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## Parent and teacher rating of bilingual language proficiency and language development concerns

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### Abstract

Educators of young children, including speech-language pathologists, are often uncertain as how to effectively work with children from diverse backgrounds because they do not know enough about cultural and linguistic diversity and its impact on language development. The current study helps to address this gap by examining the validity of parent and teacher report in determining language proficiency and language ability in prekindergarten and kindergarten age children from Spanish-English bilingual backgrounds. Parents and teachers rated child language proficiency and ability in Spanish and English. Results indicate that teachers and parents were reliable informants on English language proficiency, but only the parents reliably rated children's Spanish proficiency. Both teacher and parent report were significantly correlated to child language ability. Teachers' ratings of ability correlated with morphosyntax performance while parents' ratings correlated with their child's broad language performance. For clinical and educational decision making, we emphasize the importance of understanding bilingual children's language use across languages and contexts by incorporating both parent and teacher observations.

### Keywords

bilingual; parent report; teacher report; language development; language delays; language disorders

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In early education settings, parents and teachers are often asked to provide input with respect to children's ability to use language (i.e., how easily the child can be understood, the child's use of vocabulary, the child's length of sentences) and if they are concerned about the language development (i.e., does the child's language abilities interfere with their ability to communicate with others at home or school). This input is important for early identification of possible language delay for early remediation (Massa et al. 2008; Redmond and Rice 2002). Parents of bilingual children may be additionally asked to describe the relative strength of their children's L1 versus L2 or developmental history of dual language use. This developmental information is typically used to make educational placement decisions (e.g., intervention for communication disorders, special education, bilingual education) and to set and develop goals for learning. Teachers or speech-language pathologists, for example,

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confer with parents about what children do at home and what they know. Parent input and educator observations inform intervention goals or classroom activities that build on children's strengths and address their language learning needs (García, Pérez, and Ortiz 2000; Gillam and Gillam 2006).

The largest English language learning (ELL) population in U.S. schools is comprised of Latino-Americans, most of whom speak Spanish as a first language (Grieco 2003). Over and underrepresentation of Hispanic children, particularly ELLs, is a persistent problem within the special education context (Artiles et al. 2005; Klingner and Artiles 2006; Tomblin et al. 1997). A challenge faced universally is that educators need more information to distinguish between normal variability in bilingual language learners and language impairment or other learning disabilities (Bedore and Peña 2008; Broomfield and Dodd 2004; Kritikos 2003; Winter 2001). Special educators are advised to use teacher and parent report to interpret test results and to make appropriate recommendations because it is difficult to identify language delay if a child's first and second language learning history is unknown (Restrepo 1998; Roseberry-McKibbin and O'Hanlon 2005).

Clinicians and educators may not know the best ways to work with families or how to use the information that families provide. When surveyed, clinicians and educators identify information to help them work with families among their top needs for continuing education (Caesar and Kohler 2007; Gándara, Maxwell-Jolly, and Driscoll 2005; Hammer et al. 2004; Kritikos 2003). The importance of this identified need should not be underestimated. The ability to manage interpersonal relationships, including relationships with parents, is considered to be a key clinical skill by practicing professionals (Griffer 1997; Kamhi 1994). Families from diverse cultural backgrounds tend to be less satisfied with early intervention services than those from mainstream backgrounds (Turnbull et al. 2007). Kritikos (2003) surveyed clinicians who work with culturally and linguistically diverse children and families. She found that when clinicians had difficulty working with parents they were more likely to have low self-ratings of personal efficacy. One way to address the gaps that exist in knowing how to interpret parent and teacher report is to collect information about parents' and teachers' ratings of children's language skills and evaluate the extent to which these converge with measured language skills.

Providing educators with the information they need to interpret parent information is critical because U.S. special education laws specify that parents play a key role in the formation of educational plans such as the Individualized Family Service Plan (IFSP) and Individualized Education Plan (IEP) for their children. Best practices in multicultural education, such as family education programs or the funds of knowledge approach, also emphasize the importance of inclusion of families (González et al. 2001; Griffer 1997; Jordan, Snow, and Porche 2000; Moll and González 1994). Challenges facing educators when incorporating parent information include differences in judgments of child needs, level of parent (and teacher) knowledge of the child's performance in two languages, coupled with a misuse of the limited instruments available for such purposes.

## Parent and teacher judgment of language performance and need

Parents and educational professionals sometimes differ in their judgment regarding children's developmental status and whether there are speech or language delays determining if intervention is warranted. For example, Pérez (2000) interviewed Spanish-speaking parents of young children with diagnosed speech language or developmental delays. Parents reported difficulty understanding the speech or language of their children but did not judge this to be a *problem*, as did the educators. Instead parents attributed difficulties to health problems (e.g., ear infections) or the child's personality. They stated that they believed their children would outgrow these difficulties that they viewed as temporary. The parents' concept of normal linguistic development was much broader relative to that of the children's teacher and educational program. Another example comes from ethnographic interviews about Southeast Asian parent and teacher perceptions of education and referrals to special education (Hwa-Froelich and Westby 2003). Teachers did not make special education referrals for children who were struggling in their classes because they believed the children needed more time to learn two languages and because they were well behaved. Parents, on the other hand, associated difficulties with schoolwork with laziness and helped their children at home by engaging them in more intense practice with the material that was difficult. These parents also indicated that in their home country a child who could not learn even with more practice would be kept at home. Their notions of disability included physical or sensory impairments. These studies provide examples of differences in parent and teacher's beliefs. However, the described research did not systematically compare children's behaviors to parents or teacher ratings at the time of the interview. Such an approach would help in better understanding and determining points of convergence and non-convergence in viewpoints.

## Parental language knowledge

A particular challenge in working with parents of bilingual children is that young bilinguals may not learn both of their languages from their parents. Siblings and peers play an important role in bringing a second language into the home. Children often interact in the language of the dominant culture at home and school (Chesterfield et al. 1983; Yamamoto 2002) and these interactions are an important source of input in second language acquisition. In an ethnographic study Obied (2009) showed how peer interaction supported the use of the dominant, community language over the home language. This means that in at least some cases parents may not regularly listen to their children speaking in each of their languages. Thus they may not have access to the information they need to judge skills in each language, particularly when they are not fluent in that language.

## Using language tests and surveys to establish need for services

Finally, when information is gathered in an inconsistent manner or using instruments that were designed for other purposes (i.e., screening vs. proficiency ratings vs. diagnostics) test results may not converge and/or lead to misidentification (Bracken 1988; Hardin, Roach, and Peisner-Feiberg 2007). Likewise, test translation may change the target construct relative to the original resulting in unintended responses (Fox and Cheng 2007). Researchers have

pointed out that the problem when these mismatches occur is that parents can be viewed as being unreliable in their judgments or deficient because they do not understand their children's needs (García et al. 2000). In response to these situations educators may opt to rely less on parent input from low SES or non-mainstream parents. But to effectively provide services, educators need to listen to parents.

Early studies showed parents from middle and high educational and SES levels to be reliable reporters of language development (e.g., Dale 1991; Thal et al. 1999). Parents from lower educational and SES levels also accurately report child language development milestones (Thal, Jackson-Maldonado, and Acosta 2000). Thal et al. observed high significant correlation between words reported on the *Inventario de Desarrollo de Habilidades Comunicativas* (IDHC, Jackson-Maldonado et al. 2003) and objects named at 20 months of age in direct assessment. Similar relationships between parent report and direct language sample analysis were found for Spanish speaking 28-month-old children. Using a parallel design to compare reports on the English MacArthur-Bates Communicative Development Inventory (CDI, Fenson et al. 2006) and Spanish IHDC with language samples, Marchman and Martinez-Sussman (2002) demonstrated that bilingual parents accurately reported on language development in both languages. These studies suggest that differences in reports about language ability should not be attributed to a lack of accuracy of parent report for children from low SES or bilingual backgrounds.

Results of parent concern questionnaires and screening accuracy may diverge due to test context. For example, in evaluating a group of Swedish preschoolers, examiners indicated concerns for about 54% of the children referred for follow-up while parents indicated concerns for about 64% of the children (Westerlund and Sundelin 2000). Some of the children for whom the parents indicated concern passed the screener but other children failed the screener where no parental concern was indicated. Another approach for the use of parent input is to use parent checklists of child behaviors (such as vocabulary knowledge) as a screening for language learning difficulties. Rescorla (1989) and others (Thal et al. 2000; Thal et al. 1999) documented the general utility of this approach. These screenings yield relatively higher sensitivity and specificity than screening tests that focus on developmental milestones. These findings together suggest that rating of concern may be more subjective than rating of behaviors. The ways questions about concern are asked and how the responses are interpreted may contribute to the reliability of the information obtained.

It is also important to take into account the age of children for whom this data has been collected. With young children it may be easier for parents to provide an accurate accounting of development because their linguistic repertoire is still somewhat limited and because parents are often the ones who spend the most time with their children. When working with bilingual children the need to test can arise somewhat later as some concerns do not become apparent until they are faced with learning a second language.

Studies focusing on bilingual children regularly use questionnaires to determine children's bilingual status and whether or not concern about development exists (e.g., Francis, Iglesias, and Miller 2004; Golberg, Paradis, and Crago 2008; Hammer, Lawrence, and Miccio 2007; Jacobson and Schwartz 2002; Jia and Fuse 2007). Examples of the topics that are reported to

be included in these questionnaires are; language of input, age of exposure to English, sources of exposure to English, and demographic variables. Data on the validity of these questionnaires is often not reported so it is difficult to determine which of these variables should be used to determine children's bilingual status and language ability.

Three studies to date have reported on the reliability of questionnaires focusing on development or risks about concern in school age bilingual children. Restrepo (1998) studied parent reports on language development as a means of predicting whether or not bilingual children have language learning delays or disorders. Data on parent report of concerns about speech and language development for 5–7-year-old bilingual children was combined with information on number of errors per utterance. Using a classification analysis, children were identified as having typical or impaired language development with high levels of accuracy. Note that all the families who participated in this project had children who were already enrolled in special education services. Thus, their views may have been informed in part by their participation in school experiences.

Gutierrez-Clellen and Kreiter (2003) developed parent and teacher surveys to determine if parental reports of age of exposure, amount of input, and literacy activities were good predictors of narrative based measures of performance. They also evaluated the extent to which parents' and/or teachers' judgments of proficiency were accurate predictors of 7- and 8-year-old children's narrative performance in English and Spanish. Their survey included many of the questions about parent's concerns about language development addressed by Restrepo (1988). The best predictor of performance on the narrative outcomes measures was amount of language input. Parent rating of Spanish proficiency was more highly correlated with their children's grammaticality in Spanish stories. Their judgments of English abilities did not match the teachers' ratings. In English, teachers' ratings were more highly correlated with English grammaticality. Here the children were older and had been in school longer than the participants in the Restrepo (1998) study so it seems reasonable that the teachers could better judge the English abilities while parents were more accurate for Spanish. When the same questionnaire developed by Gutierrez-Clellen and Kreiter was used to predict speech outcomes in 5–7-year-old children, parent reports of language output were not predictive of speech sound development though overall judgments of proficiency were predictive (Goldstein et al. 2010). These findings led Goldstein and colleagues to question the utility of parent report particularly in the domain of speech development. These differences help to illustrate why practitioners are sometime hesitant to rely on parent report. More information about the relationship between parent report and measured is needed about children who are just entering school.

### **Language proficiency, dominance, and ability**

Keeping in mind the need to understand matches and mismatches between parent and teacher rating of student language ability we evaluated the concordance between parent and teacher reports of proficiency and concern about language development, in children who were starting out in school (enrolled in preschool, kindergarten, and first grade) and between the ages of 4;0 and 5;11 years. We compared the results of the parent and teacher rating based on an individually administered questionnaire to children's scores on the Semantics

and Morphosyntax subtests of the *Bilingual English Spanish Assessment (BESA)* (Peña et al. in preparation).

We were interested in three constructs: proficiency, dominance, and ability. We defined **proficiency** as how well children speak the language of interest as defined by their parents and teachers. In the literature **dominance** has been defined as a measure of relative proficiency (i.e., in which language is a child more proficient) (Gathercole and Thomas 2007) or a measure of relative use (i.e., which language does a child hear or use more often) (Grosjean 2010). In this study we adhered to the second definition because it helps us understand in which language parents and teachers have more opportunity to judge a child's skills. We were also interested in language **ability** (Bedore and Peña 2008). Children with low language ability or language impairment have difficulties learning even when they have adequate exposure to the language. In this study we used parents' and teachers' ratings of concern about language abilities as a predictor of language ability. We used clinician concern (rated as difficulties in task administration at the time of testing) along with low performance on a validating measure of narrative production as a measure of low language ability.

We addressed four questions about the convergence of parent and teacher report with measured language performance. First we addressed the question of how well parent and teacher ratings of language proficiency in each language correlated with children's semantic and morphosyntactic scores in Spanish and/or English on the BESA. Then we asked if parent and teacher indications of concern were correlated with children's BESA scores. Next we explored the extent to which parents and teachers were concerned about the same children. Finally, we combined these variables in a regression analysis to determine which variables were most useful in predicting children's performance in English and Spanish. Our goal in addressing these questions was to determine the extent to which parents and teacher can provide reliable and useful information about the language development of bilingual children at school entry.

In line with the literature we expected that parents and teachers would make accurate predictions about children's language abilities but that this would be achieved by their attending to different aspects of the child's communicative skill set. The current study adds to our understanding of the validity of parent and teacher rating of communicative ability in two ways. First, past studies have evaluated the rating of children who have already been in school for several years. These parents' ratings may be influenced by their interactions with the schools. Here we will focus on children and their families who are just starting their formal education and whose views are less likely to be influenced by school input. This study then may allow a more independent judgment at a time when parents will have spent more time with their children than teachers are spending with their children. Second, past studies have used a single measure to evaluate the reliability of parent and teacher ratings so it is difficult to identify the source of rating discrepancies. By evaluating semantic and syntactic knowledge independently we should gain more information about the nature of any differences in concerns. By examining the predictive validity of the information available on the questionnaire we address the ways that parent and teacher information might be used to inform educational and clinical practice.



## Method

### Participants

Five hundred and forty-nine children aged 4;0 to 5;11 years ( $M = 4;8$ ) were selected from a pool of children participating in the norming study of the Bilingual English Spanish Assessment (BESA) (Peña, et al. in preparation). They were selected for this analysis if they fell within the target age range. All children came from central Texas, San Diego, California or Philadelphia, Pennsylvania school districts that recruit large numbers of Hispanic children. In these schools children participated in bilingual programs where they were taught in Spanish and English or in schools where they were taught in English and had English as a second or additional language support. Of the children with sex reported, 241 children were male and 243 were female.

### Procedures

**Parent and teacher questionnaires**—We administered a parent questionnaire that was developed for use in conjunction with the BESA to gather information about the children's language history questionnaire based on previous work by Restrepo (1998) and Gutiérrez-Clellen and Kreiter (2003). Parents were contacted by phone or in person. We asked about the parents' educational attainment and where they were educated to understand how educational background might influence parental reports of proficiency and ability. We asked parents to identify on an hour-by-hour basis the children's use of English, Spanish or both on a typical weekday and weekend day to estimate current usage for the measure of language dominance. We considered level of bilingualism to be a continuous variable (Grosjean 2010; Valdes and Figueroa 1994). Thus, children were classified as Spanish dominant if they heard and used Spanish 60% of the time or more and they were classified as English dominant if they heard and used English 60% of the time or more. Children were considered to have balanced dominance if they used Spanish and English each 40 to 60% of the time. We asked the parent to rate on a scale of from 0 (Cannot speak the language) to 4 (Native-like proficiency) how well the child used and understood English and Spanish in order to obtain ratings of proficiency in English and Spanish. Finally we asked parents to tell us if they were concerned about their child's language abilities. Specific comments made by parents about language concerns were recorded verbatim. Parent reports were obtained for 440 children.

Information on level and place of parents' education was collected on 285 fathers and 389 mothers. Descriptive information for the parents of these children is provided in Table 1. The Spanish dominant group had the lowest proportion of parents with at least a high school degree (29.2% and 35.3%, respectively), while the majority of parents of English dominant and balanced dominance children had at least a high school degree. Among parents of Spanish dominant children, both parents were as likely to have completed a high school degree, but mothers were twice as likely to have received schooling above the high school level. Among parents of English dominant children, similar proportions completed both a high school degree and received schooling above the high school level. A higher percentage of fathers of balanced dominance children received a high school degree than mothers, but a higher percentage of mothers received schooling above the high school level.

Approximately 85 percent of the parents of Spanish dominant children attended school in Latin America, which included Mexico, Central America, South America, Puerto Rico, and the Dominican Republic. Parents of English dominant children were more likely to have attended school in the United States, 82.8 percent of fathers and 86.6 percent of mothers, than in Latin America. About two-thirds of the parents of balanced dominance children received schooling in the United States, and about one-third received schooling in Latin America. Two hundred fifty-two children were classified as Spanish dominant, 183 were classified as English dominant, and 66 were classified as having balanced language dominance based on home language use (see Table 2).

Teacher reports were similar to parent questionnaires. Teachers provided information about the relative use of Spanish and English in the classroom, they rated children's language proficiency on the same scale as used by the parents, and they indicated if they had concerns about the children's language development. Reports were gathered from teachers on 308 children.

**Language Testing**—All of the children were administered Spanish and/or English subtests of the *BESA* (Peña et al. in preparation) to directly assess the semantic, morphosyntactic, pragmatic, and phonological skills of children. There are Spanish and English versions of the test. Criterion-related validity is 0.865 for the Spanish version of the test and 0.845 for the English version. Reliability has been found to range from 0.784 to 0.840 in Spanish semantics, from 0.812 to 0.918 in English semantics, and over 0.90 in Spanish and English morphosyntax. In this study we focus on the parent and teacher questionnaire data as it relates to children's semantics and morphosyntax raw scores. The semantics subtest consists of a series of stories read to the child by the examiner. As the child is shown illustrations of the objects or activities discussed in the stories, s/he is asked to respond to questions designed to tap receptive and expressive semantic knowledge (see Bedore et al. 2005; Peña, Bedore, and Rappazzo 2003; Peña, Bedore, and Zlatic-Guinta 2002). The morphosyntax subtest also consists of a series of pictures in a cloze task. The examiner reads a complete sentence while pointing to a picture. S/he then reads a second sentence corresponding to another, similar picture that the child completes using morphosyntactic markers such as possessives, plurals, verb tense, and person. Sentence repetition comprises the second part of the morphosyntactic test and is used to test more complex forms that cannot be elicited using cloze tasks (see Gutiérrez-Clellen, Restrepo, and Simón-Cerejido 2006; Gutiérrez-Clellen and Simón-Cerejido 2007 for more information about the tasks).

Children were tested in their stronger language based on parent or teacher report, and were tested in both if they were reported to be bilingual. Spanish semantics assessments were given to 287 of these children, and English semantics assessments were given to 310 children. Two hundred and forty-one children were administered the Spanish morphosyntax assessment, and 218 children were administered the English morphosyntax assessment.

Trained speech-language clinicians also elicited narrative and conversational play-based language samples from the children at the time they completed the *BESA* testing. Low child responsiveness with high clinician effort during elicitation of the language sample was flagged



as a clinician concern within the context of the narrative elicitation (Peña, Gillam, and Resendiz 2007). Samples were transcribed using the conventions of the Systematic Analysis of Language Transcripts (SALT, Miller and Iglesias 2008) and then coded for grammaticality at the utterance level. Language *ability* was determined based on a minimum of two of four language impairment indicators. The first was a measure of ungrammaticality on the first 100 utterances of a language sample in the dominant language (both languages if dominance was balanced). Based on the findings of Restrepo (1998), an impairment indicator was flagged if ungrammaticality was greater than 20%. The second through fourth indicators were the parent's concern about the child's speech or ability to understand; the teacher's concern about language problems; and the clinician's concern that the child may be at-risk for language impairments. Impairment indicators were flagged if the response to any of these was affirmative. If two of the four indicators were flagged, a classification of language impairment was made. A classification of normal language ability was made otherwise. Table 2 presents the number of children in the final classifications for each of the variables.

**Analyses:** The first set of data analysis included calculating the correlations between proficiency as assessed by parents and teachers and semantics and morphosyntax scores for two sets of children, Spanish dominant and English dominant. Children with balanced dominance were included in both sets. Correlations were calculated using Kendall's  $\tau$  (Kendall and Gibbons 1990), which is appropriate when one of the variables to be correlated is ordinal, and the other is interval.  $\tau$  is a robust measure that is insensitive to outliers and makes no assumptions about the form of the underlying distribution (Cliff, Collins, and Horn 1991). The formula for  $\tau$  is given by

$$\tau = P[(X_1 - X_2)(Y_1 - Y_2) > 0] - P[(X_1 - X_2)(Y_1 - Y_2) < 0] \quad (1)$$

where  $X_1$  and  $Y_1$  and  $X_2$  and  $Y_2$  are the independent pairs of observations on two variables.

Kendall's  $\tau$  yields results similar to those yielded by Spearman's  $\rho$ , a more popular nonparametric measure of association, but differ in both their interpretation and metric. Kendall's  $\tau$  measures the probability of concordance less the probability of discordance. Spearman's  $\rho$  is less easy to interpret: it is the product-moment correlation between two ranks.  $\tau$  tends to be about 50% smaller than  $\rho$  in absolute value (Fredricks and Nelson 2007; Kendall and Gibbons 1990). As compared to  $\rho$ , however,  $\tau$  was found to have lower false positive (Type I) error rates, less bias, and more estimation efficiency in a simulation study consisting of 5000 bootstrap samples (Arndt, Turvey, and Andreasen 1999).

## Results

### Are proficiency ratings correlated with semantics and morphosyntax scores?

Kendall's  $\tau$  was calculated to determine the magnitude and direction of the correlations between pairs of variables reported in Table 3. The correlations between parents' ratings of proficiency with child semantics and morphosyntax scores, and teachers' proficiency ratings

on the same variables for all children regardless of dominance are included in Table 3. The upper top table bank provides correlations related to Spanish proficiency, and the lower top bank provides correlations related to English proficiency. There were moderate positive correlations between parent ratings of proficiency and test scores. There was a nonsignificant correlation between teacher Spanish proficiency rating and semantics scores implying that the correlation between the two was not significantly different from 0. There was a weak positive correlation between morphosyntax scores and teacher ratings of Spanish proficiency. All of the other teacher-related correlations were significant and were similar to parent related correlations.

To consider if parents' and teachers' ratings were more highly correlated to the language that child used more often we evaluated correlations by language including the children in their dominant language. The children with balanced dominance were included in both languages since they made sufficient use of each language so as to permit judgment. Correlations for Spanish dominant including balanced dominance children are provided in the middle bank of Table 3. Both parents' and teachers' proficiency ratings correlated positively with test scores, although the correlations for parents were somewhat higher than they were for teachers. Surprisingly, even for Spanish dominant children, there was a moderate positive correlation between parents' ratings of English proficiency and scores (lower middle bank of Table 3). There was also a positive correlation between teachers' ratings of English proficiency and semantics scores, and a nonsignificant relationship between teachers' ratings and morphosyntax scores. As a group these findings suggest that ratings of proficiency are correlated with measured skills in English and Spanish. Parent's ratings correlated for their children's dominant and dominant language based on measures of use. Teacher's ratings were more highly correlated for the morphosyntax score suggesting that they attended to language *form*.

The lower bank of Table 3 provides correlations for English dominant including balanced dominance children. Similar to what was observed for Spanish dominant children, there were moderate positive correlations between parents' ratings of English proficiency and test scores. The correlation between teacher proficiency ratings and semantics scores was not significantly different from 0, but there was a moderate positive correlation between teacher proficiency ratings and morphosyntax scores. Even for English dominant children, parents' ratings of Spanish proficiency and test scores (in English) were moderately positive. There was no significant relationship between teachers' ratings of Spanish proficiency and test scores; this is possibly due to English-speaking teachers' inability to adequately rate Spanish proficiency.

### **Are concern ratings correlated with semantics and morphosyntax scores?**

Our next analysis focused on the correlations between parent and teacher indicators of concern and children's test scores in English and Spanish on the semantics and morphosyntax subtests of the BESA. As above we employed Kendall's  $\tau$  to determine the magnitude and direction of the correlations between pairs of variables which are reported in Table 4. The correlations between indicators of concern and child semantics and morphosyntax scores, and teachers' concern ratings on the same variables for all children

regardless of dominance are included in Table 4. The upper top table bank provides correlations related to Spanish concerns, and the lower top bank provides correlations related to English concern ratings. Parent and teacher concern indicators showed a negative correlation with test scores. Negative correlations between concern and test scores were anticipated, implying that as scores increased, parent indicators of concern decreased.

Correlations for Spanish dominant including balanced dominance children are provided in the middle bank of Table 4. There were significant negative relationships between concern indicators and Spanish scores both for parent and teachers and nonsignificant relationships between concern indicators and English scores. The latter finding is not surprising because parents and teachers are likely to not indicate concern about language problems in the non-dominant language.

Correlations between English concern ratings and BESA scores are in the lower bank of Table 4. There were significant negative correlations between morphosyntax scores in Spanish but nonsignificant relationships between concern indicators and semantics performance proficiency for parent and teachers. No significant concern correlations were indicated for English. In the parent's case this may reflect lack of knowledge of English development. Recall that many of the parents were not educated in the US and may have less knowledge of English development and also lack awareness of the school-based expectations about academic language use in English. English-speaking teachers on the other hand may lack the knowledge about second language development to report concern about English language development.

### Do parent and teacher concerns converge?

Our next question focused on the convergence between parents and teacher's concerns. Were they concerned about the same children? Correlations between parent and teacher concern indicators were calculated. Overall, there was a moderately positive correlation between parent and teacher concern ( $r = .309, p < .001$ ). This appeared to be driven by the correlation between parent and teacher concern indicators for Spanish dominant children ( $r = .354, p < .001$ ), but the association was due to the *absence* of concern indicators rather than the presence of them. The correlation between parent and teacher concern was significant but small ( $r = .199, p < .02$ ) for English dominant children. There were no mutual parent and teacher concern indicators for 47.5% of Spanish dominant children and no mutual parent and teacher concern indicators for 34.7% of English dominant children. Thus the stronger correlation for Spanish dominant children was due to more children with no parent-and-teacher concern indicators.

The number of children with both parent and teacher concern indicators was small, 15 and 10 for Spanish and English, respectively. Parents' comments were analyzed for children who had both parent and teacher concern indicators and were found to be similar for both Spanish and English speaking children. Most often cited concerns were problems with self-expression or finding the right words; talking too fast; not talking in full sentences or not finishing sentences.

All parent concern comments were also analyzed regardless of whether there was a teacher concern noted. Comments from parents of Spanish dominant and English dominant children differed. Parents of Spanish dominant children focused more on the symptoms of possible language impairment, while the parents of English dominant children indicated that the children were already engaged in the treatment system. Commonly cited concerns from the parents of Spanish dominant children were ‘doesn’t pronounce well’, ‘uses incorrect vowel and consonant sounds’, and ‘has problems finding the right words’. Among the parents of English dominant children common concerns were ‘in speech therapy’, ‘stutters’, and ‘problems run in the family’.

### Which variables predict children’s test scores?

A least squares general linear model approach to multiple regression was used to determine which of several variables significantly predicted semantics and morphosyntax scores for Spanish dominant and English dominant children. As in the correlational analysis, balanced bilingual children were included in both analytic sets. The independent variables were Spanish and English proficiency ratings, parent concern, teacher concern, percent Spanish and English output at home based on parent assessment, percent Spanish and English exposure at school based on teacher assessment, Spanish and English use ratings based on parent and teacher assessment, child’s gender, and ability. Independent variables were entered simultaneously and were evaluated for inclusion using a stepwise technique. One set of regressions was run using parent questionnaire data and another set was run using teacher questionnaire data.

Table 5 provides results from the regression of parent reported and teacher reported variables on semantics score for Spanish dominant children. For parent-related information, the model was significant:  $F(7, 185) = 9.74, p < .0001$  and accounted for 26.9 percent of the variation in Spanish semantics scores. Significant predictors of Spanish semantics score were parent ratings of Spanish proficiency and language ability. For teacher-related information the model was also significant:  $F(7, 118) = 6.18, p < .0001$  and accounted for 26.8 percent of the variation in Spanish semantics scores. However, language ability was the only significant predictor of Spanish semantics score. This result indicated that for children in the 4 to 5 year age groups, parent ratings of proficiency are good predictors of Spanish semantics scores, while teacher ratings are not predictive. Teacher ratings may not be predictive for Spanish dominant children in these age groups because the teachers may tend to be English speaking only or not highly proficient in Spanish themselves. A related possibility is that regardless of teacher Spanish proficiency, the classroom setting may focus more on English than Spanish giving teachers less opportunity to observe children’s Spanish skills.

The results of the regression on semantics scores for English dominant children are provided in Table 6. Both models were significant, parent:  $F(7, 150) = 6.50, p < .0001$ ; teacher:  $F(7, 81) = 2.35, p = .03$ , and the models accounted for 23.3 percent and 16.9 percent, respectively, of the variance in English semantics scores. The significant parent-related predictors of semantics scores for English dominant children were Spanish proficiency, English proficiency, language ability, and Spanish use. Language ability was the only significant predictor among the teacher-related variables.

Table 7 provides regression results for Spanish dominant children on morphosyntax scores. Both models were significant parent:  $F(7, 159) = 10.94, p < .0001$ ; teacher:  $F(7, 111) = 9.32, p < .0001$ . Parent-related variables explained 32.5 percent of the variance in morphosyntax scores. Teacher-related variables explained more of the variance in Spanish morphosyntax scores than in Spanish semantics scores (37.0%). Spanish proficiency and language ability were the only statistically significant predictors of Spanish morphosyntax scores in the parent-related model, and language ability was the only significant predictor in the teacher-related model.

Regression results for English dominant children on morphosyntax score are provided in Table 8. Both models were significant for parent and teacher responses respectively:  $F(7, 115) = 11.24, p < .0001$ ;  $F(7, 71) = 7.48, p < .0001$ . Both explained more of the variance in English morphosyntax scores than in English semantics scores (parent: 40.6%; teacher: 42.5%). Language ability and English use were the only significant predictors of English morphosyntax scores among parent-related variables. Spanish proficiency, English proficiency, language ability, gender, and average English use were significant predictors of English syntax scores among teacher-related variables.

It is interesting to note that when predicting both Spanish and English semantics scores, parents' proficiency ratings were significant predictors, but when predicting Spanish and English morphosyntax scores, parents' proficiency ratings were not. This may be due to the fact that for parents, language proficiency may be a more salient component of performance as measured by semantics scores than performance as measured by morphosyntax scores, a more academically influenced performance measure. It may also be that for Spanish dominant children in the 4 to 5 year age groups, parents who are Spanish dominant are good judges of Spanish proficiency. A similar mechanism may be acting among English dominant children in these age groups: these parents are likely English dominant, thus making them good judges of English proficiency.

For teachers, language proficiency was a significant predictor of morphosyntax scores only when the child was English dominant. This implies that to the extent that teachers are not proficient in Spanish, they may not be able to use knowledge about language proficiency to predict performance in Spanish dominant children in the 4 to 5 year age groups.

## Discussion

It is important to systematically gather information from parents and teachers for the purpose of making clinical decisions. Teacher and parent report is a potentially informative source of information about a child's language proficiency and ability status. Data from studies and questionnaires about educator needs suggest that educators do not know how to accurately interpret what parents from culturally and linguistically diverse backgrounds tell them. This is a critical topic for speech-language pathologists and other early childhood educators because current statements of best educational practices emphasize the importance of bridging gaps between home and school knowledge bases. Clinicians and educators need to know what questions to ask, how to ask them, and how to interpret this information. In the context of more recent emphasis on making decisions based on principles of evidence based

practice an important aspect for development of intervention plan is the client or family's own goals (Dollaghan 2007). Here, we extend knowledge on this topic by systematically addressing questions about proficiency, ability, and concern and validating their responses by studying the relationship between the parent report and test scores in the domains of semantics and morphosyntax in English and/or Spanish. We also examined the extent to which parent and teacher concern and lack of concern overlapped.

We began by looking at the correlations between proficiency and semantic and morphosyntax outcomes and by looking at the correlations between concern and semantic and morphosyntax outcomes. Overall, there were moderately positive correlations of proficiency ratings and test scores. As expected teacher and parent concerns negatively correlated with test scores. Parents and teachers, however, seemed to focus on different aspects of language. Teachers focused more on morphosyntax indicated by higher correlations of their ratings with the morphosyntax test. On the other hand, parents' ratings were more highly correlated with the semantics test results though their ratings suggested a broad awareness of their children's language skills. As expected, concern was generally negatively correlated with test scores.

This general pattern of correlations between ratings of proficiency and language test scores converges with findings showing that parents and teachers rate child language behaviors accurately (e.g., Gutiérrez-Clellen and Kreiter 2003; Jackson-Maldonado et al. 1993; Marchman, Martínez-Sussmann, and Dale 2004; Restrepo 1998; Thal et al. 2000). Here the parents presumably had enough bilingual proficiency to rate their children's language use in Spanish and in English but teachers' ratings showed much lower correlations with children's Spanish language test scores. Some teachers may lack the Spanish proficiency or the exposure to the children's Spanish for them to accurately rate children's language proficiency in Spanish. This is consistent with Gutierrez-Clellen and Krieter's (2003) findings for teachers of slightly older children. In addition, what these findings show, that past studies have not separated, is that there are differences in accuracy of ratings in semantics and syntax across languages and groups. These findings suggest that even when parents and teachers agree about language learning status they reach their conclusions by attending to different aspects of language performance.

It is important to keep in mind that parents and teachers observe children in different linguistic contexts. This may contribute to different views on what language skills are most important and help us understand differences in rating of concerns. An example is found in Massa, Gomes, Tartter, Wolfson, and Halperin (2008) who asked parents and teachers to complete the observational checklist that was developed as part of the *Clinical Evaluation of Language Function* (Editions 3 and 4; Semel, Wiig, and Secord 1997; Semel, Wiig, and Secord 2003) and correlated their ratings with CELF performance. Parent ratings correlated more highly with language components (Speaking and Understanding) while the teacher ratings correlated more highly with Reading scores. These findings suggest a teacher focus on academic applications of language. For the younger children in our study teacher concerns may focus on morphosyntax because it plays a key role in the oral narrative skills required in the early school years as a foundation for reading.



Because there was concordance between parent and teacher concerns we explored the nature of their concerns and the extent of overlap. Prior research suggests that the nature of these concerns is likely to differ but studies have not usually validated concern and proficiency rating with an external measure. A large part of the agreement observed here is derived from the large numbers of children for whom there were concurring ratings of no-concern. Where there were concerns we examined the nature of the expressed concerns. Though teachers demonstrated higher correlations in their ratings of morphosyntax they tended to comment infrequently on the children's language skills. They were only accurate when rating the children's language skills (proficiency or concern) in English. The parents had high levels of accuracy regardless of the language in which they were rating the children's language development. These findings point to fact that parents can provide reliable information during the diagnostic process.

The expressed concerns of the parents whose children spoke English versus those whose children spoke Spanish differed in kind. The parents of English dominant children stated their concerns using the terms that specifically reflected communication disorders such as indicating that their child stuttered or that the child was enrolled in speech therapy. In contrast the parents of the Spanish dominant children reported concerns in developmental terms not in terms of disability (e.g., the child is hard to understand or cannot recall words). This pattern of descriptions is in line with that reported by Pérez (2000) and García, Pérez, and Ortiz (2001) in which the parents of Spanish speaking children described concerns in developmental terms even though their children had a diagnostic label that lead to their enrollment in an early intervention program. These differences in the ways that parents report concern highlight the importance of listening to parent concerns and considering parent's cultural background to accurately interpret what they say. These findings also highlight the notion that parents (of Hispanic children from low SES background) know their children and provide useful information about concern. However, teachers and clinicians need to listen carefully in order to accurately interpret the expression of concern. What may seem to be lack of awareness may be a different way of interpreting or expressing the same information.

Given the associations that we observed we explored the predictive value of parent and teacher ratings of child concern, proficiency, and ability in Spanish and English. Based on these findings we begin to observe patterns of predictions that will help us understand what we need to attend to when listening to parent and teacher concerns. Parent ratings of proficiency and ability were significant predictors of English and Spanish semantics and morphosyntax scores. This reinforces the idea that parents are reliable reporters of their children's language proficiency and ability. Further, they seemed to focus more globally on language ability even if they were asked about Spanish and English proficiency separately. Teachers were not inaccurate reporters but language ability was the common positive predictor across all of the models. These findings are reminiscent of the data reported by Marchman and Martinez-Sussman (2002) who had families identify relevant informants about their children's language skills using the MacArthur Bates Communicative Development Inventory in English (Fenson, et al. 2006) and Inventarios de Habilidades Comunicativas for Spanish (Jackson-Maldonado, et al. 2003). Here different caregivers including parents, relatives who lived in the child's home, and daycare providers all

responded to the CDI and or IHDC based on their experiences with the child's communication skills. Ratings were consistently high across measures regardless of the overlap in reporters across the survey based and language sample measures. Future studies in this area should also include teacher ratings of their own Spanish proficiency to better understand their abilities to rate the children's Spanish language skills.

In summary, parents' and teachers' ratings for participants were on target. Parents were able to make judgments about Spanish and English and their ratings were predictive of children's performance on the Semantics and Morphosyntax subtests of the BESA. Teachers were also able to provide accurate ratings of the children's language ability but there were areas in which teachers were less reliable informants than the parents. Even if teachers were bilingual the emphasis on English language learning tended to result in more accurate with English language ratings. Their concerns were better predictors of morphosyntax scores than semantics scores suggesting that in their focus on academic skills language form may be more salient to them.

It is clearly important to consider parent and teacher concerns about children when making educational decisions. In determining how to interpret what parents tell us as educators it is important to be aware that the parents of school age Spanish dominant children are likely to express their concerns differently than the parents of English dominant children. Parents of Spanish speaking children are more likely to be recent immigrants. As such, their cultural notion of language ability may be different from the US mainstream consistent with work by Harry (1992). On the other hand, young English dominant children were more likely to have parents who were educated in the US and likely socialized to the majority culture. Their notions of 'concern' about language development more closely match the US mainstream definition of language ability. Thus, it is important to systematically obtain parental input when making educational decisions. Future efforts should focus on gathering more specific information about concern when it exists as relatively few parents in either group articulated specific concern.

While there are a great number of studies evaluating the validity of parent report for English speaking children, there are fewer studies of a similar kind for evaluating parent report for children from ELL backgrounds. The few studies available point out the need to gain information about both languages of a child (Marchman and Martinez-Sussman 2002; Pearson, Fernández, and Oller 1993). In this study we collected data on both of the languages of some but not all of the children. The activities of school and home are often different which means that different behaviors may be observed in these contexts. For ELL children, these different contexts additionally occur in different languages. Thus, the situation specific language that children learn may be encoded in two different languages (Pearson and Fernández 1994; Peña et al. 2002; Umbel et al. 1992). If the teacher does not speak the home language and the parent does not speak the school language it is more critical to gather information from multiple sources. Understanding what these different informants attend to will help interpret information gathered from them. In future studies we can broaden our understanding by ensuring that we collect test data on children from bilingual backgrounds in both languages regardless of level of bilingualism.

Another challenge in conducting this work is determining the best way to account for the children's bilingual status. Children who are balanced bilinguals may be growing up with different experiences than their English dominant peers or than their Spanish dominant peers who are in the process of becoming bilingual. These children are more likely to be the children of second generation immigrants than first generation immigrants (Suro and Passel 2003). Such families are more likely to be able to judge the child's development in both languages if they speak both languages. They may also have slightly differing concerns about development since they have more experience with English and the US school system. The grouping may have affected the findings since the comparison groups were not mutually exclusive. However, omitting balanced bilinguals altogether or classifying them with either the Spanish dominant or English dominant groups denies the reality of the existence of a balanced bilingual phenomenon.

The finding that parents and teachers reach similar conclusions based on different sets of judgments also merits further exploration. Relative to the question of lack of knowledge about how to use parent input in making educational decisions it is sufficient for educators to know that there is convergence and thus parent concern (or lack of concern) merits attention. However, in future work it would be beneficial to explore the source of differences in judgments. Home school linguistic and cultural mismatch is receiving renewed attention in an effort to understand sources of disproportionality in special education programs. Research has shown that when educators and families are able to better bridge the home school gap that they are able to achieve better and more satisfactory outcomes.

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## References

- Arndt S, Turvey C, Andreasen A. Correlating and predicting psychiatric symptom ratings: Spearman's rho versus Kendall's tau correlation. *Journal of Psychiatric Research*. 1999; 33(2):97–104.
- Artiles AJ, Rueda R, Salazar JJ, Higuera I. Within-group diversity in minority disproportionate representation: English language learners in urban school districts. *Exceptional Children*. 2005; 71(3):283–300.
- Bedore LM, Peña ED. Assessment of bilingual children for identification of language impairment: Current findings and implications for practice. *International Journal of Bilingual Education and Bilingualism*. 2008; 11(1):1–29.
- Bedore LM, Peña ED, García M, Cortez C. Conceptual versus monolingual scoring: When does it make a difference? *Speech, Language, Hearing Services in Schools*. 2005; 36(3):188–200.
- Bracken BA. Ten psychometric reasons why similar tests produce dissimilar results. *Journal of School Psychology*. 1988; 26(2):155–66.
- Broomfield J, Dodd B. Children with speech and language disability: Caseload characteristics. *International Journal of Language & Communication Disorders*. 2004; 39(3):303–24. [PubMed: 15204443]
- Caesar LG, Kohler PD. The state of school-based bilingual assessment: Actual practice versus recommended guidelines. *Language, Speech, & Hearing Services in Schools*. 2007; 38(3):190–200.
- Chesterfield R, Hayes-Latimer K, Barrows-Chesterfield K, Chávez R. The influence of teachers and peers and second language acquisition in bilingual preschool programs. *TESOL Quarterly*. 1983; 17(3):401–19.

- Cliff, N., Collins, LM., Horn, JL. Best methods for the analysis of change: Recent advances, unanswered questions, future directions. Washington, DC: American Psychological Association; 1991. Ordinal methods in the assessment of change; p. 34-46.
- Dale PS. The validity of a parent report measure on vocabulary and syntax at 24 months. *Journal of Speech & Hearing Research*. 1991; 34(3):565-71. [PubMed: 2072681]
- Dollaghan, CA. *The handbook for evidence-based practice in communication disorders*. Baltimore, MD: Paul H. Brookes; 2007.
- Fenson, L., Marchman, VA., Thal, D., Dale, PS., Reznick, JS., Bates, E. *MacArthur Bates Communicative Development Inventories*. 2. Baltimore: Paul H. Brookes; 2006.
- Fox J, Cheng L. Did we take the same test? Differing accounts of the Ontario Secondary Literacy Test by first and second language test-takers. *Assessment in Education: Principles, Policy & Practice*. 2007; 14(1):9-26.
- Francis, DJ., Iglesias, A., Miller, J. Narrative language skills and reading achievement in bilingual children. Paper presented at the Symposium on Research in Child Language Disorders; Madison, WI. 2004. ?Month?
- Fredricks GA, Nelson RB. On the relationship between Spearman's rho and Kendall's tau for pairs of continuous random variables. *Journal of Statistical Planning and Inference*. 2007; 13(7):2143-50.
- Gándara, P., Maxwell-Jolly, J., Driscoll, A. *Listening to teachers of English Language Learners*. Santa Cruz, CA: The Center for the Future of Teaching and Learning; 2005.
- García SB, Pérez A, Ortiz A. Mexican American mothers' beliefs about disabilities. *Remedial and Special Education*. 2000; 21(2):90-100.
- Gathercole, VCM., Thomas, EM. Factors contributing to language transmission in bilingual families: The core study – adult interviews. In: Gathercole, V., editor. *Language transmission in bilingual families in Wales*. Bangor: University of Wales; 2007. p. 59-182.
- Gillam SL, Gillam RB. Making evidence-based decisions about child language intervention in schools. *Language, Speech, and Hearing Services in Schools*. 2006; 37(4):304-15.
- Golberg H, Paradis J, Crago M. Lexical acquisition over time in minority first language children learning English as a second language. *Applied Psycholinguistics*. 2008; 29(1):41-65.
- Goldstein B, Bunta F, Lange J, Rodriguez J, Burrows L. The effects of measures of language experience and language ability on segmental accuracy in bilingual children. *American Journal of Speech-Language Pathology*. 2010; 19(3):238-47. [PubMed: 20484707]
- González N, Andrade R, Civil M, Moll L. Bridging funds of distributed knowledge: Creating zones of practices in mathematics. *Journal of Education for Students Placed at Risk*. 2001; 6(1):115-32.
- Grieco, E. *English abilities of the U.S. foreign born-population*. Washington, DC: Migration Policy Institute; 2003.
- Griffer MR. A competency-based approach to conducting family-centered assessments: Family perceptions of the speech-language clinical process in early intervention service delivery. *Infant-Toddler Intervention*. 1997; 7(1):45-65.
- Grosjean, F. *Bilingual life and reality*. Cambridge, MA: Harvard University Press; 2010.
- Gutiérrez-Clellen VF, Kreiter J. Understanding child bilingual acquisition using parent and teacher reports. *Applied Psycholinguistics*. 2003; 24(2):267-88.
- Gutiérrez-Clellen VF, Restrepo MA, Simón-Cerejido G. Evaluating the discriminant accuracy of a grammatical measure with Spanish-speaking children. *Journal of Speech, Language, and Hearing Research*. 2006; 49(6):1209-23.
- Gutiérrez-Clellen VF, Simón-Cerejido G. The discriminant accuracy of a grammatical measure with Latino English-speaking children. *Journal of Speech, Language, and Hearing Research*. 2007; 50(4):968-81.
- Hammer CS, Detwiler JS, Detwiler J, Blood GW, Qualls CD. Speech language pathologists' training and confidence in serving Spanish-English bilingual children. *Journal of Communication Disorders*. 2004; 37(2):91-108. [PubMed: 15013728]
- Hammer CS, Lawrence F, Miccio A. Bilingual children's language abilities and early reading outcomes in Head Start and Kindergarten. *Language, Speech, and Hearing Services in Schools*. 2007; 38(3):237-48.

- Hardin BJ, Roach SM, Peisner-Feiberg ES. Special education referral, evaluation, and placement practices for preschool English learners. *Journal of Research in Childhood Education*. 2007; 22(1): 39–54.
- Harry B. Making sense of disability: Low-income Puerto Rican parents' theories of the problem. *Exceptional Children*. 1992; 59(1):27–40. [PubMed: 1396949]
- Hwa-Froelich DA, Westby CE. Considerations when working with interpreters. *Communication Disorders Quarterly*. 2003; 24(2):78.
- Jackson-Maldonado, D., Thal, D., Marchman, V., Newton, T., Fenson, L., Conboy, B. MacArthur Foundation: Communicative Development Inventory. Baltimore, MD: Paul H. Brookes; 2003. El Inventario del Desarrollo de Habilidades Comunicativas: User's guide and technical manual.
- Jackson-Maldonado D, Thal D, Marchman VA, Bates E, Gutiérrez-Clellen VF. Early lexical development in Spanish-speaking infants and toddlers. *Journal of Child Language*. 1993; 20(3): 523–49. [PubMed: 8300774]
- Jacobson PF, Schwartz RG. Morphology in incipient bilingual Spanish-speaking preschool children with specific language impairment. *Applied Psycholinguistics*. 2002; 23(1):23–41.
- Jia G, Fuse A. Acquisition of English grammatical morphology by native Mandarin-speaking children and adolescents: Age-related differences. *Journal of Speech, Language, and Hearing Research*. 2007; 50(5):1280–99.
- Jordan GE, Snow CE, Porche MV. Project EASE: The effect of a family literacy project on kindergarten students' early literacy skills. *Reading Research Quarterly*. 2000; 35(4):524–46.
- Kamhi AG. Toward a theory of clinical expertise in speech-language pathology. *Language, Speech, and Hearing Services in Schools*. 1994; 25(2):115–8.
- Kendall, MG., Gibbons, JD. Rank correlation methods. 5. Oxford, UK: Oxford University Press; 1990.
- Klingner JK, Artiles AJ. English language learners struggling to learn to read: Emergent scholarship on linguistic differences and learning disabilities. *Journal of Learning Disabilities*. 2006; 39(5): 386–9. [PubMed: 17004671]
- Kritikos E. Speech-language pathologists beliefs about language assessment of bilingual/bicultural individuals. *American Journal of Speech-Language Pathology*. 2003; 12(1):73–91. [PubMed: 12680815]
- Marchman VA, Martínez-Sussman C. Concurrent validity of caregiver/parent report measures of language for children who are learning both English and Spanish. *Journal of Speech, Language and Hearing Research*. 2002; 45(5):983–97.
- Marchman VA, Martinez-Sussmann C, Dale PS. The language-specific nature of grammatical development: Evidence from bilingual language learners. *Developmental Science*. 2004; 7(2):212–24. [PubMed: 15320381]
- Massa J, Gomes H, Tartter V, Wolfson V, Halperin JM. Concordance rates between parent and teacher clinical evaluation of Language Fundamentals Observational Rating Scale. *International Journal of Language & Communication Disorders*. 2008; 43(1):99–110. [PubMed: 17852530]
- Miller, J., Iglesias, A. Systematic Analysis of Language Transcripts (SALT) Research Version 2008. Madison, WI: SALT Software LLC; 2008.
- Moll LC, González N. Lessons from research with language-minority children. *Journal of Reading Behavior*. 1994; 26(4):439–56.
- Obied VM. How do siblings shape the language environment in bilingual families. *International Journal of Bilingual Education and Bilingualism*. 2009; 12(6):705–20.
- Pearson BZ, Fernández S, Oller DK. Lexical development in bilingual infants and toddlers: comparison to monolingual norms. *Language and Learning*. 1993; 43(1):93–120.
- Pearson BZ, Fernández SC. Patterns of interaction in the lexical growth in two languages of bilingual infants and toddlers. *Language Learning*. 1994; 44(4):617–53.
- Peña ED, Bedore LM, Rappazzo C. Comparison of Spanish, English, and bilingual children's performance across semantic tasks. *Language, Speech & Hearing Services in the Schools*. 2003; 34(1):5–16.
- Peña ED, Bedore LM, Zlatic-Guinta R. Category-generation performance of bilingual children: The influence of condition, category, and language. *Journal of Speech, Language and Hearing Research*. 2002; 45(5):938–47.

- Peña ED, Gillam RB, Resendiz M. The role of clinical judgments of modifiability in the diagnosis of language impairment. *Advances in Speech Language Pathology*. 2007; 9(4):332–45.
- Peña ED, Gutierrez-Clellen V, Iglesias A, Goldstein BA, Bedore LM. Bilingual English Spanish Assessment (BESA). In preparation.
- Pérez A. Mexican American mothers' perceptions and beliefs about language acquisition in infants and toddlers with disabilities. *Bilingual Research Journal*. 2000; 24(3):277–95.
- Redmond SM, Rice ML. Stability of behavioral ratings of children with SLI. *Journal of Speech, Language, and Hearing Research*. 2002; 45(1):190–201.
- Rescorla L. The Language Development Survey: A screening tool for delayed language in toddlers. *Journal of Speech & Hearing Disorders*. 1989; 54(4):587–99. [PubMed: 2811339]
- Restrepo MA. Identifiers of predominantly Spanish-speaking children with language impairment. *Journal of Speech, Language, & Hearing Research*. 1998; 41(6):1398–411.
- Roseberry-McKibbin C, O'Hanlon L. Nonbiased assessment of English Language Learners: A tutorial. *Communication Disorders Quarterly*. 2005; 26(3):178–85.
- Semel, E., Wiig, EH., Secord, WA. *Clinical Evaluation of Language Fundamentals-3 Spanish*. San Antonio, TX: Harcourt; 1997.
- Semel, E., Wiig, EH., Secord, WA. *Clinical Evaluation of Language Fundamentals®. 4*. San Antonio, TX: Harcourt; 2003.
- Suro, R., Passel, J. *The rise of the second generation: Changing patterns in Hispanic population growth*. Washington, DC: Pew Hispanic Center; 2003.
- Thal DJ, Jackson-Maldonado D, Acosta D. Validity of a parent-report measure of vocabulary and grammar for Spanish-speaking toddlers. *Journal of Speech, Language, and Hearing Research*. 2000; 43(5):1087–100.
- Thal DJ, O'Hanlon L, Clemmons M, Fralin L. Validity of a parent report measure of vocabulary and syntax for preschool children with language impairment. *Journal of Speech Language & Hearing Research*. 1999; 42(2):482–96.
- Tomblin JB, Records NL, Buckwalter P, Zhang X, Smith E, O'Brien M. Prevalence of specific language impairment in kindergarten children. *Journal of Speech, Language, and Hearing Research*. 1997; 40(6):1245–60.
- Turnbull AP, Summers J, Turnbull R, Winton P, Snyder P, Chandler L, Stroup-Rentier V. Family supports and services in early intervention: A bold vision. *Journal of Early Intervention*. 2007; 29(3):187–206.
- Umbel V, Pearson BZ, Fernández MC, Oller DK. Measuring bilingual children's receptive vocabularies. *Child Development*. 1992; 63(4):1012–20. [PubMed: 1505238]
- Valdes, G., Figueroa, R. *Bilingualism and testing: A special case of bias*. Norwood, NJ: Ablex; 1994.
- Westerlund M, Sundelin C. Screening for developmental language disability in 3-year-old children. Experiences from a field study in a Swedish municipality. *Child: Care, Health and Development*. 2000; 26(2):91–110.
- Winter K. Numbers of bilingual children in speech and language therapy: Theory and practise of measuring their representation. *International Journal of Bilingualism*. 2001; 5(4):465–95.
- Yamamoto M. Language use in families with parents of different native languages. *Journal of Multilingual and Multicultural Development*. 2002; 23(6):531–54.



**Table 1**

Parent descriptives by level and place of education.

Dominance	Spanish		Balanced		English	
	Paternal	Maternal	Paternal	Maternal	Paternal	Maternal
Level of Education (%)						
High School	22.7	22.3	44.4	38.9	40.9	38.0
College or more	6.5	13.0	19.4	24.1	30.7	29.2
N	154	193	36	54	88	137
Place of Education (%)						
United States	11.8	12.1	63.2	60.0	82.8	86.6
Latin America	84.9	84.6	36.8	36.7	17.2	13.4
Combination	3.4	3.4	0.0	3.3	0.0	2.1
N	119	149	19	30	64	97

**Table 2**

Number of children classified by language dominance and language ability.

<b>Dominance</b>	<b>Spanish</b>	<b>Balanced</b>	<b>English</b>
	252	66	183
	Language Ability		
Normal Language	202	60	126
Language Impaired	47	6	126

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Correlations between parent and teacher proficiency rating and BESA scores for all children, Spanish dominant only, and English dominant only.

**Table 3**

	Semantics		Morphosyntax	
	Score	P value	Score	P value
<b>All children</b>				
Parent Span proficiency rating	.254	<.001	.273	<.001
Teacher Span proficiency rating	.114	NS	.154	.02
Parent Eng proficiency rating	.259	<.001	.300	.001
Teacher Eng proficiency rating	.177	.006	.232	<.001
<b>Spanish Dominant only</b>				
Parent Span proficiency rating	.235	<.001	.255	<.001
Teacher Span proficiency rating	.135	.04	.148	.03
Parent Eng proficiency rating	.325	<.001	.280	.004
Teacher Eng proficiency rating	.319	.007	-.011	NS
<b>English Dominant only</b>				
Parent Span proficiency rating	.213	.001	.279	<.001
Teacher Span proficiency rating	.103	NS	-.271	.001
Parent Eng proficiency rating	.329	.01	.311	.01
Teacher Eng proficiency rating	-.064	NS	.039	NS

Correlations between parent and teacher indicators of concern and BESA scores for all children, Spanish dominant only, and English dominant only.

**Table 4**

	Semantics			Morphosyntax		
	Score	P value	(N)	Score	P value	(N)
<b>All children</b>						
Parent concern – Spanish	-.131	.006	(287)	-.182	<.001	(241)
Teacher concern – Spanish	-.272	<.001	(166)	-.293	<.001	(159)
Parent concern – English	-.132	.005	(310)	-.233	<.001	(218)
Teacher concern – English	-.173	.008	(164)	-.245	<.001	(144)
<b>Spanish Dominant only</b>						
Parent concern – Spanish	-.167	.002	(247)	-.207	<.001	(223)
Teacher concern – Spanish	-.273	<.001	(152)	-.295	<.001	(146)
Parent concern – English	-.023	NS	(107)	-.142	NS	(73)
Teacher concern – English	-.116	NS	(49)	-.111	NS	(46)
<b>English Dominant only</b>						
Parent concern – Spanish	-.178	NS	(221)	-.279	<.001	(169)
Teacher concern – Spanish	-.198	NS	(132)	-.354	<.001	(111)
Parent concern – English	-.033	NS	(67)	-.029	NS	(42)
Teacher concern – English	-.141	NS	(27)	-.290	NS	(25)

**Table 5**

Regression results, Spanish semantics scores, Spanish dominant children.

Variable	F-value	p-value
Parent Concern	.03	NS
Spanish Proficiency	14.26	.0002
English Proficiency	2.72	NS
Language Ability	21.44	<.0001
Gender	.00	NS
Spanish Use	.03	NS
English Use	.19	NS
N		193
Teacher Concern	.27	NS
Spanish Proficiency	.07	NS
English Proficiency	3.16	NS
Language Ability	24.10	<.0001
Gender	.04	NS
Average Spanish Use	1.48	NS
Average English Use	1.26	NS
N		126

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**Table 6**

Regression results, English semantics scores, English dominant children.

<b>Variable</b>	<b>F-value</b>	<b>p-value</b>
Parent Concern	2.02	NS
Spanish Proficiency	4.38	.038
English Proficiency	5.98	.012
Language Ability	12.87	.0005
Gender	2.98	NS
Spanish Use	4.14	.046
English Use	.30	NS
N		158
Teacher Concern	.15	NS
Spanish Proficiency	1.71	NS
English Proficiency	.86	NS
Language Ability	8.67	.004
Gender	1.94	NS
Average Spanish Use	.61	NS
Average English Use	1.74	NS
N		89

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**Table 7**

Regression results, Spanish morphosyntax scores, Spanish dominant children.

<b>Variable</b>	<b>F-value</b>	<b>p-value</b>
Parent Concern	.76	NS
Spanish Proficiency	4.90	.023
English Proficiency	1.09	NS
Language Ability	33.11	< .0001
Gender	1.18	NS
Spanish Use	1.54	NS
English Use	.06	NS
N	167	
Teacher Concern	.27	NS
Spanish Proficiency	.07	NS
English Proficiency	3.16	NS
Language Ability	24.10	< .0001
Gender	.04	NS
Average Spanish Use	1.48	NS
Average English Use	1.26	NS
N	119	

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**Table 8**

Regression results, English morphosyntax scores, English dominant children.

<b>Variable</b>	<b>F-value</b>	<b>p-value</b>
Parent Concern	2.89	NS
Spanish Proficiency	.41	NS
English Proficiency	1.27	NS
Language Ability	31.44	< .0001
Gender	.09	NS
Spanish Use	.35	NS
English Use	5.37	.022
N		123
Teacher Concern	.70	NS
Spanish Proficiency	4.72	.033
English Proficiency	7.40	.008
Language Ability	11.27	.001
Gender	5.69	.012
Average Spanish Use	.66	NS
Average English Use	5.68	.020
N		79

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