retells were significantly correlated within and across languages for Spanish-speaking first and second graders?
2. How well did lexical and grammatical microlevel components predict narrative discourse scores within and across languages?

Although previous findings related to the first research question have been mixed, within-language correlations among domains are generally reported to be significant (Bedore et al., 2010; Simon-Cereijido & Gutiérrez-Cellen, 2009). Therefore, it was hypothesized in the current study that there would be significant within-language correlations among components in microlevel lexical and grammatical domains. Cross-linguistic microlevel correlations were not expected.

With regard to the second research question, only a small amount of research has been conducted with monolingual children (Heilmann, Miller, Nockerts, & Dunaway, 2010; Terry et al., 2013). Nonetheless, findings have shown that vocabulary and grammar potentially predict discourse skill. Given the key role that oral language plays in the development of narrative proficiency, it was hypothesized that lexical and grammatical components would be significant predictors of NSS scores within both languages but not necessarily across languages.

Method

Participants

Data for this study were collected in four schools in two districts; both districts were located in the same mid-sized urban area in the Pacific Northwest near a large public university. District A served a diverse population of about 11,000 students, approximately 68% of whom were White and 19% Latino, as reported by the State Department of Education (Oregon, 2013). At the time of the study, 63% of students were eligible for free and reduced lunch and approximately 6% received English as a second language (ESL) services. A majority of ESL students spoke Spanish as a home language and were concentrated in certain areas of the city. Students from three schools with high concentrations of Spanish-speaking Latino students (averaging 29%) and rates of eligibility for free and reduced lunch (averaging 85%) participated. All elementary schools in the district provided instruction in English only at the time of the study.

District B enrolled approximately 16,000 students in Grades K–12, 68% of whom were White and 14% Latino. According to the State Department of Education, 43% of students were eligible for free or reduced lunch and approximately 1% received ESL services at the time of the study. As in District A, a large majority of ESL children spoke Spanish as a home language and attended a handful of elementary schools. The site for this study was a dual language immersion school with a considerably higher percentage of Latino students (41%) and those eligible for free and reduced lunch (68%) than the district average. In this school, literacy instruction in Grades K–2 was conducted in the home language of the child (as determined by school criteria and initial language assessment), so all participating children received literacy instruction in Spanish at the time of the study. The inclusion of children in different language of instruction (LOI) contexts was intended to be representative of the primary grade Spanish-speaking population of the United States in that some children possessed strong native oral
language and reading skills, and others did not (Proctor et al., 2005).

Fifty-six children participated in this study, all of whom were identified as heritage Spanish speakers using district criteria. The majority were born in the United States to parents of Mexican descent, although a small number of participants came from families originating in Central America. Participants exhibited a range of oral proficiencies in both languages, although Spanish language proficiency data were not collected in schools and were therefore not known to the researcher. In terms of English proficiency, the majority of children (approximately 75%) qualified for ESL services, while the rest either did not qualify or had already exited from such services. Therefore, children in this study ranged from beginning to advanced English speakers.

Three children from the original sample (N = 56) did not adequately complete the ONR in Spanish, and two other children did not complete it in English. Therefore, only 51 children completed assessments in both languages. Descriptive data for all 56 participants is reported (see Table 1), but sample sizes for each of the analyses vary accordingly.

**Oral Narrative Retell Procedure**

ONRs using two Mercer Mayer *Frog* wordless picture books (Mayer, 1969, 1974) and the Strong Narrative Retell Assessment Procedure (Strong, 1998) were conducted with children from February through May 2013. All assessments were given either by the principal investigator or a trained graduate student. The principal investigator is a Latina highly fluent Spanish-English bilingual who has experience teaching in a dual language elementary school, and has conducted previous research with Spanish-speaking populations. The graduate student was not bilingual and only administered English assessments.

The Strong elicitation procedure calls for the assessor to give the child a general overview of the content of the book as well as instructions about how and when to turn pages while listening. Children were also told in advance that they would be asked to retell the story in their own words and that they would not be able to look at the book while doing so. Children listened to the story using headphones while the assessor sitting across from the child and worked on a computer. This naïve listener condition (Strong, 1998) is generally expected to lead to more detailed retelling because of the lack of shared knowledge between researcher and child. After listening, each child was given the option to review the pictures in the book before giving it to the assessor to put away. About half the children took the option to do so. The audiorecorder was turned on, and children were prompted to begin their retell. The assessor remained silent throughout, intervening only after pauses of more than 3 s. After 3 s, the assessor gave a general prompt such as “Tell me more” (*Dime más*) or “Anything else?” (*¿Algo más?*; Miller, Andriacchi, & Nockerts, 2011). Once the child had retold most of the story or paused for longer than 5 s, the researcher asked, “Is that all you remember?” (*¿Es todo lo que recordas?*).

All children were assessed in a quiet space in the school. Each was assessed twice: first in Spanish (by the principal investigator) and approximately a week later in English (by the principal investigator or a graduate research assistant). A counterbalanced design was employed, such that half of the children were randomly chosen to hear *Frog Goes to Dinner* in Spanish and *Frog, Where Are You?* in English. The opposite was true for the other half of children. The frog books are designed to be similar in terms of length, sentence complexity, and cohesion (Greenhalgh & Strong, 2001), and have been used across languages with Spanish speakers in other studies (Bedore et al., 2010; Simon-Cereijido & Gutiérrez-Clellen, 2009). Each assessment session lasted approximately 20 min, and only the target language for that session was spoken by the assessor for the entire session.

**Data Analysis**

All narratives were audiorecorded and transcribed either by the principal investigator or trained and experienced university students who were highly proficient in the target language. The Systematic Analysis of Language Transcripts (SALT) computer program and its accompanying
conventions were used for all segmenting and coding (Miller, 2012; Miller et al., 2011). All measures in this study were calculated using only complete and intelligible utterances. In addition, maze behaviors such as repetitions and reformulations were omitted and therefore did not count in any of the measures. There were few instances of code switching in the data set, but those instances were also considered maze behavior and were not counted in final measures.

In line with SALT conventions, transcripts were segmented into C-units using Loban’s (1976) rules; a C-unit includes a main clause and all of its subordinate clauses. For example, the sentence *The frog jumped before it landed in the water* would be considered one C-unit, since before is a subordinating conjunction. Segmenting of C-units only differed in the case of coordinated clauses with omitted subjects in the second main clause, as recommended in the literature on ONRs with Spanish-speaking children (Gutiérrez-Clellen & Hofstetter, 1994; Miller et al., 2006). In other words, utterances that contain a succession of coordinating verbs (*and, but, or, etc.* without repeating the subject were segmented into separate C-units, even if they would be considered one utterance using standard segmenting conventions. For example, the following would be considered one utterance using standard C-unit segmenting conventions: *The frog jumped and landed in the water.* However, using modified C-units, as I did in the present study, it would be segmented as two utterances: *The frog jumped and landed in the water.* This modified C-unit segmenting makes sense when analyzing transcripts in studies with bilingual Spanish speakers because of the pronoun-drop nature of Spanish; the subject pronoun is not necessary since it is encoded in the verb that follows.

Modified C-unit segmenting results in a greater overall number of utterances than might be the case with standard C-unit segmenting, but it protects against overinflating the grammatical complexity children are using. To maintain consistency and comparability across languages, modified C-unit segmenting was used in the present study to segment all transcripts in both languages. This same procedure was used by Miller et al. (2006) to ensure that participants’ narrative abilities in both languages were calculated equitably (Miller et al., 2011).

NDW was the microlevel measure analyzed within the lexical domain (Miller et al., 2006). It is a total count of the unique, uninflected lexemes used in each complete retell. It is helpful as a cross-linguistic measure because it accounts for the very different morphological systems in English and Spanish and allows for direct comparison across languages (Simon-Cereijido & Gutiérrez-Clellen, 2009). NDW has been shown to be a developmentally sensitive and robust indicator of a child’s vocabulary and is widely used in research on oral narrative production among bilingual children (Heilmann, Miller, Nockerts, & Dunaway, 2010). It has also been found to be positively related to reading achievement in Spanish-speaking children (Miller et al., 2006; Rojas & Iglesias, 2013). NDW is analyzed automatically by the SALT program.

Because it is based on breadth of vocabulary rather than depth, NDW is useful as a measure of general language ability. It is not meaningful as a measure of academic language or facility with complex language (Greenhalgh & Strong, 2001). In this study, therefore, two measures of grammatical complexity were analyzed. Grammatical analysis of ONRs is important because syntactic knowledge plays a role in reading comprehension, especially with regard to children’s ability to synthesize information (Gutiérrez-Clellen, 1998; Verhoeven, 2011). The first grammatical component analyzed was overall number of utterances at the word (MLUw) level, widely considered a reliable measure of grammar for this population of learners (Castilla, Restrepo, & Perez-Leroux, 2009; Rojas & Iglesias, 2013). MLUw is analyzed automatically by the SALT program.

The second measure of grammatical complexity analyzed was the SI, which is the ratio of the total number of clauses (independent and subordinate) in a retell divided by the total number of utterances. SI has been used to analyze the ONRs of both monolingual and bilingual children (Gutiérrez-Clellen & Hofstetter, 1994; Heilmann, Miller, Nockerts, & Dunaway, 2010), and is considered to be a valid indicator of grammatical proficiency. Gutiérrez-Clellen and Hofstetter (1994) argued that the use of such an index to analyze the language production of young children “may reveal important information about their facility with school literacy activities that rely on the construction of spoken and written narratives” (p. 646). Research also suggests that the SI can be used to quantify complex grammar across the two languages of bilingual children (Miller et al., 2011). The SI is not automatically analyzed by SALT and was therefore hand-coded by the principal investigator in this study. It was then entered into the SALT transcript. Frequencies, means, and standard deviations were then calculated using SALT.
The final measure analyzed was the NSS (Heilmann, Miller, Nockerts, & Dunaway, 2010) to assess children’s use of discourse. The NSS includes basic story grammar elements, but also incorporates sophisticated narrative elements like cohesion, mental states, and the use of clear antecedents and referents. It is an overall index of a child’s ability to produce a coherent and detailed narrative. The NSS consists of seven categories, each of which is scored holistically on a scale of 1 (minimal/immature) to 5 (proficient) for a possible 35 points total (Heilmann, Miller, Nockerts, & Dunaway, 2010). Table 2 highlights key criteria used to assess each of the elements.

Reliability

To achieve interrater reliability, 20% of transcripts in each language (10 in Spanish, 9 in English) were randomly selected to be transcribed, segmented, and coded by both the researcher and a trained university student. In English, word-to-word match transcription was 95%, point-to-point agreement on identification of modified C-units was 98%, and the identification of subordinate clauses was 84%. In Spanish, word-to-word match transcription was 92% and point-to-point identification of modified C-units was 93%. The researcher and assistant discussed points of disagreement to inform the transcription of the rest of the recorded retells.

Following Heilmann, Miller, and Nockerts (2010), Krippendorff’s alpha (Krippendorff, 1980) was used to calculate interrater reliability for NSS, as it accounts for differences in both agreement and degree of difference on ordinal data between transcribers. Alpha values were calculated using the total NSS scores that were calculated by the two independent transcribers (α = .86 for NSS). This was above Krippendorff’s benchmark of .80 for adequate agreement.

Results

Table 3 shows descriptive statistics for the lexical, grammatical, and discourse components based on ONR scores in each language for all participating children as well as by instructional context. Overall, the means for MLUw, SI, and NSS were similar across languages, with slightly higher scores in English in most areas; however, mean NDW scores were considerably higher in English than in Spanish (see Table 3). Means for dual language and English-only groups were calculated separately to ascertain whether scores differed significantly based on instructional context. As can be seen in Table 3, differences were observed between the two groups on several individual components, generally such that children in dual language immersion had higher scores than children in English-only classrooms. Independent groups t tests indicated that differences between the two groups were significant for Spanish NDW (SpNDW; p < .01), Spanish NSS (SpNSS; p < .05), English MLUw (EngMLUw; p < .001), and English SI (EngSI; p < .001). For this reason, LOI was included as a main effect and moderator of other predictors in the hierarchical multiple regression analyses. Grade level was also entered as a possible predictor of NSS in each language. It was not found to be significant for SpNSS and was therefore not included as a covariate. Grade was found to be significant for EngNSS, so it was controlled for in the regression equation.

Table 2
Narrative Macrostructure Measure: Narrative Scoring Scheme (Heilmann, Miller, & Nockerts 2010)

<table>
<thead>
<tr>
<th>Language sampling context</th>
<th>Story retell</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total possible score</td>
<td>35 points</td>
</tr>
<tr>
<td>Scoring criteria</td>
<td>Seven elements: each scored on a 1 (immature) to 5 (proficient) point scale, then summed; 0 points possible if child does not include element or provides incomprehensible response</td>
</tr>
<tr>
<td>Elements assessed</td>
<td>Introduction: introduces setting and characters (0–5 points)</td>
</tr>
<tr>
<td></td>
<td>Character development: differentiates between main and secondary characters</td>
</tr>
<tr>
<td></td>
<td>Mental states: uses vocabulary that expresses thoughts or emotions of characters</td>
</tr>
<tr>
<td></td>
<td>Referencing: appropriately uses pronouns, referents, and antecedents</td>
</tr>
<tr>
<td></td>
<td>Conflict resolution: identifies major conflicts and resolutions that are critical to the development of the plot</td>
</tr>
<tr>
<td></td>
<td>Cohesion: applies logical sequencing and smooth transitions</td>
</tr>
<tr>
<td></td>
<td>Conclusion: provides general conclusion to the story in addition to final event</td>
</tr>
</tbody>
</table>

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Table 3  
Means and Standard Deviations of Lexical, Grammatical, and Discourse Components by Language for all Participating Children

<table>
<thead>
<tr>
<th>Language</th>
<th>NDW (SD)</th>
<th>MLUw (SD)</th>
<th>SI (SD)</th>
<th>NSS (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish</td>
<td>59.4 (25.2)</td>
<td>7.5 (1.3)</td>
<td>1.2 (0.17)</td>
<td>19.3 (7.5)</td>
</tr>
<tr>
<td>(n = 53)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DL (n = 26)</td>
<td>68.6 (22.5)</td>
<td>7.7 (1.1)</td>
<td>1.3 (0.16)</td>
<td>21.5 (7.1)</td>
</tr>
<tr>
<td>EO (n = 27)</td>
<td>50.4 (24.9)</td>
<td>7.2 (1.4)</td>
<td>1.2 (0.18)</td>
<td>17.2 (7.3)</td>
</tr>
<tr>
<td>English</td>
<td>67.6 (29.2)</td>
<td>7.7 (1.2)</td>
<td>1.2 (0.15)</td>
<td>20.1 (6.7)</td>
</tr>
<tr>
<td>(n = 54)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DL (n = 25)</td>
<td>74.6 (29.9)</td>
<td>8.3 (1.0)</td>
<td>1.3 (0.16)</td>
<td>21.5 (7.0)</td>
</tr>
<tr>
<td>EO (n = 29)</td>
<td>61.6 (27.7)</td>
<td>7.1 (0.98)</td>
<td>1.1 (0.12)</td>
<td>19.0 (6.4)</td>
</tr>
</tbody>
</table>

Note. (N = 56). NDW = number of different words; MLUw = mean length of utterance, word; SI = subordination index; NSS = Narrative Scoring Scheme; DL = dual language instructional context; EO = English only instructional context.

Correlations

To address the first research question, regarding which microlevel lexical and grammatical components of ONRs were significantly correlated within and across languages, Pearson product-moment correlations were calculated. Two-tailed correlations were run because they are more conservative than one-tailed tests, thus accounting for the limited sample size in this study. As with descriptive statistics, correlations are reported for all children (Table 4), as well as for each LOI subgroup separately (Tables 5 and 6). In all cases, preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, and homoskedasticity.

For all children with complete data, in Spanish, the microlevel lexical component (NDW) was significantly and positively correlated with both grammatical components (SpNDW and SpMLUw, \( r = .276, \ p < .05 \); SpNDW and SpSI, \( r = .306, \ p < .05 \)). In English, there were no significant correlations among microlevel domains. Cross-linguistically, vocabulary scores were significantly and strongly positively correlated with one another (SpNDW and EngNDW, \( r = .657, \ p < .01 \)) whereas MLUw and SI scores were not (SpMLUw and Eng-MLUw, \( r = -.048, ns \); SpSI and EngSI, \( r = -.127, ns \)). Across domains and languages, Spanish vocabulary was significantly and positively correlated with one of the English grammatical components (SpNDW and EngSI, \( r = .319, \ p < .05 \), and English vocabulary was significantly and positively correlated across languages with both components in the Spanish grammatical domain (EngNDW and SpMLUw, \( r = .284, \ p < .05 \); EngNDW and SpSI, \( r = .383, \ p < .01 \)). Correlations among components were also run for each LOI subgroup separately. Because of the small sample in each subgroup, a Bonferroni adjustment was used, and as such a significance level of \( p < .01 \) was set. Results for children enrolled in English-only instruction are reported in Table 5.

For children in English-only instruction, in Spanish, the microlevel lexical component (NDW) was not significantly correlated with either of the grammatical components (MLUw or SI). However, the two different grammatical components were significantly and positively correlated (SpMLUw and SpSI, \( r = .544, \ p < .01 \)). In English, vocabulary was significantly and positively correlated with the SI (EngNDW and EngSI, \( r = .544, \ p < .01 \)). Cross-linguistically, vocabulary scores were significantly and positively correlated with one another (SpNDW and EngNDW, \( r = .807, \ p < .01 \)) whereas MLUw and SI scores were not. Across domains and languages, there were no significant correlations between vocabulary and either component in the grammatical domain. Correlation results for children enrolled in dual language instruction are reported in Table 6.

For children in dual language instruction, the microlevel lexical component was not significantly correlated with either grammatical component in Spanish or English. However, the two different grammatical components were significantly and positively correlated within Spanish (SpMLUw and SpSI, \( r = .741, \ p < .01 \)) and within English (Eng-MLUw and EngSI, \( r = .596, \ p < .01 \)). Cross-linguistically, there were no significant correlations within either the vocabulary or the grammatical domain. Within the grammatical domain, Spanish MLUw was significantly and negatively correlated with EngSI (SpMLU and EngSI, \( r = -.673, \ p < .01 \)) in this group. Across domains and languages, Spanish

Table 4
Correlations Within and Across Languages for Children With Complete Data

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SpNDW</td>
<td>.657**</td>
<td>.276*</td>
<td>.245</td>
<td>.306*</td>
<td>.319*</td>
</tr>
<tr>
<td>2. EngNDW</td>
<td>-.284*</td>
<td>-.189</td>
<td>.383**</td>
<td>.204</td>
<td></td>
</tr>
<tr>
<td>3. SpMLUw</td>
<td>-.048</td>
<td>-.668*</td>
<td>-.258</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. EngMLUw</td>
<td>-.062</td>
<td>.632**</td>
<td>-.127</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. SpSI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. EngSI</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Note. (N = 51). EngNDW = English number of different words; SpMLUw = Spanish mean length of utterance, word; EngMLUw = English MLUw; SpSI = Spanish subordination index; EngSI = English SI.

*p < .05 (two-tailed). **p < .01 (two-tailed).
vocabulary was not significantly correlated with either grammatical component, nor was English vocabulary significantly correlated across languages with either component in the Spanish grammatical domain.

When patterns of correlation between the overall sample (Table 4), English-only students (Table 5), and dual language students (Table 6) were compared, differences emerged, indicating once again that LOI needed to be included as a main effect and moderator of other predictors in subsequent hierarchical multiple regression analyses. Results of such analyses are reported in the next section.

Regression Analyses

To address the second research question, regarding how well lexical and grammatical microlevel components predicted a macrolevel narrative discourse score within and across languages, two series of hierarchical multiple regressions were performed using the Spanish and English narrative scores as the dependent variable. Preliminary analyses were conducted to ensure that assumptions of normality, collinearity, and homoskedasticity were not violated. To avoid multicollinearity due to the inclusion of interaction terms, continuous predictors were mean-centered and LOI was effect-coded such that \( C_0 \) represented students in English-only classrooms and 1 represented students in dual language immersion classrooms.

The first series of hierarchical multiple regression models used Spanish NSS scores as the dependent variable. The first two models in this series investigated the predictive value of each of the microlevel domains (NDW for lexical, MLUw and SI for grammatical) in the same language. English lexical and grammatical components were added in the third and fourth models. LOI, indicating enrollment in either dual language or English-only instruction, was entered in the fifth model, and interactions between LOI and each of the microlevel predictors were entered in the sixth model. Taking this sequential additive approach made it possible to first identify the variance

Table 5
Correlations Within and Across Languages for Students in English-Only Instruction

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SpNDW</td>
<td>.807*</td>
<td>.293</td>
<td>.066</td>
<td>.455</td>
<td>.412</td>
</tr>
<tr>
<td>2. EngNDW</td>
<td>.071</td>
<td>.172</td>
<td>.292</td>
<td>.544*</td>
<td>.544*</td>
</tr>
<tr>
<td>3. SpMLUw</td>
<td>-.017</td>
<td>.613*</td>
<td>-.111</td>
<td>.371</td>
<td>.371</td>
</tr>
<tr>
<td>4. EngMLUw</td>
<td>-.118</td>
<td>.715</td>
<td>.371</td>
<td>.371</td>
<td>.371</td>
</tr>
<tr>
<td>5. SpSI</td>
<td></td>
<td></td>
<td></td>
<td>.154</td>
<td></td>
</tr>
<tr>
<td>6. EngSI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.154</td>
</tr>
</tbody>
</table>

Note. (N = 26). Alpha level adjusted using a Bonferroni adjustment to account for the small sample size. EngNDW = English number of different words; SpMLUw = Spanish mean length of utterance, word; EngMLUw = English MLUw; SpSI = Spanish subordination index; EngSI = English SI. *p < .01 (two-tailed).

Table 6
Correlations Within and Across Languages for Students in Dual Language Instruction

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SpNDW</td>
<td>.443</td>
<td>.152</td>
<td>.027</td>
<td>.087</td>
<td>-.039</td>
</tr>
<tr>
<td>2. EngNDW</td>
<td>.501</td>
<td>.012</td>
<td>.465</td>
<td>.206</td>
<td>.206</td>
</tr>
<tr>
<td>3. SpMLUw</td>
<td>-.331</td>
<td>.741*</td>
<td>.673*</td>
<td>.673*</td>
<td>.673*</td>
</tr>
<tr>
<td>4. EngMLUw</td>
<td>-.151</td>
<td>.596*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. SpSI</td>
<td></td>
<td></td>
<td></td>
<td>.496</td>
<td></td>
</tr>
<tr>
<td>6. EngSI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.496</td>
</tr>
</tbody>
</table>

Note. (N = 25). Alpha level adjusted using a Bonferroni adjustment to account for the small sample size. EngNDW = English number of different words; SpMLUw = Spanish mean length of utterance, word; EngMLUw = English MLUw; SpSI = Spanish subordination index; EngSI = English SI. *p < .01 (two-tailed).
Regression Models Predicting English NSS Scores

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Adjusted $R^2$</th>
<th>$R^2$ change</th>
<th>$F$ change</th>
<th>$p$ value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1: EngNDW</td>
<td>.767</td>
<td>.758</td>
<td>.520</td>
<td>107.19</td>
</tr>
<tr>
<td>Model 2: +EngMLUw, EngSI</td>
<td>.800</td>
<td>.783</td>
<td>.033</td>
<td>3.79</td>
</tr>
<tr>
<td>Model 3: +SpNDW</td>
<td>.826</td>
<td>.807</td>
<td>.026</td>
<td>6.75</td>
</tr>
<tr>
<td>Model 4: +SpMLUw, SpSI</td>
<td>.847</td>
<td>.823</td>
<td>.021</td>
<td>2.99</td>
</tr>
<tr>
<td>Model 5: +LOI</td>
<td>.847</td>
<td>.818</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Model 6: +LOI × EngNdw, LOI × EngMLu, LOI × EngSI, LOI × SpNDW, LOI × SpMLU, LOI × SpSI</td>
<td>.857</td>
<td>.802</td>
<td>.010</td>
<td>.411</td>
</tr>
</tbody>
</table>

Note. (N = 51). NSS = Narrative Scoring Scheme; EngNDW = English number of different words; EngMLUw = English mean length of utterance, word; EngSI = English subordination index; SpNDW = Spanish NDW; SpMLUw = Spanish MLUw; SpSI = Spanish SI; LOI = language of instruction.

Grade was controlled for in this model.

The total variance accounted for by this set of regression equations was 81.9%, $F(13, 37) = 16.6$, $p < .001$. As was the case with Spanish NSS, English lexical diversity was the most significant predictor of English NSS scores, accounting for 75% of the overall variance. However, unlike the case for Spanish NSS, adding English grammatical components to the final model also significantly explained variance. Cohen’s $f^2$ was calculated to estimate effect size of this addition. According to Cohen (1988), effect sizes that are considered small, medium, and large are .02, .15, and .35 respectively. The 4% change in variance explained by the addition of grammatical components was significant, $F(3, 47) = 60.10$, $p < .05$, $f^2 = .12$, exhibiting a moderate effect size and demonstrating that grammar performance was predictive of children’s NSS scores within English beyond the variance explained by NDW. In addition, the contribution of Spanish NDW was significant when added in the third model ($β = .222$, $p < .01$). The 3% change in variance was significant, $F(4, 46) = 52.14$, $p < .01$, $f^2 = .10$, again showing moderate effect size. LOI and its interactions were not significant, suggesting that the predictive value of microlevel components was not different for children in dual language and English-only settings.

**Discussion**

This study set out to investigate relations among the lexical, grammatical, and discourse domains of ONRs within and across the languages of first- and second-grade Spanish-speaking second language learners. Two specific relations were of interest: (a) associations within and across microlevel lexical and grammatical domains, and (b) the predictive validity of microlevel components on a macrolevel discourse score. This dual focus highlights the critical role that oral language skills play in reading comprehension, especially for children learning a second language (Droop & Verhoeven, 2003; Gottardo, 2002; Gottardo & Mueller, 2009; Verhoeven, 2000). Correlations were run to examine the first relation, and regression analyses were run to examine the second.

In terms of microlevel correlations, it was hypothesized based on previous research that there would be significant correlations among domains within each language but not across languages.
The specific relations that could be expected were hard to predict because of inconsistent results in previous ONR and non-ONR studies with similar populations of children. Some of these inconsistent findings were the result of the use of different and noncomparable assessments across studies, or the use of noncomparable assessments across languages within studies (Simon-Cereijido & Gutiérrez-Clellen, 2009). Given such mixed results, it was not surprising that findings from the current study both confirm and contradict existing research. On one side, findings about within-Spanish correlations largely corroborated existing research (Gottardo, 2002; Gottardo & Mueller, 2009; Manis et al., 2004). Like all previous studies examining the relation between the Spanish lexical domain and the Spanish grammatical domain, results from the present study indicate significant positive correlations between NDW and both MLUw and SI for the overall sample. In contrast, however, findings about cross-linguistic lexical correlations contradict much of the extant research while confirming findings from a smaller number of studies. Multiple studies—using both the ONR methodology and standardized assessments—have reported nonsignificant correlations for vocabulary across languages, while the present results indicate a high level of significance ($p < .01$). The previous study that reported nonsignificance used the ONR methodology (Bedore et al., 2010), whereas the two studies that found significance used the Woodcock Language Proficiency Battery to measure vocabulary (Lindsey et al., 2003; Proctor et al., 2006). This suggests that it is not the assessment tool per se that matters, but that there are likely other factors at play, such as age and schooling context.

Findings from the present study also add to the mixed picture with regard to cross-linguistic, cross-domain correlations. Two studies using the ONR methodology with slightly younger children found nonsignificant correlations between NDW and MLUw across languages, whereas in the current sample, the correlation in at least one direction (EngNDW and SpMLUw) was significant. Further, there was a significant positive relation between NDW and SI—a grammatical measure that the other two studies did not calculate—across languages as well. In the current study, therefore, microlevel lexical to grammatical cross-linguistic correlations in the overall sample were quite robust, in contrast to the limited existing literature using the same methodology. There are at least three possible reasons for discrepancies between current findings and those from previous research. First, participants in the other two ONR studies reported in this article were in preschool or kindergarten, whereas children in the current study were nearing the end of first or second grade. Given that the early school years are pivotal in terms of language development for second language learners, it should not be surprising that even children a year or two older may exhibit different patterns of language development.

Second, although children’s patterns of language use were described in the two other studies, it was not indicated in either whether children were enrolled in home language literacy instruction, leaving one to assume that they received instruction in English only. In the current study, nearly half (26/56) of the participants were enrolled in dual language education and had therefore received 2–3 years of Spanish reading instruction. Schooling context is an important consideration and may have played a role in patterns of cross-linguistic correlations found in this study. In fact, participants in this study who were enrolled in dual language education had better developed microlevel and macrolevel skills in both languages than children in English-only instruction.

A third possible reason for the discrepancy in microlevel findings may have been the use of the SI as a grammatical measure in the current study. Although MLUw is commonly considered a proxy for grammatical complexity, it only reflects the average number of words in each utterance, regardless of whether the syntactic structure of the utterance is complex or not. Therefore, SI was included to account specifically for complexity beyond length. The mean SI was not high for this sample in either language—1.2 in both Spanish and English—so it is notable that it was significantly correlated with lexical components within Spanish and across languages for the overall sample, as well as being a significant predictor of NSS scores within English.

In terms of microlevel predictors of the macrolevel discourse score, it was hypothesized that vocabulary and grammatical components would be significant predictors of NSS scores within both languages but not cross-linguistically. Findings were more nuanced than was hypothesized: Vocabulary was the only significant predictor of overall narrative performance within both languages, as well as cross-linguistically from Spanish to English; English grammar contributed significant variance to the regression equation for English narrative performance only. The findings around vocabulary as a predictor of narrative performance confirmed much of the existing research on
the important role that vocabulary plays in language and literacy development in the early school years, including that which has used both standardized assessments and ONR methodology (Scarborough, 2001; Verhoeven, 2011). The finding that SI as a measure of grammatical complexity was more closely related to both microlevel and macrolevel components than was MLUw was somewhat more novel, since the two ONR studies that were previously conducted to investigate the role of grammar on oral narrative proficiency did not include an index of subordination (Bedore et al., 2010; Simon-Cereijido & Gutiérrez-Clellen, 2009). This suggests that more research using the SI as a measure of grammatical complexity is warranted.

The current study therefore adds to the existing knowledge base on vocabulary among Spanish-speaking children in three important ways. First, only two ONR studies have previously investigated the predictive value of vocabulary breadth on NSS scores, and both were conducted with English monolinguals (Heilmann, Miller, Nockerts, & Dunaway, 2010; Terry et al., 2013). In the current study, the same predictive pattern was found from vocabulary to discourse in English as the two previous studies, extending it to a second language learner population. Second, findings showed a similar highly significant predictive relation between Spanish vocabulary and Spanish discourse for these children, suggesting that a parallel relation may exist between microlevel and macrolevel domains in both languages. Third, vocabulary cross-linguistically predicted discourse scores from Spanish to English when added to the regression equation after English components, suggesting that L1 vocabulary is another critical predictor of L2 narrative skill. This is one of the first studies to report such a finding using the ONR assessment method, confirming what has been found with other tools and expanding understanding of the various ways in which lexical skills can be measured and assessed.

The role of grammatical development in oral narrative retelling was less clear from the results of this study. There were microlevel correlations between vocabulary and grammatical components both within and across languages, but grammatical performance significantly predicted discourse scores only within English. Within Spanish, there were no grammatical predictors of discourse performance. The reason for this is unknown, since children’s mean scores in MLUw and the SI were similar across languages. Nonetheless, it confirms previous research that has found grammar to be a less robust predictor of narrative discourse than vocabulary (Droop & Verhoeven, 2003; Gottardo & Mueller, 2009; Lindsey et al., 2003; Manis et al., 2004).

Findings from this study confirmed much of what has been done in previous research even though participants were enrolled in programs with different languages of instruction (Gottardo, 2002; Gottardo & Mueller, 2009; Manis et al., 2004; Miller et al., 2006). Second language learners from two instructional contexts performed similarly on the ONR task, with both groups generally performing better in English than in Spanish, and dual language children performing slightly better than English-only students on all components in both languages.

Finally, it is worth highlighting that while LOI was not found to be a significant predictor or moderator of other predictors in hierarchical multiple regression analyses, there were some differences in the performance of English-only and dual language students on retells in the two languages. For example, among children in dual language classrooms, there was a negative cross-linguistic correlation between the two grammatical components. Such differences were not found to be statistically meaningful, but they may well be practically significant, and further research that analyzes such differences is warranted.

**Implications**

Findings from this study confirm the critical roles that vocabulary and grammatical complexity play in the development of narrative discourse skill for young second language learners. They also reiterate that ONRs provide a window into linguistic development, as well as the development of coherent, literate stories. ONR data are especially informative when analyzed in two languages because of the interdependence of skills found across microlevel domains. In concert with previous research in this area, findings from the current study have important implications for both early literacy instruction and future research.

With regard to instruction, others have noted the value of a focus on vocabulary for second language learners (Droop & Verhoeven, 2003; Verhoeven, 2011), and indeed, findings from the current study confirm that the number of words available to second language learners in two languages may affect their facility with narrative production. Therefore, attention should be paid to building second language learners’ breadth of vocabulary in both languages, in addition to supporting children as they learn targeted words in depth (August et al., 2005; Carlo et al., 2004). In addition, it was found that vocabu-
lary and grammar are related within the L1 and across languages, but more importantly, that grammatical complexity is a possible predictor of oral discourse skills, at least within English. An instructional implication, then, is that facilitating complex syntax should be a goal of early literacy instruction for second language learners. This would require educators to think deeply about how such complexity can be taught and supported within both dual language and English-only programs.

In terms of future research, findings from this study suggest that patterns of development may be similar in each of a child’s two languages, even if they do not have access to instruction in their home language. A limitation of the current study is that the sample size was too small to draw conclusions about the development of narrative skill for children enrolled in two different instructional contexts, although there are hints that such differences may exist. Nonetheless, regression equations showed that enrollment in dual language or English-only literacy instruction did not moderate children’s performance in either language, and the population studied mirrors that of the general Spanish-speaking population in the United States, given the variety of bilingual programs in which such children are enrolled (Baker, 2011; García & Kleifgen, 2010). A second limitation was the lack of Spanish language proficiency information available about participating children. Future research should further investigate similarities and differences in the oral language of primary grade children in different instructional contexts using a culturally relevant and holistic assessment like oral narrative retelling. In addition, given the finding that the SI was a significant predictor of NSS scores within English but not within Spanish for the overall sample, it would be worth further investigating how this grammatical skill develops in two languages, as well as identifying possible ways to facilitate the development of syntactically complex language in this population.

In summary, findings from the present study contribute to the field’s understanding of within- and cross-linguistic relations in the ONRs of Spanish-speaking children, and begin to untangle how second language learners process and produce retells in their first and second languages. ONRs are a nuanced and powerful tool to use in assessing the growing population of young second language learners in American schools, and offer a more complete picture of such children’s potential literacy comprehension strengths and challenges than other commonly used tools. Perhaps more importantly, research on oral narrative development can elucidate ways to support children as they develop language and literacy skills in two languages.

References


Scarborough, H. S. (2001). Connecting early language and literacy to later reading dis(abilities): Evidence, theory,


