

Vocabulary Development in Spanish-speaking Head Start Children of Puerto Rican Descent

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1. Background

Latinos have recently become the largest minority living within the United States. Although usually grouped into one category, Latinos are a very heterogeneous group. Spanish-speakers in the United States are struggling with both maintaining their home language and learning English, the school and community language. Because language development is a critical precursor to literacy, we must understand the language skills of bilingual children as they begin the learning-to-read process. It is also important to understand factors in the home and school that will assist in predicting children's literacy skills (Hammer, Miccio & Wagstaff, 2003; Payne, Whitehurst, & Angell, 1994; Snow, Burns, & Griffin, 1998).

Studies of monolingual English-speaking children in the U.S. and monolingual Spanish-speaking children in Mexico and Spain have provided the benchmark against which the language development of bilingual English- and Spanish-speaking children has been measured. As a result, a small body of literature provides us with information about the developmental course of bilingual children living in the United States (see Merino, 1992; Anderson, 1995; Bedore, 1999, for a review). No evidence, however, suggests that bilingual learners are similar to monolingual learners of Spanish and English.

Vocabulary development is an important precursor to reading development (Tabors, Páez, & López, 2003). Although many researchers have studied vocabulary development in monolingual children, much more information is needed about the dual language vocabulary development of young bilingual children. The purpose of this study was to investigate the vocabulary development of bilingual Head Start children of Puerto Rican descent who live in two different locations in the mainland United States and monolingual Spanish-speaking Head Start children living in Puerto Rico. Mothers' education and the usage of Spanish and English in the homes are also reported.

2. Method

2.1 Participants

Participants in this study were drawn from two larger projects, Bilingual Preschoolers: Precursors to Literacy, a longitudinal study of Spanish and English language and literacy development in 100 bilingual children in preschool through kindergarten in central Pennsylvania and the Early Childhood Study of Language and Literacy Development of Spanish-speaking Children, a longitudinal study of Spanish and English language and literacy development of 350 children in Massachusetts and 150 children in Puerto Rico from pre-kindergarten through second grade. All children in the present study were typically developing four-year-olds of Puerto Rican descent and attended Head Start programs in their communities. In the U. S. Mainland, the teachers and classroom assistants in the Head Start classrooms spoke primarily English to the children. In most classrooms, there was usually an adult who spoke Spanish. In Puerto Rico, teachers and classroom assistants spoke Spanish to the children. Data reported here are drawn from 38 participants in Pennsylvania (PA), 41 participants in Massachusetts (MA) and 95 participants in Puerto Rico (PR).

2.2 Procedures

2.2.1 Maternal questionnaires

Mothers of all participants completed detailed parent interviews that provided demographic data on each participant and the children's families. In addition, home language use questionnaires were completed that provided information on the use of Spanish and English by all members of the children's families and the languages spoken to the children.

2.2.2 Vocabulary measures.

The Picture Vocabulary subtest of The Woodcock Language Proficiency Battery – Revised (WLPB-R) (Woodcock, 1991; Woodcock & Muñoz-Sandoval, 1994) was administered to all children in the Massachusetts sample in both English and Spanish. This test is primarily a measure of expressive vocabulary with several items at the beginning of the assessment measuring receptive vocabulary. Children in the Puerto Rican sample were given the WLPB-R in Spanish only.

Children in the Pennsylvania sample's vocabulary abilities in Spanish and English were tested using the *Test de Vocabulario en Imágenes Peabody* (Dunn, Padilla, Lugo, & Dunn, 1986) and the *Peabody Picture Vocabulary Test III* (Dunn & Dunn, 1997). Both of these tests measure receptive vocabulary.

Trained examiners tested the children at the beginning and end of the school year (Times 1 and 2). All four assessments produced standard scores with a mean of 100 and a standard deviation of 15. All of these assessments were normed on monolingual populations representing a broad spectrum of socioeconomic backgrounds. Comparisons were made between time periods for all three samples, between the Pennsylvania and Massachusetts samples and between the combined Mainland samples and the Puerto Rican sample.

3. Results

3.1 Maternal questionnaires and home language usage

Mothers of all children in the U.S. Mainland were of Puerto Rican descent. Mothers of the Puerto Rican sample were all born in Puerto Rico and families used only Spanish at home. Participant characteristics are shown in Table 1.

Table 1. Participant characteristics by sample

	Sample size	Maternal education	Mother-to-Child language		Child's place of birth	
		Mean in Years	Bilingual	Spanish	US Mainland	Puerto Rico
PA	38	11.2	63.2%	36.8%	31	7
MA	41	12.5	51.2%	48.8%	35	6
PR	95	12.2	0	100%	0	95

3.2 Vocabulary development

3.2.1 Cross-language vocabulary results

Results revealed a decrease in the standard scores of the Pennsylvania sample from Fall to Spring on the *TVIP*. Although growth occurred in knowledge of Spanish vocabulary, it did not maintain the level of growth expected of monolingual speakers and continued to be more than one standard deviation below the mean. Results of the *PPVT-III* revealed better scores in English in the Spring in comparison to the Fall. Furthermore, children were approaching normal limits for monolingual children on the same measure of receptive English vocabulary (Table 2).

In the Fall, children in the Massachusetts sample who scored higher in English tended to score lower in Spanish and vice versa ($r = -.47^{***}$). There was a significant cross-language mean difference in both the Fall and the Spring. In the Fall, children scored two standard deviations below the mean in

understanding and use of Spanish vocabulary in comparison to monolingual speakers. English vocabulary scores fell slightly by the end of the school year (Table 2).

3.2.2 Comparison between Massachusetts and Puerto Rico samples

In both the Fall and the Spring, there were significant mean differences between the Spanish vocabulary scores of the children in the Massachusetts and Puerto Rican samples. The Puerto Rican sample, on average, scored two standard deviations above the Massachusetts sample. (See Table 2.)

Table 2. Vocabulary standard scores in the Fall (F) and Spring (S)

	F Mean (SD)	Range	S Mean (SD)	Range	Paired <i>t</i> -test	<i>r</i>
PA English Vocabulary	77.08 (15.42)	40-108	84.06 (12.10)	58-107	Significant <i>p</i> <.01	.661***
PA Spanish Vocabulary	74.55 (14.70)	56-112	69.85 (15.20)	52-107	Significant <i>p</i> <.05	.643***
MA English Vocabulary	72.34 (20.00)	36-110	67.46 (22.90)	2-106	Not significant	.657**
MA Spanish Vocabulary	55.73 (13.50)	10-83	55.76 (15.80)	25-95	Not significant	.523**
PR Spanish Vocabulary	83.93 (10.70)	63-117	87.19 (12.70)	60-124	Significant <i>p</i> <.01	.660***

4. Discussion

This study provides an overview of children of Puerto Rican descent who perform at varying proficiencies in both English and Spanish. Research on bilingual vocabulary development provides a better understanding of the diversity of Spanish speakers and bilingual language development.

Four-year-old children in Pennsylvania displayed gains in their receptive English vocabulary during the school year but did not have concurrent gains in Spanish vocabulary. Children in Massachusetts also displayed more abilities in English, but did not show gains in English or Spanish across time. This may be, in part, due to the fact that all questions on the *PPVT-III* and *TVIP* require pointing to the correct response out of 4, while only a few items at the beginning of the *WLPB-R* require a pointing response, the remainder of the questions require a productive response. Children in the Puerto Rican sample showed gains from Fall to Spring in Spanish and were considerably stronger than the Massachusetts sample in Spanish.

The Pennsylvania and Massachusetts samples were expected to display similar abilities in vocabulary skills, on average, even though they were assessed with two different measures of vocabulary skill; this, however, was not the case in this study. It is possible that this finding may be accounted for by differences in the test measures used in the two states. In future research, all samples will be assessed *WLPB-R* Picture Vocabulary Test so that comparisons may be made across all three samples.

Furthermore, all children in this study were from low socioeconomic backgrounds and were compared to norms established with monolingual children who represent the population spectrum of socioeconomic backgrounds. In conclusion, the Puerto Rican children in Pennsylvania and Massachusetts displayed different combinations of English and Spanish skills and different patterns of change across the preschool year. On average, monolingual Puerto Rican children displayed higher vocabulary levels than bilingual Puerto Rican children in the U.S. Mainland.

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