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Use of Spanish in Head Start and Dual Language Learners' Academic Achievement: A Mixed-Methods Study

DISSERTATION

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in Education

by

Elizabeth B. Miller

Dissertation Committee:
Professor George Farkas, Chair
Distinguished Professor Greg J. Duncan
Associate Professor Stephanie M. Reich
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2016

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DEDICATION

To

my parents

for their unwavering support and lifelong encouragement

and to

my mother and mother-in-law, z”l

for serving as role models for how to make a difference in the lives of young children

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ABSTRACT OF THE DISSERTATION

Use of Spanish in Head Start and Dual Language Learners' Academic Achievement:

A Mixed-Methods Study

By

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Doctor of Philosophy in Education

University of California, Irvine, 2016

Professor George Farkas, Chair

The number of Spanish-speaking Dual Language Learners (DLLs) is growing rapidly in the U.S., representing an increasing share of Head Start participants. The recent experimental Head Start Impact Study (HSIS) found that Spanish-speaking DLLs benefitted more from assignment to Head Start on some academic outcomes than monolingual-English speakers, and this dissertation aimed to understand whether classroom use of Spanish played a role in these impacts.

Specifically, this mixed-methods dissertation sought to answer: 1) What child, family, and institutional factors are associated with enrollment in early care environments that use Spanish for instruction?; 2) Are there main effects of Spanish language instruction on Spanish-speaking DLL children's English academic school readiness skills?; and 3) Does Head Start differentially benefit Spanish-speaking DLL children instructed in Spanish? These research questions were answered using the two largest, nationally representative samples of Head Start children – the HSIS and the Head Start Family and Child Experiences Survey (FACES, 2009

Cohort). Results showed that whether children's first language was exclusively Spanish and whether other DLL families previously attended the ECE arrangement predicted whether DLL children enrolled in centers that used Spanish for instruction. Further, DLL children instructed in Spanish had higher English receptive vocabulary skills at the end of Head Start than those not instructed, with children who attended Head Start and instructed in Spanish having the highest scores.

Using the results from these secondary data analyses, classroom observations were then conducted at four local Head Start sites to answer: 4) How is Spanish used in local Head Start classrooms, for what purposes, and how may the use of Spanish possibly contribute to DLL children's school readiness? Results showed that in accordance with Head Start's "whole child" model of development, Spanish was used to promote English oral language skills in academic, socio-emotional, and health domains as well as to strengthen the home-school partnership.

Taken together, the results of this mixed-methods dissertation imply that Head Start should continue targeting their resources in ways that support the home language such as bilingual teacher and staff hiring, classroom language supports, and curriculum decisions that stress the importance of both languages.

Introduction

The population of Dual Language Learner (DLL) children in the U.S. – young children who are learning more than one language simultaneously, their home language and English (Espinosa, 2013) – is growing rapidly. From 1994-95 to 2009-10, the number of school-aged DLLs increased by nearly 65% from 3.2 million students to over 5.2 million students (National Clearinghouse for English Language Acquisition, 2011), representing the fastest growing student segment in U.S. public schools (Calderón, Slavin, & Sánchez, 2011). Among younger children in Head Start and Early Head Start, DLLs now represent close to 40% of all participants, over 80% of who come from Spanish-speaking homes (U.S. DHHS, 2014).

In recent years, there has been a national push from developmental policy reports (e.g., Mancilla-Martinez & Lesaux, 2014; McCabe et al., 2013), research articles (e.g., Barnett, Yarosz, Thomas, Jung, & Blanco, 2007; Páez, Tabors, & Lopez, 2007) and Head Start mandates (U.S. DHHS, 2008) to include and incorporate DLL children's home language as much as possible in early care and education (ECE) settings. Yet, understanding why some Spanish-speaking parents enroll their children in ECE arrangements that use Spanish while others do not, and whether the effects of programs like Head Start on child development differ by classroom use of Spanish, remain key issues. In addition, the different patterns underlying classroom use of Spanish by teachers and students and how they may contribute to academic skills in a real-world context is critical and largely unknown.

This dissertation consists of three separate, independent chapters that read as stand-alone studies and will be published as such, however they are tied together in the concluding chapter. Taken together, the three studies examine factors related to enrollment in ECE arrangements that use Spanish, the role of classroom use of Spanish for DLL children's English academic

achievement, the extent to which it increases the effectiveness of Head Start, and the dynamics of classroom use of Spanish in local Head Start centers. They address important child care issues pertaining to the growing population of low-income, Spanish-speaking DLL families. The specific research questions addressed in this dissertation are:

1) What child, family, and institutional factors are associated with enrollment in ECE environments that use Spanish for instruction?
2) Are there main effects of Spanish language instruction on Spanish-speaking DLL children's English academic school readiness skills?
3) Does Head Start differentially benefit Spanish-speaking DLL children instructed in Spanish?
4) How is Spanish used in local Head Start classrooms, for what purposes, and how may the use of Spanish contribute to DLL children's school readiness?

This dissertation used mixed methods, and in particular, an explanatory sequential design (Creswell, 2014) in which quantitative data analysis was performed first, and then qualitative data were collected to help explain and elaborate on the quantitative results. The first three research questions were answered with a secondary data analysis of the two largest, nationally representative samples of Head Start children, families, and centers – the Head Start Impact Study (HSIS; U.S. DHHS, 2002-2006) and the Head Start Family and Child Experiences Survey, 2009 Cohort (FACES-2009; U.S. DHHS, 2009-2013). Qualitative observations at four, purposely-sampled local Head Start sites were then subsequently conducted over a period of several months to refine the results from the quantitative data analysis and to help answer the fourth and final research question by providing a more detailed understanding of classroom use of Spanish in a real-world context. The results help answer important questions related to

educating the growing population of Spanish-speaking DLLs with regard to teacher and staff hiring, classroom supports, and curriculum choices in Head Start classrooms.

Theoretical Framework

Two main theoretical frameworks guided my dissertation. The first and primary overarching framework was bioecological theory, which posits that human development results from the interplay of *Process* x *Person* x *Context* x *Time* (Bronfenbrenner & Morris, 2006). The core of the model is *Process*, which constitutes reciprocal and continuous interactions between an organism and their environment known as proximal processes, which are the engines of development. The effects of these proximal processes on developmental outcomes systematically vary based on the characteristics of the person and their environmental context. This dissertation considered the proximal processes of Spanish use in the context of Head Start classrooms for Spanish-speaking DLL children.

As part of these classroom language proximal processes, children continuously and reciprocally converse with adults, which extend over many turns and reference topics beyond just the immediate present. Consequently, children take part in the building of a complex linguistic structure such as a narrative or an explanation, where they ultimately learn to productively use language. From early naming exchanges with adults, children eventually become more adept at responding to listener's cues and creating sentences with new information (Tabors, 2008). These continuous and reciprocal language interactions enable children to participate in increasingly complex ways of communicating. Therefore, early language interactions support and privilege later literacy experiences (Uccelli, Hemphill, Pan, & Snow, 1999), particularly when they occur frequently in an ecological context like a Head Start classroom where DLL children may be encountering formal academic English for the first time.

The second guiding framework was particularly useful for Study 1, as it was a child care choice model that included facets of the accommodation framework (Meyers & Jordan, 2006; Weber, 2011) and sociocultural theory (Rogoff, 2003). The accommodation framework argues that child care decisions are often subject to multiple constraints (not just cost), as parents must optimize the decision not only for themselves, but also for their children, their workplace schedules, and government subsidy program requirements. Child care choices are therefore not discrete and static decisions, but rather are accommodations based on a dynamic interplay of opportunities and constraints determined by an extensive range of family, child, and community factors that tend to change as children age (Chaudry, Henly, & Meyers, 2010; Meyers & Jordan, 2006). Child care decision-making is accordingly not usually a linear process, but one that is multi-faceted and complex.

Moreover, when examining the child care experiences of specifically Spanish-speaking DLL families, a sociocultural theory of development (Rogoff, 2003) may be an appropriate additional analytical lens. According to sociocultural theory, children make sense of the world around them within the specific context of their culture, and their development is an interrelated process between the individual child and their broader social environment. Much less is known about the choice process for Spanish-speaking DLL families given their historic lower levels of enrollment in formal ECE at least partly stemming from issues of access and availability (Espinosa, 2013; Greenfader & Miller, 2014; Hernandez, Denton, & Macartney, 2011; Matthews & Jang, 2007). Consequently, in addition to the accommodation framework (Meyers & Jordan, 2006; Weber, 2011), Spanish-speaking DLL families' child care decisions are further subject to unique constraints of access, availability, and awareness of options within a broader sociocultural framework. Salient sociocultural factors pertaining to such access, availability, and awareness

such as immigration status, English language proficiency, country of origin, and language of the ECE setting may therefore be important theoretical considerations for DLL families' child care experiences (Hernandez, Denton, & Macartney, 2011).

Data

For the quantitative analyses, the two largest, nationally representative datasets on Head Start children, families, and programs were used to address the dissertation's first two studies – the Head Start Impact Study and the Head Start Family and Child Experiences Survey, 2009 Cohort. Exploratory classroom observations were then conducted in local Head Start centers to help explain and elaborate on the quantitative results in the final research study. Below, each of the data sources are described generally, and the individual chapters contain detailed information on the specific samples used in the studies.

Head Start Impact Study (HSIS; U.S. DHHS, 2002-2006)**.** The HSIS was a random assignment experiment designed to estimate the causal impact of Head Start on children's school readiness skills and parenting practices, as well as to determine under what circumstances Head Start achieved its greatest impact and for which children (U.S. DHHS, Final Report, 2010). The study employed a multi-stage sampling process to select a representative group of Head Start programs and children. 4,442 children in 383 centers were randomly selected – 2,646 for Head Start and 1,796 for the control condition. Data collection took place from fall 2002, when the treatment group entered Head Start, until spring 2006, at the end of first grade (U.S. DHHS, 2010). Data from the 2002-2003 Head Start year was analyzed for this dissertation. The main sample of interest in HSIS was Spanish-speaking DLL children. Approximately 25% of the total HSIS study sample (N = 1,141) was classified as Spanish-speaking DLLs – 690 in Head Start and 451 in the control condition.

Head Start Child and Family Experiences Survey, 2009 Cohort (FACES-2009; U.S. DHHS, 2009-2013)**.** Head Start FACES was launched in 1997 as a periodic, longitudinal study of program performance. Successive nationally representative samples of Head Start children, their families, classrooms, and programs were collected in 2000, 2003, 2006, and 2009 to provide descriptive information on the population served, staff qualifications, Head Start classroom practices and quality measures, and child and family outcomes. This dissertation used FACES-2009 due to its enhanced focus on children who speak a primary language other than English. The sampling design for FACES-2009 was similar to that of the HSIS and included a multi-stage sampling process to select a representative group of Head Start programs and children. In total, the FACES-2009 sample had 3,349 children in 129 centers. Data collection took place from fall 2009, when children entered Head Start, until spring 2012, at the end of kindergarten (U.S. DHHS, 2013). Data from the 2009-2010 Head Start year was analyzed for this dissertation. Again, the main sample of interest was Spanish-speaking DLL children. Approximately 25% of the total FACES-2009 study sample ($N = 825$) was classified as Spanish-speaking DLLs.

Local Head Start umbrella agency. The local Head Start umbrella agency in this study was located in a large, urban area in the southwestern U.S. It currently serves nearly 4,000 children, about 85% of whom are Latino. Given the high prevalence of Latino children, in conforming to national Head Start policy and according to the umbrella agency Executive Director, all the local Head Start classrooms strived to have bilingual lead and assistant teachers. However, the extent of Spanish use in each individual classroom varied depending on the proportion of Spanish-speaking DLLs as well as the Spanish abilities of the teachers. Thus, according to the Executive Director, while all classrooms were considered bilingual by the local

Head Start umbrella agency, there was wide variation in the extent of classroom Spanish use.

In consultation with the Executive Director and the Educational Director of the local Head Start agency four sites were purposely chosen throughout the county in order to observe a range of possible Spanish language classroom interactions between teachers and children over the course of a few weeks. The specific sites chosen each had a substantial population of enrolled Spanish-speaking DLL children, with their families having considerable variation in English language proficiency. For example, one of the sites served a newer Spanish-speaking immigrant community with little knowledge of English, whereas two other sites served more established second-generation communities with more English language skills though still not completely proficient, and the last site served a diversity of other language DLL families including a sizeable Spanish-speaking population. Therefore, these centers showcased that despite their common denominator of language, the extent of proficiency in English and the subsequent reliance on Spanish translations among enrolled families varied considerably. Further, according to the Executive and Educational Directors, these centers had a history of working with researchers from the local university and their directors were open to research-practice partnerships. Finally, four sites were chosen as a number that would sufficiently enable the detailed level of observational field notes.

Overview of Studies

Study 1: Child Care Enrollment Decisions Among Dual Language Learner Families: The Role of Spanish Language Instruction in the Child Care Setting. Prior research has documented that language of the child care setting is proving to be an increasingly-important consideration in child care enrollment for DLL families (Espinosa et al., 2013; Gordon, Colaner, Usdansky, & Melgar, 2013; Vesely, 2013; Ward, LaChance, & Atkins, 2011).

However, these studies have largely considered language to be one factor among many influencing the child care enrollment decision and included DLL children of varying income levels or were limited to small sample sizes.

In contrast, using the two largest nationally representative datasets on income-eligible Head Start children, families, and programs, this study uniquely focused on arrangements that explicitly instructed children in Spanish and sought to determine what predicted enrollment in such arrangements among Spanish-speaking DLL families. It was guided by Meyers and Jordan (2006)'s accommodation framework to the extent it was useful for articulating how various family, child, and community factors informed child care experiences subject to multiple opportunities and constraints, as well as by sociocultural theory to describe broader environmental factors specific to Spanish-speaking DLL families' enrollment decisions (Hernandez et al., 2011; Rogoff, 2003). Specifically, this study's primary research question was: among low-income, Spanish-speaking DLL families, what child, family, and institutional factors are associated with enrollment in ECE environments that used Spanish for instruction? The answer to this question enumerated what characteristics of the growing population of DLL families were associated with enrollment in ECE arrangements that explicitly instructed in Spanish. Further, it may help centers understand why participants attended their program and the role of language of instruction in this process.

Study 2: Spanish Instruction in Head Start and Dual Language Learners' Academic Achievement. Despite the emerging body of research on the differential benefits of ECE for Spanish-speaking DLLs (Buysse, Peisner-Feinberg, Páez, Hammer, & Knowles, 2014; Gormley, 2008; Loeb, Bridges, Bassok, Fuller, & Rumberger, 2007; U.S. DHHS, 2010), whether Spanish language instruction contributes to these benefits in various ECE settings such as Head Start

remains an empirical question. Further, prior studies examining the importance of Spanish language instruction for children's school readiness skills have relied on observational or survey data (e.g., Chang et al., 2007; Páez et al., 2007). Those that have taken advantage of random assignment experiments (e.g., Barnett et al., 2007; Dúran, Roseth, & Hoffman, 2010; Slavin, Madden, Calderón, Chamberlain, & Hennessy, 2011) used samples that were either small in size or not nationally representative of the DLL population in the U.S. Further, no known studies to date have analyzed whether Head Start program impacts may differ by Spanish instruction in the classroom.

To address this gap, therefore, this study used the two largest nationally representative datasets on income-eligible Head Start children, families, and programs (HSIS and FACES-2009) to test whether Spanish language instruction in Head Start boosted critical English. Specifically it asked: 1) Are there main effects of Spanish language instruction on Spanish-speaking DLL children's English academic school readiness skills?; and 2) Does Head Start differentially benefit Spanish-speaking DLL children instructed in Spanish? Addressing these questions helps Head Start programs elucidate what promotes better academic outcomes for the growing population of Spanish-speaking DLLs and whether Spanish language instruction in the classroom plays a role.

Study 3: How Spanish is Used in Head Start: Observational Evidence from Four Classrooms. Developmental research (e.g., Barnett et al., 2007; Páez et al., 2007) and policy reports (e.g., Mancilla-Martinez & Lesaux, 2014; McCabe et al., 2013) on language acquisition stress the importance of supporting children's home language in the classroom. However, given the practical challenges of how to best promote DLL children's language acquisition in their home language and English as well as the difficulty finding, attracting, and retaining bilingual

staff qualified in ECE (U.S. DHHS, 2008; Zepeda, Castro, & Cronin, 2011), little research to date has been able to determine exactly how teachers and staff use the home language in a real-world context.

The purpose of this study therefore was to ascertain how Spanish was supported day-to-day in Head Start classrooms. In particular, from exploratory observations in four purposely-sampled Head Start classrooms, it examined how Spanish was used in local Head Start settings, for what purposes, and how the use of Spanish may possibly contribute to DLL children's school readiness skills. Results from this study provided a detailed understanding of the heterogeneity in classroom Spanish use. It went beyond dichotomous variables about whether teachers reported using Spanish in the classroom and instead identified the different patterns underlying classroom Spanish use and how such use may be related to children's school readiness skills, particularly in English oral language.

Significance

This dissertation addresses important practical and policy questions. The first three research questions of the dissertation determined what characteristics of Spanish-speaking DLLs were associated with enrollment in ECE environments that used Spanish for instruction, the main effects of Spanish instruction on early academic skills, and whether Head Start was differentially beneficial based on such use. Addressing these questions is key for Head Start programs and policy as they help to elucidate what promotes better academic outcomes for this growing population and whether Spanish use in ECE settings plays a role. Based on these results, Head Start and other ECE programs can better target their resources in ways that conform to national Head Start policy by supporting home language use and providing care in more culturally-responsive ways such as bilingual teacher and staff hiring, classroom language supports, and

curriculum decisions that stress the importance of both languages (U.S. DHHS, 2008).

The fourth and final research question also has significance as it investigated the heterogeneity of classroom use of Spanish regarding who uses it in the classroom, for what purposes, and how it may relate to DLL children's school readiness. Identifying the different patterns underlying classroom use of Spanish and how they may be related to such things as children's English oral language skills provided invaluable insight into the quantitative analyses. Further, understanding how classroom use of Spanish as a construct should be conceptualized can further help the design of future studies on Spanish use in preschools, as currently, national data sets only have a few dichotomized language variables.

Taken together, the results of the large-scale quantitative and exploratory qualitative components of my dissertation will hopefully begin discussion about how to better capture the complex dynamics in the match between the classroom language environment and children's language abilities.

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Chapter 1: Child Care Enrollment Decisions Among Dual Language Learner Families: The Role of Spanish Language Instruction in the Child Care Setting

Abstract

Data from the Head Start Impact Study (N = 1,141) and the Head Start Family and Child Experiences Survey, 2009 Cohort (N = 825) were used to describe child care enrollment decisions among Spanish-speaking Dual Language Learner (DLL) families. In particular, logistic regression models tested which child, family, and institutional characteristics predicted enrollment in early care and education (ECE) settings that used Spanish for instruction versus enrollment in settings that did not use Spanish. Results showed that whether the child's first language was exclusively Spanish and whether other DLL families previously attended the ECE arrangement strongly predicted whether that child enrolled. Policy implications for Head Start-eligible Spanish-speaking DLLs are discussed.

Keywords: DLLs, Head Start, child care decisions, enrollment

Child Care Enrollment Decisions Among Dual Language Learner Families: The Role of Spanish Language Instruction in the Child Care Setting

Close to 60% of U.S. children under five years are cared for in non-parental settings including relative care (Laughlin, 2013). Enrolling children in child care is often a complex decision that parents make in light of both opportunities and constraints. Family and child characteristics, community contextual factors, and parental preferences all play a role in child care decisions (Chaudry, Henly, & Meyers, 2010; Pungello & Kurtz-Costes, 1999; Weber, 2011). Low-income parents in particular must often navigate the child care selection process with incomplete information about quality, cost, and alternative arrangements, while simultaneously juggling work schedules and the requirements of government subsidy programs (Chaudry et al., 2010). Dual Language Learner (DLL) families – families with young children tasked with learning more than one language simultaneously, their home language and English (Espinosa, 2013) – in particular may face an even more constrained child care decision-making process given that their English language skills may be limited. Because the majority of DLLs come from Spanish-speaking homes (García, 2012), Spanish use in the child care setting may prove a main factor influencing enrollment decisions for the DLL population.

Research syntheses to date have begun to enumerate important factors affecting the child care choice process for low-income families (Chaudry et al., 2010; Pungello & Kurtz-Costes, 1999; Weber, 2011). However, much less is known about child care decisions for Spanish-speaking DLL families despite the dramatically increasing numbers of DLL children in early care and education (ECE) arrangements like Head Start and Early Head Start (nearly 40% of participants; U.S. DHHS, 2014). Approximately 30% of all Spanish-speaking DLL children live in poverty (Stepler & Brown, 2015), and Spanish-speaking DLL children now constitute the largest total population of U.S. children living in poverty (López & Velasco, 2011). Therefore,

understanding the processes through which these families in particular negotiate child care experiences given multiple demands and how Spanish use in the child care setting specifically pertains to enrollment decisions, can help inform policy for this fast-growing demographic group.

Using data from the two largest, nationally representative datasets on Head Start – the Head Start Impact Study (HSIS; U.S. DHHS, 2002-2006) and the Head Start Family and Child Experiences Survey, 2009 Cohort (FACES-2009; U.S. DHHS, 2009-2013) – the purpose of the current study was to gain an understanding of factors that inform child care enrollment decisions among Head Start-eligible Spanish-speaking DLL families. Of particular importance was the examination of the language used by caregivers in the setting, and what may have predicted participation in arrangements that used Spanish for instruction over arrangements that did not use Spanish, as this may have proven critical to the enrollment process.

Child Care Decisions in the General Population

Theoretical frameworks guiding child care choice have traditionally come from the disciplines of economics (Blau, 2001) and psychology (Pungello & Kurtz-Costes, 1999). From economics, the basic model of consumer choice argues that individuals make decisions by examining tradeoffs among alternatives relative to their preferences, which are subject to time and money constraints. Such a model can predict child care choices as a result of changes in family income or increases in the price of child care. Models from psychology such as the one put forth by Pungello and Kurtz-Costes (1999) argue that the interwoven dimensions of family demographic and socioeconomic characteristics, child characteristics, home and community contexts, and parental beliefs and preferences inform families' child care decisions. Such models

are effective at explaining the multidirectional influences of child care choice (Chaudry et al., 2010).

More recently, Meyers and Jordan (2006) proposed an integrated child care decision framework by introducing the concept of child care decisions as "accommodations." This accommodation framework argues that child care decisions are often subject to multiple constraints (not just cost), as parents must optimize the decision not only for themselves, but also for their children, their workplace schedules, and government subsidy program requirements. Thus, child care choices are not discrete and static decisions, but rather are based on a dynamic interplay of opportunities and constraints determined by an extensive range of family, child, and community factors that tend to change as children age (Chaudry et al., 2010; Meyers & Jordan, 2006). Similarly, Weber (2011) argued that parental characteristics, values, and preferences for child care interact with perceived opportunities, constraints, and barriers, and through this interaction comes the selection of a child care arrangement. Child care decision-making is accordingly not usually a linear process, but one that is multi-faceted and complex.

Using such models, previous research has examined which factors predict child care choices in the general population. It has been well-documented, for example, that highly-educated mothers are more likely to use center-based care than mothers with fewer years of education (Fuller, Holloway, & Liang, 1996; Fuller, Holloway, Rambaud, & Eggers-Pierola, 1996; Johansen, Leibowitz, & Waite, 1996; Laughlin, 2013), and higher-income families are also more likely to use center-based care than lower-income families (Blau, 2001; Fuller, Kagan, Caspary, & Gauthier, 2002; Hirshberg, Huang, & Fuller, 2005; Laughlin, 2013). Additionally, infants and children of mothers employed part time tend to be cared for more by relatives than older, preschool-age children and children of mothers employed full time (Early & Burchinal,

2001; Laughlin, 2013). Moreover, parents who planned their child care enrollment earlier were more likely to use their preferred care type and to use higher quality settings relative to those parents who planned later (Gordan & Högnäs, 2006).

Research on racial and ethnic participation in ECE indicates that black families are more likely than white families to select center-based care (Fuller, Holloway, & Liang, 1996; Magnuson & Waldfogel, 2005), whereas Latino (and especially immigrant) families are more likely than other population subgroups to utilize relative or familial childcare (Beltrán, 2011; Fram & Kim, 2008; Fuller, Holloway, & Liang, 1996; Hernandez, Denton, & Macartney, 2011; Laughlin, 2013; Magnuson & Waldfogel, 2005). Other recent research, however, suggests that if center-based care options are available and accessible, and families know of their existence, Latino and DLL children will attend at the same rates as children of other subgroups (Espinosa et al., 2013; Greenberg & Kahn, 2012; Greenfader & Miller, 2014; Winsler, Robinson, & Thibodeaux, 2013).

Child Care Decisions Among Spanish-speaking DLL Families

In the general population, traditional choice frameworks are quite useful for articulating factors that may inform child care decisions. However, when examining the child care experiences of specifically Spanish-speaking DLL families, a sociocultural theory of development (Rogoff, 2003) may be an appropriate additional analytical lens. According to sociocultural theory, children make sense of the world around them within the specific context of their culture, and their development is an interrelated process between the individual child and their broader social environment. Much less is known about the choice process for Spanish-speaking DLL families given the historic lower levels of enrollment in center-based ECE of some Spanish-speaking DLL groups such as Mexican-origin Latinos (Espinosa et al., 2013;

Winsler et al., 2013). Further, despite research indicating the benefits of ECE for low-income Spanish-speaking DLL children (Buysse, Peisner-Feinberg, Páez, Hammer, & Knowles, 2014; Gormley, 2008; Loeb, Bridges, Bassok, Fuller, & Rumberger, 2007; U.S. DHHS, 2010a), other work indicates that poor access to ECE programs is a major barrier to their participation (Espinosa, 2013; Greenfader & Miller, 2014; Hernandez et al., 2011; Matthews & Jang, 2007), and even if such options are available, parents may not always be aware of their existence (Matthews & Jang, 2007). Consequently, in addition to the traditional consumer decision-making literature and the accommodation framework (Meyers & Jordan, 2006; Weber, 2011), Spanish-speaking DLL families' child care decisions are further subject to unique constraints of access, availability, and awareness of options within a broader sociocultural framework. Salient sociocultural factors pertaining to such access, availability, and awareness such as immigration status, English language proficiency, country of origin, and language of the ECE setting may therefore be important theoretical considerations for their child care experiences (Hernandez et al., 2011).

Although prior studies have attempted to ascertain which factors most strongly influence low-income Spanish-speaking DLL families' child care enrollment decisions, the research field is still nascent. The literature to date suggest that ECE enrollment decisions among Spanish-speaking DLL families may be particularly related to: 1) *monetary and other constraints* similar to other low-income families such as family earnings and the supply of ECE options in local communities (Delgado, 2009; Greenfader & Miller, 2014; Hernandez et al., 2011; Santhiveeran, 2010); 2) *factors specific to Spanish-speaking DLL families* such as country of origin, immigration status, parental fluency with English, and enrollment of other DLL families at the center (Greenfader & Miller, 2014; Hirshberg et al., 2005; Liang, Fuller, & Singer, 2000; Miller,

Votruba-Drzal, & Coley, 2013; Vesely, 2013; Ward, LaChance, & Atkins, 2011); and 3) *factors specific to Spanish-speaking DLL children* such as the child's Spanish and English language abilities and skills (Espinosa, 2013; Winsler et al., 2014).

The role of language of ECE setting. National Head Start policy mandates that its providers support DLL children's home language and deliver services to families in culturally responsive ways (U.S. DHHS, 2008). Therefore, a few select researchers have begun recently to focus on language of the ECE setting as a particularly salient factor related to the enrollment decisions of Spanish-speaking DLL families. Some of these studies are limited either by small sample sizes or samples not representative of the DLL population in the U.S. However, they are worth examining given this important and newly-emerging line of research inquiry, and because they employ a wide variety of research methods. Some are small qualitative studies, which help shed light on processes related to enrollment decisions, whereas others use nationally representative data.

Vesely (2013) conducted a qualitative study of how 40 first-generation, low-income immigrant mothers chose center-based child care for their young children. She found that although mothers selected center-based arrangements that would enable their children to learn English and interact with children from diverse backgrounds, equally or more important was the desire to enroll their children in ECE centers in which the provider also spoke Spanish. This served a dual purpose in that there was a structural convenience to having a provider speak the same language as the mother as well as a cultural way to recreate social experiences for their children similar to what they would have encountered in their home country such as El Salvador or Mexico. Thus, children could continue to learn Spanish while simultaneously learning English and mothers could easily communicate with the providers. Many of the mothers in Vesely's

(2013) study also reported using social connections of other mothers from their home country to help find, secure, and especially enroll their children in child care.

Similarly, Ward and colleagues (2011) conducted an exploratory study of low-income immigrant communities in Denver, Colorado and Portland, Maine, two cities with changing demographics typical of the U.S. as a whole. In each city, they ran six focus groups with immigrant parents of young children to ascertain beliefs about child care and factors influencing child care decisions. In addition to other beliefs about child care, many parents expressed concern that enrolling their children in English-only child care would risk loss of their home language and culture. Moreover, parents believed that their children would learn English no matter where they were cared for during the preschool years. However, their children would maintain their native language skills only if they were cared for by someone who spoke their language. This was particularly important for immigrant families, as they wanted their children to be able to communicate with relatives from their home country who did not speak English.

Espinosa and colleagues (2013) used the national Early Childhood Longitudinal Survey – Birth Cohort (ECLS-B) to compare the child care experiences of DLL families and monolingual English-speaking families. In particular, they found that Spanish-speaking DLL children were substantially more likely than other children to have a language other than English used in child care, especially when cared for by relatives or in home-based settings. Using the same data, Miller and colleagues (2013) and Gordon, Colaner, Usdansky, and Melgar (2013) reached similar conclusions: parents who had a desire for culturally-matched child care arrangements tended to utilize relative or home-based care over center-based care.

Lastly, although they did not examine language of the child care center specifically, Liang et al. (2000) studied several factors relating to child care selection including home

language. Importantly, in an effort to disaggregate data among the Latino population, they differentiated between Latino parents who reported that Spanish was the primary language spoken in the home versus those that reported mainly use of English. They found that children of DLL families who reported mainly using Spanish at home had much lower rates of center-based ECE enrollment than children of families who reported English as the primary spoken language at home, highlighting how home language may inform child care decisions.

Present Study

Although prior research has documented that language of the child care setting is proving to be an increasingly-important consideration in child care enrollment for DLL families, these studies have largely considered language to be one factor among many influencing the child care enrollment decision and included DLL children of varying income levels or were limited to small sample sizes. In contrast, using the two largest nationally representative datasets on income-eligible Head Start children, families, and programs, the present study uniquely focused only on arrangements that explicitly instructed children in Spanish and sought to determine what predicted enrollment in such arrangements among Spanish-speaking DLL families. It was guided by Meyers and Jordan (2006)'s accommodation framework to the extent it was useful for articulating how various family, child, and community factors informed child care experiences subject to multiple opportunities and constraints, as well as by sociocultural theory to describe broader environmental factors specific to Spanish-speaking DLL families' enrollment decisions (Hernandez et al., 2011; Rogoff, 2003). Specifically, this study's primary research question was: among low-income, Spanish-speaking DLL families, what child, family, and institutional factors are associated with enrollment in ECE environments that use Spanish for instruction versus enrollment in environments where Spanish is not used?

Hypothesized results. Based on prior research as well as sociocultural theory generally (Rogoff, 2003) and specific to Spanish-speaking DLLs (Hernandez et al., 2011), it was hypothesized that parents might be more likely to enroll their children in Spanish language instruction ECE arrangements over arrangements that did not use Spanish if their proficiency with English was limited in order to facilitate better communication about the child. Parents might also enroll in Spanish language instruction arrangements if they were more recent immigrants or if they wanted their child to continue to have a high degree of exposure to the home language through teachers, staff, and other DLL children, as they might share some of the same cultural and linguistic values of child rearing. Lastly, it was hypothesized that ECE centers might be more likely to place Spanish-speaking DLL children with teachers that spoke Spanish if the child's English proficiency was limited so as to assist them with Spanish while simultaneously teaching them English to boost their school readiness.

This study aimed to further the field's understanding of the needs of Spanish-speaking DLL children eligible for Head Start, as Head Start is the largest federally-funded, means-tested early childhood program and enrolls an increasing share of DLL children (nearly 40% of total Head Start and Early Head Start participants; U.S. DHHS, 2014). Therefore, enumerating what characteristics of this growing population are associated with enrollment in ECE arrangements that explicitly instruct in Spanish may help centers understand more why their participants attend their program and the role of language of instruction in this process. Specifically, by understanding these enrollment decisions, programs can better target their resources in ways that support home language use and provide care in more culturally-responsive ways such as bilingual teacher and staff hiring, classroom language supports, and curriculum decisions that stress the importance of both languages (U.S. DHHS, 2008).

Method

Participants

This study was based on data from the two largest, nationally representative datasets on Head Start children, families, and programs. The first was the Head Start Impact Study (HSIS; U.S. DHHS, 2002-2006), which was a random assignment experiment designed to estimate the causal impact of Head Start on children's school readiness skills and parenting practices, as well as to determine under what circumstances Head Start achieved its greatest impact and for which children (U.S. DHHS, 2010a). The second was the Head Start Child and Family Experiences Survey, 2009 Cohort (FACES-2009; U.S. DHHS, 2009-2013), which was a longitudinal study of program performance, and specifically the population served; staff qualifications, credentials, and opinions; Head Start classroom practices and quality measures; and child and family outcomes (U.S. DHHS, 2011).

HSIS. The HSIS was a nationally representative sample of 84 Head Start grantee and delegate agencies and nearly 5,000 newly entering, eligible three and four-year-old children. Children were randomly assigned to either: (1) a Head Start group that had access to Head Start program services; or (2) a control group that was not eligible to enroll in the Head Start center to which they applied for the lottery, but could enroll in other early childhood programs or services selected by their parents, including other Head Start centers not in the study (U.S. DHHS, Final Report, 2010).

The study employed a multi-stage sampling process to select a representative group of Head Start programs and children. It began with a list of 1,715 grantee and delegate Head Start agencies that were operating in Fiscal Year (FY) 1998-99. This pool was then organized into 161 geographic clusters across 25 strata in order to ensure variation across region of the country,

urban and rural location, race and ethnicity, and state pre-kindergarten and child care policies. One cluster was then randomly selected from each of the 25 strata yielding 261 grantee and delegate agencies. Agencies were eliminated if they had recently closed, merged, or were serving all eligible children in their communities, and smaller agencies were grouped together. Approximately three grantee and delegate agencies were then randomly selected from each of the 25 strata, yielding a final pool of 84 grantee and delegate agencies.

These 84 Head Start agencies generated lists of 1,427 individual centers that were expected to be in operation for the 2002-03 school year. After individual programs were eliminated because they had recently closed, merged, or were serving all eligible children in their communities, and groups of centers were stratified along the same dimensions as the geographical agency clusters, 383 individual centers remained (U.S. DHHS, Final Report, 2010).

Once the centers were selected, a lottery process was used to determine which children were and were not assigned a place in Head Start. The goal was to randomly select 27 children from each center – 16 to be assigned to Head Start and 11 to the control condition. In total 4,442 children were randomly selected – 2,646 for Head Start and 1,796 for the control condition. Data collection took place from fall 2002, at the time the treatment group entered Head Start, until spring 2006, at the end of first grade (U.S. DHHS, Final Report, 2010).

Approximately 25% of the total HSIS study sample (N = 1,141) was classified as Spanish-speaking DLLs (see Measures, below) – 690 in Head Start and 451 in the control condition. Half of the children in this subgroup sample were male, and about 10% were classified as having a disability at baseline. Nearly 70% of the mothers of Spanish-speaking DLL children had less than a high school education, and about 60% had immigrated to the U.S. in the

past ten years. The majority of Spanish-speaking DLL mothers were married (63%), and in 75% of Spanish-speaking DLL households, the biological parents lived together with the study child.

Complete descriptive statistics for Spanish-speaking DLL children and families are listed in Table 1.1, which also includes tests for treatment and control group differences. As shown in the table, balance was achieved on all covariates between the Head Start and control groups.

{Insert Table 1.1}

FACES-2009. Head Start FACES was launched in 1997 as a periodic, longitudinal study of program performance. Successive nationally representative samples of Head Start children, their families, classrooms, and programs were collected in 2000, 2003, 2006, and 2009 to provide descriptive information on the population served; staff qualifications, credentials, and opinions; Head Start classroom practices and quality measures; and child and family outcomes. This study used FACES-2009 due to its enhanced focus on children who speak a primary language other than English (U.S. DHHS, 2011).

The sample design for FACES-2009 was similar to that of the HSIS and included a multi-stage sampling process to select a representative group of Head Start 1) programs; 2) centers; 3) classrooms; and 4) newly-enrolled children. Sampling at the first three stages was done with probability proportional to size.

The sampling frame of eligible Head Start programs for FACES-2009 was constructed from the Head Start Program Information Report (PIR), and were stratified along 12 strata in order to ensure sufficient variation in census region, urbanicity, percentage of racial and ethnic minority enrollment, whether the program had at least 25% DLLs, program status as a public school district grantee, the percentage of children in the program whose primary home language was English, and the percentage of children with disabilities. From this frame, a sample of 60

programs was selected. In addition, approximately two centers per program and three classrooms per center were selected for participation. Within each classroom, a sample of newly-enrolled children was selected. In total, the FACES-2009 sample included 60 programs, 129 centers, 486 classrooms, and 3,349 children. Data collection took place from fall 2009, at the time the children entered Head Start, until spring 2012, at the end of kindergarten (U.S. DHHS, 2013a).

Approximately 25% of the total FACES-2009 study sample ($N = 825$) was classified as Spanish-speaking DLLs (see Measures, below). Similar to the HSIS, half of the children in this subgroup sample in FACES-2009 were male, and about 5% were classified as having a disability at baseline. Sixty percent of the mothers of Spanish-speaking DLL children had less than a high school education, and almost 60% had immigrated to the U.S. in the past ten years. Close to the majority of Spanish-speaking DLL mothers were married (43%), and in two-thirds of Spanish-speaking DLL households, the biological parents lived together with the study child. Table 1.1 provides complete descriptive characteristics of these participants as well.

Measures

Spanish-speaking Dual Language Learner (DLL) status. *HSIS.* Prior to program entry in the fall of 2002, treatment and control group children were administered a battery of assessments as a baseline measure of academic achievement. The language of this child assessment was chosen by HSIS as follows. At the start of the study in fall 2002, information was collected on each child's language ability. Assessors asked the child's primary caregiver at home three questions: (1) What language does the child speak most often at home?; (2) What language does the child speak most often at this child care setting?; and (3) What language does it appear this child prefers to speak? Children were tested in the language in which at least two of the three responses were the same (U.S. DHHS, Technical Report, 2010). A child was classified

as a Spanish-speaking DLL if they required assessment in Spanish at baseline. About 25% of the overall study sample required baseline assessment in Spanish (N = 1,141).

FACES-2009. In FACES-2009, all children at baseline were given the language screener the Preschool Language Assessment Survey 2000 (preLAS 2000; Duncan & DeAvila, 1998). Children whose parents reported their primary home language was Spanish and who made five consecutive errors on the preLAS were then routed to the Spanish-language cognitive assessment (U.S. DHHS, 2013a). Using the language screener criteria, about 15% of the total FACES-2009 sample (N = 512) required assessment in Spanish at baseline.

However, many researchers and policymakers who specialize in Dual Language Learning criticize these language screeners as problematic and not indicative of children's true language abilities (U.S. DHHS, 2013b). Rather, triangulation of methods that use data from the primary caregiver, such as the one employed by the HSIS, are better predictors of children's language abilities. Therefore, the same three classification questions in HSIS were used in FACES-2009. Because both studies were conducted by the U.S. Department of Health and Human Services, Administration for Children and Families, the same questions were available in both datasets. If the answer to two out of the three questions was Spanish, the child was considered a Spanish-speaking DLL. Categorized this way, about 25% of the FACES-2009 sample (N = 825) was classified as Spanish-speaking DLLs, indicating that using only the language screener vastly underestimated the number of these children in this sample. Fifty-three percent were assessed in Spanish at baseline (N = 436) and 47% were assessed in English (N = 389) according to the language screener. Thus, there was over 85% agreement between the two classification methods as to whom required Spanish language baseline testing. This study chose to use the latter

classification method, which is more strongly endorsed by DLL researchers and policymakers (U.S. DHHS, 2013b) and more closely aligned with the HSIS.

Spanish language classroom instruction. In both HSIS and FACES-2009, each study child's primary teacher or caregiver was asked if they taught the child in their care in Spanish. This variable was coded as "0" if the teacher/caregiver interviewed indicated they did not teach the children in Spanish and "1" if they did. Although this dichotomous variable was the best available in both datasets, it potentially masked tremendous variability in the amount and quality of such Spanish instruction. Some teachers might have used Spanish every day for rich content instruction and reported yes, whereas other teachers might have used Spanish much less frequently at once a week or once a month and for much simpler activities like counting numbers and responded the same. Despite the wide variability of Spanish instruction this variable could entail, it was the best available, albeit limited, measure for understanding classroom Spanish language use.

For HSIS children who attended Head Start and FACES-2009 children, this question was asked of the Lead Teacher in Head Start. For HSIS children in the control group, this question was asked of the child's primary teacher/caregiver – either the lead teacher in another program, the family day care provider, or the parent. Table 1.1 also provides information on the prevalence of Spanish instruction in HSIS and FACES-2009. The difference in mean Spanish instruction between the two studies was not statistically significant, and there was sufficient variation among Spanish-speaking DLL children for this outcome in both datasets.

Enrollment characteristics. This study used observable sociocultural measures from HSIS and FACES-2009 that might inform Spanish-speaking DLL families' enrollment decisions

in Spanish language instruction ECE settings. These enrollment characteristics are listed in Table 1.1 and are described below.

Maternal proficiency with English. In both HSIS and FACES-2009, this was a categorical variable of 1-7 rated by the study interviewers of the mother's proficiency in English from 1, "No English Language Problem" to 7 "Speaks English with Difficulty." The mean in HSIS was about 1.20, whereas the mean in FACES-2009 was about 2.25.

Maternal recent immigration status. In both HSIS and FACES-2009, this was a dichotomous variable indicating whether the child's mother was foreign born and had lived in the U.S. less than 10 years (1=Yes, 0=No). About 60% of the mothers in both HSIS and FACES-2009 were recent immigrants.

Child limited English proficient. In both HSIS and FACES-2009, this was a dichotomous variable rated by the study assessors of whether the study child had a problem understanding English (1=Very much or Somewhat, 0 = Not at all). The mean in both HSIS and FACES-2009 was about .66.

Child's first language is exclusively Spanish. In both HSIS and FACES-2009, this was a dichotomous variable indicating the first language a child was exposed to at home was exclusively Spanish (1=Yes, 0=No) as opposed to some combination of both Spanish and English or just English. Spanish was the exclusive first language for over 80% of the DLL children in HSIS and over 90% of the DLL children in FACES-2009.

Important child knows first language. In FACES-2009 only, the primary caregiver was asked how important it was to them that their child be able to communicate in their first language. This variable was dichotomized as 1, "Essential or Very important" or 0, "Somewhat

important or Not at all important." Over 90% of the primary caregivers in FACES-2009 indicated that it was important for the child to know their first language.

Proportion of other DLL children in the ECE setting. In both HSIS and FACES-2009, the center director reported the proportion of Spanish-speaking DLL children previously enrolled in the past year as a share of the total number of other enrolled children. The mean proportion of other DLL children in the ECE setting was about .66 in both HSIS and FACES-2009.

Competition from alternative ECE options in the neighborhood. In HSIS only, this was a categorical variable asked of the center director from 1-3 indicating the amount of competition faced from other ECE options in the neighborhood from 1 "Lots" to 3 "Not much or none." HSIS study administrators then collapsed the categories into a dichotomous variable to indicate whether there was limited competition (1=Yes, 0=No). The mean in HSIS was about .80.

Covariates. In order to reduce the standard errors of the coefficients, several child and family covariates were included in all analyses. The same set of covariates was used as was in the Final Report of the HSIS (2010), which included a broad set of key child and family demographic characteristics. Child covariates included: gender; whether the child was classified as having a disability at baseline; and age in weeks at the spring assessment. Family covariates included: caregiver age in years; an indicator of caregiver depression; highest level of maternal education; and three family structure variables including whether both biological parents lived with the child, whether the child's mother was married, and whether the mother was a teenage mother at the child's birth. For purposes of analyses, all the covariates were centered at their mean. Descriptive statistics for all covariates are displayed in Table 1.1.

Non-response. As with any longitudinal dataset, there was non-response in both HSIS and FACES-2009. In HSIS, spring child assessment response rates were correlated with

treatment or control status as well as child gender (U.S. DHHS, 2010b), whereas in FACES-2009 response rates were correlated with child gender and age (U.S. DHHS, 2013a). To control for this potential bias, this study weighted all analyses, including descriptives and estimation models, using the appropriate weights, which is based on the probability of sample selection at every stage multiplied by adjustment for the probability of non-response. The weights included in the analyses are listed at the bottom of every table and helped control potential non-response bias by compensating for different data collection response rates across these demographic groups of children. Weights are important in complicated multi-stage sampling studies such as the HSIS and FACES-2009 because they allow researchers to make inferences to the relevant general population, and they account for differential selection probabilities and differential non-response (U.S. DHHS, Technical Report, 2010).

Analysis Plan

The analytic sample for this study was restricted to Spanish-speaking DLL children in both datasets. Then, using the observable sociocultural measures from HSIS and FACES-2009 detailed above, a series of logistic regression models were estimated in which the various characteristics predicted a dichotomous (0,1) outcome – enrollment in ECE environments that used Spanish for instruction versus environments that did not – while controlling for other potentially important demographic covariates such as child gender, age, and maternal education. Each identified factor was first included on its own in the model, along with covariates, to see if it uniquely predicted enrollment in Spanish instruction ECE settings. Then a final model was run with all the identified factors included together, along with covariates, to see which among the bundle of factors most strongly predicted enrollment in ECE arrangements that instructed in Spanish. Thus, the final regression model was:

$$SPANISH\ \ ECE_i = \beta_0 + \beta_1 FACTOR_1 + \beta_2 FACTOR_2 + \ldots + \beta_k FACTOR_k + \ \gamma COVARIATES + e_i \ ,$$

where $SPANISH\ ECE_i$ was a dichotomous outcome whether the child was enrolled in an ECE setting where the teacher used Spanish for instruction; $FACTOR_{1\text{-}k}$ were the different proxy characteristics that possibly informed the decision to enroll in an ECE environment that used Spanish for instruction versus an environment that did not; *COVARIATES* was a vector of additional demographic covariates; and e_i was an error term.

Given the strong potential for Head Start center-level variation, the models included Head Start center-level fixed effects where possible. However, because two of the variables were reported by the center director (competition from alternative centers and proportion of other DLL children who previously attended the center), there was no variation at the center level and models that included these variables were not able to include Head Start center-level fixed effects. Finally, all of the models included standard errors properly adjusted for weighting and clustering. The use of both datasets offered convergence on important characteristics of Spanish-speaking DLLs that are associated with Spanish instruction ECE enrollment decisions.

The coefficients in all of the models are expressed as odds ratios (*OR*). Odds ratios represent the odds that an outcome will occur given a particular variable, compared with the odds of the outcome occurring in the absence of that variable. The present study calculated odds ratios to determine the association of a particular characteristic for DLL enrollment in a Spanish language instruction ECE environment over one that did not use Spanish. An odds ratio greater than 1 indicated that this characteristic increased the chance of enrollment in an ECE environment that used Spanish for instruction over a center that did not, whereas an odds ratio less than 1 meant that this characteristic reduced that chance.

Results

Preliminary Analyses

Preliminary analyses tested the association between each separate individual factor and enrollment in ECE environments that used Spanish for instruction, which are presented in Table 1.2. Among all Spanish-speaking DLL children, whether the child's first language was exclusively Spanish positively predicted whether the study child's parent enrolled them in an ECE setting that instructed in Spanish over one that did not in both HSIS and FACES-2009. Similarly, the higher the proportion of other Spanish-speaking DLL children previously enrolled in a given Spanish language center, the more likely the study child's parent enrolled them in that center in both datasets. In HSIS only, if the center faced limited competition from other ECE arrangements in the neighborhood, the study child's parent more likely enrolled them in an ECE setting that instructed in Spanish versus one that did not use Spanish.

{Insert Table 1.2}

Principal Regression Analyses

The principal regression analyses consisted of regressions that included all the factors together, which are also presented in Table 1.2. The same factors as in the individual runs remained significant predictors of ECE enrollment where Spanish was used for instruction across both datasets. If the study child's first language was exclusively Spanish, the parent was more likely to enroll them in an ECE setting that instructed in Spanish over one that did not in both HSIS ($OR = 4.10$, $p < .001$) and FACES-2009 ($OR = 3.18$, $p < .05$). Likewise, the higher the proportion of other Spanish-speaking DLL children previously enrolled in the Spanish language center, the more likely the study child's parent enrolled them in that center in both HSIS ($OR = 1.32$, $p < .001$) and FACES-2009 ($OR = 3.78$, $p < .05$).

Despite the expected high association among the enrollment characteristics, there was no evidence of multicollinearity in the analyses that included all of the factors. The highest correlation among any of the predictive factors was only .44 for maternal recent immigration status and whether the child was limited English proficient. Furthermore, a Variance Inflator Factor (VIF) test was performed, which quantifies the severity of multicollinearity by testing how much the variance of a regression coefficient increases because of multicollinearity. That is, how inflated the variance of a coefficient is compared to what it would be if the variable was uncorrelated with any other predictors in the model (Allison, 1999). All of the VIFs from each of the enrollment characteristics were less than two. Although there is no official criterion for how high a VIF indicates a serious multicollinearity problem, it is generally accepted that a VIF of less than ten indicates tolerable multicollinearity (Hair, Anderson, Tatham, & Black, 1995; Menand, 1995; O'Brien, 2007).

Lastly, because this study analyzed two independent samples of Head Start programs, families and children collected seven years apart with varying sample sizes, it further tested whether the odds ratios from HSIS and FACES-2009 were significantly different from each other using a two-sample test of independent means to see if the results from each dataset individually truly replicated across both. Specifically, the *p*-value of the HSIS/FACES-2009 difference for the first significantly predictive factor, the child's first language was exclusively Spanish, was .57. The *p*-value of the HSIS/FACES-2009 difference for the second significantly predictive factor, proportion of other Spanish-speaking DLL children previously enrolled in the ECE setting, was .40. Because neither of the odds ratio differences were statistically significant, the results appear to be robust across the two independent Head Start samples of HSIS and FACES-2009.

Discussion

This study used the HSIS and FACES-2009 datasets to ascertain which child, family, and institutional characteristics pertaining to low-income, Spanish-speaking DLLs were associated with enrollment in ECE arrangements that used Spanish for instruction versus arrangements that did not use Spanish. It examined this question within each of the two datasets individually, and then further analyses were conducted to determine if the results replicated across both datasets of HSIS and FACES-2009.

Although it was hypothesized based on prior theory and research that each of the characteristics tested in this paper might be important for Spanish-speaking DLL families' ECE enrollment decisions, in actuality, only two predictive factors achieved statistical significance across both HSIS and FACES-2009. The first was whether the DLL child's first language was exclusively Spanish. Children with Spanish as their exclusive first language were significantly more likely to be enrolled in an ECE arrangement that used Spanish for instruction over an arrangement that did not use Spanish. The second important characteristic was the proportion of other DLL children previously enrolled in the center. The higher the proportion of other DLL children previously enrolled in a Spanish language instruction ECE setting, the more likely the parent of the study child enrolled them as well.

The results suggest that there are social influences in child care enrollment, particularly among Spanish-speaking DLL families, and the findings converge with previous research on Spanish-speaking DLL children's experiences in child care. Similar to Vesely (2013) and Greenfader and Miller (2014), DLL families in this study tended to be clustered in the same centers and parents were more likely to send their children to a center if it served higher proportions of DLL children. Reciprocally, centers were generally responsive to the surrounding

population enrolled in their centers, had better language capacity to serve Spanish-speaking DLL families, and thus hired teachers who were able to use the home language of Spanish for classroom instruction. In communities in HSIS that faced limited competition from other child care centers, parents were even more likely to enroll their child in an ECE setting that instructed in Spanish, perhaps because it might have been the only center available in the area and it was catering to the surrounding population.

Similarly, parents in this study tended to enroll their children in centers where providers spoke their children's first language. This finding is consistent with sociocultural theory (Hernandez et al., 2011; Rogoff, 2003) and prior research demonstrating that some DLL parents desired a culturally-matched ECE arrangement so that their child could maintain connections to family members and cultural experiences in their home country (Gordon et al., 2013; Miller et al., 2013; Vesely, 2013; Ward et al., 2011) and the parents could have a provider with whom they could speak with ease (Vesely, 2013). As determined by Ward and colleagues (2011), these parents assumed that children would learn English in school through sheer exposure to the language, but they would only be able to maintain their home language abilities and skills if their providers also spoke the language. In addition, given national Head Start mandates to increase enrollment and quality of services in areas with large numbers of DLL families (U.S. DHHS, 2008), it makes sense that parents would enroll their child in a center where the providers spoke their child's first language.

Some observational qualitative evidence supports this. In the study of four local Head Start classrooms in a large urban, predominantly Latino county in the Southwest U.S., discussions with center directors and observations of parents indicated that although challenging, Head Start goes to great lengths to recruit, hire and retain qualified bilingual teachers and staff.

They also make a special effort to engage parents as well. All communications and reminders to parents are in both English and Spanish, and teachers report on children's progress in both languages. According to the center directors, the bilingualism promoted by Head Start helps foster a close parent-caregiver connection regarding the child (Author, manuscript in preparation). Mancilla-Martinez and Lesaux's (2014) study of Head Start teachers had similar findings, in that Head Start uses a two-pronged strategy for teacher recruiting and retention. They first focus on creating a communication pipeline for teachers from the classroom to the local community and then provide ongoing support and professional development for their staff. This strategy helps attract and retain teachers who share the linguistic background with the children they serve.

On the other hand, it was hypothesized that several additional salient sociocultural factors pertaining to Spanish-speaking DLL families such as maternal recent immigration status and child's proficiency with English would be significant predictors of enrollment in child care centers that instructed in Spanish, as prior research (Miller et al., 2013; Vesely, 2013; Ward et al., 2011) and theory (Hernandez et al., 2011) have found these factors to be important. Such factors pertain directly to the specific context of DLL children's culture and stress the interrelated process of development between the individual child and their broader social environment. Because these characteristics were not significant in this study, it may be that dynamics other than culture determined these enrollment decisions such as structural considerations. For example, parents may simply want themselves and their child to feel comfortable in their child care setting, necessitating a provider that can speak Spanish and higher proportion of DLL children enrolled at the center. Nonetheless, this study's findings are consistent with national Head Start mandates to value and support the home language of children

in surrounding communities (U.S. DHHS, 2008), and future work can attempt to distinguish better between cultural and structural reasons for ECE enrollment decisions.

Limitations and Future Directions

Some study limitations should be noted. First, although the HSIS was a random assignment experiment, due to small sample sizes and power issues, it was necessary to examine the enrollment decisions of Spanish-speaking DLLs by combining across the treatment and control conditions. Therefore, it was not possible to take advantage of the random assignment feature of the data for this study, and the results reported here are not causal. Nonetheless, because the findings replicated across two large, independent samples of Head Start children, families, and programs, these results are likely to be more robust than would be possible from either sample alone. These data are the best currently available to address the questions asked in this study, though future studies with larger experimental sample sizes would help answer similar research questions on predictors of enrollment in a causal way. Alternatively, future prospective design studies could select Spanish-speaking DLL families based on the enrollment characteristics and follow them to get a better sense of their ultimate child care enrollment decisions.

Second, the purpose of this paper was to identify child, family, and institutional factors that were associated with enrollment in ECE arrangements that used Spanish for instruction versus arrangements that did not. Although the dichotomous outcome variable used to ascertain these selection factors was crude and potentially masked tremendous variability in actual Spanish use in the classroom, it was the best available, albeit limited, measure for understanding these classroom language dynamics. Nonetheless, the findings from this study raise important issues of how much instruction in Spanish actually occurs in the classroom, the quality of such instruction,

and whether instructing children in Spanish is indeed beneficial for DLLs' language skills in English and Spanish. Although answering such questions is beyond the scope of the current study, it is important to understand not only why parents enroll their children in care arrangements that instruct in Spanish, but also how much instruction and for what kinds of activities is Spanish used, the quality of such instruction, and if such instruction improves children's language outcomes. Research studies building capacity to answer questions on DLL children go together with programmatic efforts to improve services for these children (U.S. DHHS, 2013b). Therefore, future work can answer these questions, particularly if national data sets collect more detailed information on classroom Spanish use while new qualitative studies such as the paper in preparation by the author attempt to describe these language dynamics in detail.

Given that Spanish-speaking DLL children are the fastest growing demographic in the U.S. as well as an increasing share of Head Start and Early Head Start participants (nearly 40%; U.S. DHHS, 2014), the results of this paper and future work have implications for policy and practice. The findings can help centers respond to Head Start mandates (U.S. DHHS, 2008) to support DLL children's home language and provide services to families in culturally responsive ways by better targeting their resources toward bilingual teacher and staff hiring, classroom language supports, and curriculum decisions that stress the importance of both languages. The results further underscore the importance of engaging DLL parents as there are social influences in child care enrollment decisions especially among these families (Greenfader & Miller, 2014; Vesely, 2013).

Lastly, the distinction between child care choice as traditionally thought of in the consumer literature for the general population and child care enrollment decisions among

Spanish-speaking DLL families is an important one. Though this line of research is still in its nascent stages, it is important to keep in mind that much less is known about the actual child care choice process for DLL families compared with the general population given historic lower levels of enrollment in formal ECE of some Spanish-speaking DLL families such as Mexican-origin Latinos stemming at least partly from issues of access, awareness, and availability (Espinosa, 2013; Espinosa et al., 2013; Greenfader & Miller, 2014; Hernandez et al., 2011; Matthews & Jang, 2007; Winsler et al., 2013). Relatedly, this study determined factors associated with enrollment in a Spanish language instruction ECE arrangement, which is distinct from actual decision-making at the time of enrollment, especially because there was little information in either study about the range of child care options experienced by Spanish-speaking DLL families. Therefore, future research can push the field to understand more about Spanish-speaking DLLs' actual child care choice through interviews with parents and center directors, and an assessment of access to ECE in local communities.

In sum, this study investigated child, family, and institutional characteristics that were associated with low-income DLL children's enrollment in ECE arrangements that used Spanish for instruction. It extended prior research that has examined language as one factor among many to influence child care enrollment decisions and was the first to use the two largest nationally representative samples of Head Start – HSIS and FACES-2009 – to gain an understanding of what is associated with Spanish-speaking DLL families' decisions to enroll their children in arrangements that specifically teach in their home language. In line with the accommodation framework (Meyers & Jordan, 2006) and sociocultural theory generally (Rogoff, 2003) as well as specific to DLLs (Hernandez et al., 2011), findings from this study revealed that these enrollment decisions reflect child care experiences that are governed by complex constraints.

Similar to the general population, their decisions reflect an accommodation to not only family income and the supply of ECE in local communities, but also to unique issues of access, availability, and a linguistically consonant experience. By shedding some light on these enrollment decisions, it is the hope of this study that ECE arrangements will be better able to respond to the needs of and serve this fast-growing and important demographic of children and families.

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Table 1.1

Descriptive Statistics of Spanish-speaking DLLs' Demographic and Enrollment Characteristics, HSIS and FACES-2009

	HSIS (*N* = 1,141)				***FACES-2009*** (*N* = 825)	
	Head Start (*N* = 690)		Control (*N* = 451)			
	Mean / % of Sample	*SD*	Mean / % of Sample	*SD*	Mean / % of Sample	*SD*
Dependent Variable						
Teach Children in Spanish	0.64		0.60		0.64	
Enrollment Characteristics - Baseline						
Child and Family Characteristics						
Mother Recent Immigrant	0.59		0.61		0.56	
Maternal Limited English Proficiency	1.19	0.54	1.24	0.72	2.26	2.35
Child Limited English Proficient	0.67		0.67		0.65	
Child's First Language Spanish	0.80		0.82		0.92	
Important Child Know Spanish					0.92	
Institutional Characteristics						
Proportion of Other DLL Children in ECE Setting	0.67	0.22	0.68	0.22	0.63	0.33
Limited Competition From Alternative ECE Options	0.80		0.81			
Child Demographic Characteristics - Baseline						
Age at Spring assessment in weeks	238.05	31.43	241.30	25.98	217.06	25.54
Age-4 cohort	0.54		0.55		0.48	
Gender - Male	0.48		0.47		0.51	
Disability	0.08		0.09		0.03	
Family Demographic Characteristics - Baseline						
Caregiver age	30.02	6.61	29.94	5.06	30.13	6.12
Maternal Education						
Less than high school	0.62		0.70		0.60	
High school diploma / GED	0.21		0.21		0.21	
Beyond high school	0.16		0.09		0.16	
Married Mother	0.63		0.63		0.43	
Teenage Mother	0.09		0.08		0.39	
Parents lived together	0.78		0.75		0.66	
Maternal Depression	0.13		0.14		0.11	

Note. HSIS weight used = CHSPR2003WTCA. FACES-2009 weight used = P21RA2WT.

Table 1.2

Odds Ratios from Logistic Regressions Predicting Enrollment in a Spanish Language ECE Setting, HSIS and FACES-2009

	Outcomes				
	HSIS		***FACES-2009***		***p-Value of HSIS/FACES-2009***
	Individual Runs	***All Together***	***Individual Runs***	***All Together***	***Difference***
Child and Family Characteristics					
Maternal Limited English Proficiency	1.25~	1.24~	1.16	1.30	0.70
	(1.72)	(1.66)	(0.68)	(1.07)	
Mother is Recent Immigrant	1.06	1.03	1.11	1.33	0.65
	(0.34)	(0.12)	(0.50)	(0.59)	
Child is Limited English Proficient	1.21	1.19	1.19	1.30	0.70
	(0.59)	(0.48)	(0.60)	(0.79)	
Child's First Language is Spanish	10.04***	4.10***	3.03*	3.18*	0.57
	(9.68)	(3.19)	(2.19)	(2.25)	
Important that Child Knows First Language			1.15	1.25	
			(0.48)	(0.93)	
Institutional Characteristics					
Proportion of Other DLL Children in ECE Setting	1.28***	1.32***	3.72*	3.78*	0.40
	(3.95)	(3.75)	(2.22)	(2.26)	
Competition from Alternative ECE Options in the Neighborhood	2.90***	1.46			
	(3.82)	(1.17)			
N	1015	1015	725	725	
R^2		0.32		0.11	

Note. Odds ratios presented in table. T-statistics in parentheses.

~ p < 0.10. * p < 0.05. *** p < 0.001.

Teach in Spanish outcome is teacher report. Variables all dichotomous except for "Maternal Limited English Proficiency" and "Proportion of DLL Children in ECE Setting", which are continuous and standardized. Head Start center-level fixed effects included in all models where possible. Demographic covariates (centered at mean): child cohort, child gender, child disability status, maternal education, maternal marital status, caregiver depression, teenage mother status, caregiver age, and child age at spring assessment. HSIS weight used = S03TRWTCA_PI_TS; FACES-2009 weight used = T12TCHWT.

Appendix Table 1.1

Odds Ratios from Logistic Regressions Predicting Enrollment in a Spanish Language ECE Setting, HSIS and Two Comparison Samples FACES-2009

	Outcomes					
	HSIS		***FACES-2009***			
			15% of Sample		***25% of Sample***	
	Individual Runs	***All Together***	***Individual Runs***	***All Together***	***Individual Runs***	***All Together***
Child and Family Characteristics						
Maternal Limited English Proficiency	1.25~	1.24~	1.16	1.21	1.16	1.30
	(1.72)	(1.66)	(0.45)	(0.86)	(0.68)	(1.07)
Mother is Foreign Born	1.06	1.03	1.13	1.22	1.11	1.33
	(0.34)	(0.12)	(0.46)	(0.73)	(0.50)	(0.59)
Child is Limited English Proficient	1.21	1.19	1.28	1.61	1.19	1.30
	(0.59)	(0.48)	(0.48)	(0.57)	(0.60)	(0.79)
Child's First Language is Spanish	10.04***	4.10***	1.39	1.64	3.03*	3.18*
	(9.68)	(3.19)	(0.29)	(0.63)	(2.19)	(2.25)
Important that Child Knows First Language			1.37	1.02	1.15	1.25
			(1.19)	(0.04)	(0.48)	(0.93)
Institutional Characteristics						
Proportion of Other DLL Children in ECE Setting	1.28***	1.32***	3.11*	3.36*	3.72*	3.78*
	(3.95)	(3.75)	(2.12)	(2.30)	(2.22)	(2.26)
Limited Competition from Alternative ECE Options in the Neighborhood	2.90***	1.46				
	(3.82)	(1.17)				
N	1015	1015	460	460	725	725
R^2		0.32		0.13		0.11

Note. Odds ratios presented in table. T-statistics in parentheses.

~ $p < 0.10$. * $p < 0.05$. *** $p < 0.001$.

Teach in L1 is teacher-report. Variables all dichotomous except for "Mother is Limited English Proficient" and "Proportion of DLL Children in ECE Setting", which are continuous and standardized. Head Start center-level fixed effects included in all models where possible. Demographic covariates (centered at mean): child cohort, child gender, child disability status, maternal education, maternal marital status, caregiver depression, teenage mother status, caregiver age, and child age at spring assessment. HSIS weight used = S03TRWTCA_PI_TS; FACES-2009 weight used = T12TCHWT.

Chapter 2: Spanish Instruction in Head Start and Dual Language Learners' Academic Achievement

Abstract

Data from the Head Start Impact Study (N = 1,141) and the Head Start Family and Child Experiences Survey, 2009 Cohort (N = 825) were used to investigate whether Spanish instruction in Head Start differentially increased Spanish-speaking Dual Language Learners' (DLLs) English academic achievement. Although hypothesized that Spanish instruction would be beneficial for DLLs' English early literacy and math skills, results from residualized growth models showed no such positive associations. Somewhat surprisingly, DLL children instructed in Spanish had higher English receptive vocabulary skills at the end of the Head Start year than those not instructed, with children randomly assigned to Head Start and instructed in Spanish having the highest scores. Policy implications for Head Start-eligible Spanish-speaking DLLs are discussed.

Keywords: DLLs, Head Start, Spanish instruction

Spanish Instruction in Head Start and Dual Language Learners' Academic Achievement

Quality early care and education (ECE) has been shown to help prepare young learners for future academic success (Karoly, Kilburn, & Cannon, 2005; Magnuson, Ruhm, & Waldfogel, 2007), and this may be especially true for low-income children (Barnett, 2011; Ramey & Ramey, 2006; Schweinhart, 2006). Prior research suggests that Spanish-speaking Dual Language Learners (DLLs) – young children who are learning more than one language simultaneously, their home language and English (Espinosa, 2013) – differentially benefit from quality ECE compared with children of other subgroups and monolingual-English children (Buysse, Peisner-Feinberg, Páez, Hammer, & Knowles, 2014; Gormley, 2008; Loeb, Bridges, Bassok, Fuller, & Rumberger, 2007). This same result has also been found with the Head Start program. The Final Report of the Head Start Impact Study (HSIS; U.S. DHHS, 2010a) found that Spanish-speaking DLL children differentially benefitted from random assignment to Head Start compared with monolingual-English children on some English outcomes. Similarly, Bloom and Weiland (2015) found that this was particularly the case for DLL children with low baseline levels of English achievement.

Despite the positive impacts of ECE for Spanish-speaking DLLs, however, the literature has not sufficiently investigated the mechanisms underlying this finding, or what may account for these differential benefits. One idea that has garnered attention in recent years through developmental policy reports (Mancilla-Martinez & Lesaux, 2014; McCabe et al., 2013), research articles (Barnett, Yarosz, Thomas, Jung, & Blanco, 2007; Páez, Tabors, & Lopez, 2007), and Head Start mandates (U.S. DHHS, 2008) is Spanish language instruction in the classroom. Such instruction may be an important pathway through which DLL children can maximize their learning experiences in ECE as it underscores the importance of supporting

children's home language in English-dominant child care programs and promoting the linguistic context in which DLL children are served (Barnett et al., 2007; Espinosa, 2013). Further, developmentally, DLL children need a strong basis in one language before they can acquire another, and therefore, DLL children may display faster rates of growth in English language skills than native English-speaking children (Mancilla-Martinez & Lesaux, 2011). As such, understanding whether the effects of programs like Head Start on DLL children's development differ by use of Spanish instruction in the classroom remains a key issue, and in particular whether such instruction contributes to English language academic skills is critical and largely unknown.

Using data from the two largest, nationally representative datasets on Head Start – the Head Start Impact Study (HSIS; U.S. DHHS, 2002-2006) and the Head Start Family and Child Experiences Survey, 2009 Cohort (FACES-2009; U.S. DHHS, 2009-2013) – the purpose of the current study is to determine whether Spanish language instruction is associated with English school readiness skills for Head Start-eligible Spanish-speaking DLL children. Of particular importance is the examination of the relationship between Spanish instruction used by caregivers in Head Start settings and DLL children's subsequent English language academic achievement, as this may prove essential for their kindergarten readiness.

Theoretical Framework

This study is grounded in bioecological theory, which posits that human development results from the interplay of *Process* x *Person* x *Context* x *Time* (Bronfenbrenner & Morris, 2006). The core of the model is *Process*, which constitutes reciprocal and continuous interactions between an organism and their environment known as proximal processes, which are the engines of development. The effects of these proximal processes on developmental outcomes

systematically vary based on the characteristics of the person and their environmental context. The current study will consider interactions between proximal processes of Spanish instruction and the context of Head Start classrooms for Spanish-speaking DLL children.

As part of these classroom language proximal processes, children continuously and reciprocally converse with adults, which extend over many turns and reference topics beyond just the immediate present. Consequently, children take part in the building of a complex linguistic structure such as a narrative or an explanation, where they ultimately learn to productively use language. From early naming exchanges with adults, children eventually become more adept at responding to listener's cues and creating sentences with new information (Tabors, 2008). These continuous and reciprocal language interactions enable children to participate in increasingly complex ways of communicating. Therefore, early language interactions support and privilege later literacy experiences (Uccelli, Hemphill, Pan, & Snow, 1999), particularly when they occur frequently in an ecological context like a Head Start classroom where DLL children may be encountering formal academic English for the first time.

Spanish-speaking DLLs in the U.S.

As mentioned briefly above, this study uses the term "Dual Language Learner" to describe young children who are learning more than one language simultaneously – their home language and English (Espinosa, 2013). This term encompasses the diversity of this population, which includes children from a wide variety of language backgrounds. Young DLLs may be of limited English proficiency, completely bilingual, or may not speak their home language fluently (August & Hakuta, 1997). Regardless of their home language experiences, DLLs have less English language exposure and practice than monolingual English-speaking children – children from homes where English is the primary language – and do not perform on par with such

children on various emergent English skills (August & Shanahan, 2006).

Moreover, the population of U.S. DLLs is growing rapidly. From 1994-95 to 2009-10, the number of school-aged DLLs increased by nearly 65% (National Clearinghouse for English Language Acquisition, 2011) – from 3.2 million students to over 5.2 million students, representing the fastest growing student segment in U.S. public schools (Calderón, Slavin, & Sánchez, 2011). Among younger children in Head Start and Early Head Start, DLLs now represent close to 40% of all participants (U.S. DHHS, 2014). Furthermore, the majority of DLLs come from Spanish-speaking homes (García, 2012), and although bilingualism per se is not a risk factor, the population of Latino children represents the largest group of children in poverty in the U.S. (López & Velasco, 2011), which further places Spanish-speaking DLLs at risk for delayed English language development (Hoff, 2013; Kieffer, 2010; Mancilla-Martinez & Vagh, 2013).

Spanish Language Instruction for DLL Children's School Readiness Skills

Spanish language instruction in Head Start may be one way to boost DLL children's English school readiness skills. Unfortunately, at kindergarten entry, Spanish-speaking DLL children are already engaged in a game of "catch-up", as they trail their monolingual English-speaking peers in important English language skills such as syntactic knowledge, phonological awareness, emergent literacy, and in particular, vocabulary (Hoff, 2013; Páez et al., 2007). Further, persistent K-12 reading achievement gaps between DLLs and monolingual-English speakers (National Assessment of Educational Progress, 2013) suggest that DLL students are not equipped with the English language skills to succeed academically.

However, a sufficiently high quality match between the classroom language environment and children's language capabilities can help children successfully become bilingual (McCage et

al., 2013). This may be particularly true when accounting for DLL children's skills inclusive of their home language and English (Hoff, 2013; McCabe et al., 2013; Pearson, Fernández, & Oller, 1993). Furthermore, given the timing of sensitive periods for language development (Nelson & Sheridan, 2011), the preschool years may be an ideal time to learn two languages (Bialystok, 2011; Genesee, Paradis, & Crago, 2004; McCabe et al., 2013).

Some empirical work supports this view. Language of classroom interaction and instruction may be critical to Spanish-speaking DLLs' overall development, and in particular, continued rich language opportunities in children's home language may transfer and promote English language acquisition in important areas such as phonological awareness and emergent literacy (August & Shanahan, 2006; Castro, Páez, Dickinson, & Frede, 2011; Dickinson, McCabe, Clark-Chiarelli, & Wolf, 2004; Rinaldi & Páez, 2008). Prior research with preschool DLL children, some of which is experimental, demonstrates that classroom use of both the home language and English may lead to improvement in Spanish oral language skills and at least equivalent English emergent literacy skills compared with Spanish-speaking DLL children in all-English contexts (e.g., Barnett et al., 2007; Burchinal et al., 2016; Durán, Roseth, & Hoffman, 2010; Páez et al., 2007). Research on Spanish language instruction with older elementary-aged children suggests similar results for bilingual education compared with English-only programs by fourth grade (e.g., August & Shanahan, 2006; Goldenberg, 2012; Slavin, Madden, Calderón, Chamberlain, & Hennessy, 2011; Valentino & Reardon, 2015). Other work indicates that DLL children display better social skills and closer teacher-child relationships in classrooms where teachers use children's home language, and teacher ratings of DLL children's peer social skills and assertiveness may be positively associated with increased amounts of Spanish use (Chang et al., 2007).

Oral language skills as a possible exception. Despite this encouraging body of studies, the research on the positive associations between Spanish language classroom instruction and Spanish-speaking DLLs' academic achievement is not definitive, particularly for English oral language skills. Spanish-speaking DLLs tend to lag behind monolingual-English speakers in English oral language skills, and especially among low-income children (Hoff, 2013; McCabe et al., 2013; Páez et al., 2007). Spanish-speaking DLL four- and five-year olds perform one to two standard deviations below monolingual-English norms, on average, on measures of English expressive and receptive vocabulary (Hoff, 2013). While an initial language gap is understandable given the limited amount of home exposure to English (compared with monolinguals), vocabulary gaps between Spanish-speaking and monolingual-English learners are still significant at age 11 years (Mancilla-Martinez & Lesaux, 2011). Furthermore, similar to monolingual English-speakers, Spanish-speaking DLL children tend to exhibit better receptive than expressive vocabulary skills (Gibson, Oller, Jarmulowicz, & Ethington, 2012), though both have been shown to be predictive of future academic skills (Páez et al., 2007).

Although these findings for oral language are troubling given the link between oral language proficiency and future literacy, academic success, and behavior (Spira, Bracken, & Fischel, 2005), because many Spanish-speaking DLLs are low-income (López & Velasco, 2011), it is not clear if these results are due to SES or language factors. Limited work with higher-SES Spanish-speaking DLL children indicates that they can catch up to monolingual-English speakers in elementary grades (Umbel, Pearson, Fernandez, & Oller, 1992). Further, even among low-income DLL children, if their total vocabulary across both languages is measured, they tend to perform on par or score higher than monolingual children (Core, Hoff, Rumiche, & Señor, 2013; Hoff, 2013). It is unclear, however, if total vocabulary predicts future achievement.

Nonetheless, because of this lack of consensus on whether Spanish language instruction is beneficial for English achievement outcomes, a few researchers recommend that best practice for instructing DLL children should include more of a structured immersion framework within a protected Spanish language environment that is reduced after one to two years (e.g., Rossell & Kuder, 2005). Therefore, bilingual programs aim to provide adequate exposure and learning opportunities in English, particularly for oral language skills, in addition to fostering the home language (Goldenberg, Nemeth, Hicks, Zepeda, & Cardona, 2013).

Present Study

Given the implications of ECE programs for improving the school readiness of all children (Karoly et al., 2005; Magnuson et al., 2007), and in particular for Spanish-speaking DLLs (Buysse et al., 2013; Gormley, 2008; Loeb et al., 2007; U.S. DHHS, 2010a), the present study views the early childhood years as a critical period to equip Spanish-speaking DLLs with the academic skills that they will need for future English literacy and school success (Hoff, 2013; Mancilla-Martinez & Vagh, 2013; National Task Force on Early Childhood Education for Hispanics, 2007). Despite the emerging body of research on the differential benefits of ECE for Spanish-speaking DLLs, whether Spanish language instruction contributes to these benefits in various ECE settings such as Head Start is still an empirical question. To address this gap, therefore, the present study tests whether Spanish language instruction in Head Start is associated with critical English academic school readiness skills, including oral language.

Prior studies examining the importance of Spanish language instruction for children's school readiness skills have relied on observational or survey data (e.g., Chang et al., 2007; Páez et al., 2007). Those that have taken advantage of random assignment experiments (e.g., Barnett et al., 2007; Dúran et al., 2010; Slavin et al., 2011) used samples that were either small in size or

not nationally representative. Further, no known studies to date have analyzed whether Head Start program impacts may differ by Spanish instruction in the classroom.

The present study contributes to the field by using the two largest nationally representative datasets on income-eligible Head Start children, families, and programs (HSIS and FACES-2009) to answer: 1) Are there main effects of Spanish language instruction on Spanish-speaking DLL children's English academic school readiness skills?; and 2) Does Head Start differentially benefit Spanish-speaking DLL children instructed in Spanish?

Given Head Start's special focus on educating DLL children and its mandates to support their home language (U.S. DHHS, 2008), as well as DLLs representing an increasing share of Head Start and Early Head Start's participants (nearly 40%, U.S. DHHS, 2014), this study seeks to address important practical and policy questions on the main effects of Spanish instruction for English early academic skills, and whether Head Start is differentially beneficial based on such use. Addressing these questions is key for Head Start programs and policy as they help to elucidate what promotes better academic outcomes for this growing population and whether Spanish language instruction in the classroom plays a role. Based on these results, Head Start and other ECE programs can better target their resources in ways that conform to national Head Start policy by supporting home language use and providing care in more culturally-responsive ways such as bilingual teacher and staff hiring, classroom language supports, and curriculum decisions that stress the importance of both languages (U.S. DHHS, 2008).

Method

Participants

This study is based on data from the two largest, nationally representative datasets on Head Start children, families, and programs. The first was the random-assignment Head Start

Impact Study (HSIS; U.S. DHHS, 2002-2006), which was designed to estimate the causal impact of Head Start on children's school readiness skills and parenting practices, as well as determine the circumstances under which Head Start achieved its greatest impact and for which children (U.S. DHHS, Final Report, 2010). The second was the Head Start Child and Family Experiences Survey, 2009 Cohort (FACES-2009; U.S. DHHS, 2009-2013), a longitudinal study of program performance, and specifically the population served; staff qualifications, credentials, and opinions; Head Start classroom practices and quality measures; and child and family outcomes (U.S. DHHS, 2011).

HSIS. The HSIS was a nationally representative sample of 84 Head Start grantee and delegate agencies and nearly 4,500 newly entering, eligible three and four-year-old children. Children were randomly assigned to either: (1) a Head Start group that had access to Head Start program services; or (2) a control group that was not eligible to enroll in the Head Start center to which they applied for the lottery, but could enroll in other early childhood programs or services selected by their parents, including other Head Start centers not in the study (U.S. DHHS, Final Report, 2010).

The study employed a multi-stage sampling process to select a representative group of Head Start programs and children. It began with a list of 1,715 grantee and delegate Head Start agencies that were operating in Fiscal Year (FY) 1998-99. This pool was then organized into 161 geographic clusters across 25 strata in order to ensure variation across region of the country, urban and rural location, race and ethnicity, and state pre-kindergarten and child care policies. One cluster was then randomly selected from each of the 25 strata yielding 261 grantee and delegate agencies. Agencies were eliminated if they had recently closed, merged, or were serving all eligible children in their communities, and smaller agencies were grouped together.

Approximately three grantee and delegate agencies were then randomly selected from each of the 25 strata, yielding a final pool of 84 grantee and delegate agencies.

These 84 Head Start agencies generated lists of 1,427 individual centers that were expected to be in operation for the 2002-03 school year. After individual programs were eliminated because they had recently closed, merged, or were serving all eligible children in their communities, and groups of centers were stratified along the same dimensions as the geographical agency clusters, 383 individual centers remained (U.S. DHHS, Final Report, 2010).

Once the centers were selected, a lottery process was used to determine which children were and were not assigned a place in Head Start. The goal was to randomly select 27 children from each center – 16 to be assigned to Head Start and 11 to the control condition. In total 4,442 children were randomly selected – 2,646 for Head Start and 1,796 for the control condition. Data collection took place from fall 2002, at the time the treatment group entered Head Start, until spring 2006, at the end of first grade (U.S. DHHS, Final Report, 2010).

Approximately 25% of the total HSIS study sample (N = 1,141) was classified as Spanish-speaking DLLs (see Measures, below) – 690 in Head Start and 451 in the control condition. Half of the children in this subgroup sample were male, and about 10% were classified as having a disability at baseline. Nearly 70% of the mothers of Spanish-speaking DLL children had less than a high school education, and about 60% had immigrated to the U.S. in the past ten years. The majority of Spanish-speaking DLL mothers were married (63%), and in 75% of Spanish-speaking DLL households, the biological parents lived together with the study child.

Complete descriptive statistics for Spanish-speaking DLL children and families are listed in Table 2.1, which also includes tests for treatment and control group differences. As shown in the table, balance was achieved on all covariates between the Head Start and control groups.

{Insert Table 2.1}

FACES-2009. Head Start FACES was launched in 1997 as a periodic, longitudinal study of program performance. Successive nationally representative samples of Head Start children, their families, classrooms, and programs were collected in 2000, 2003, 2006, and 2009 to provide descriptive information on the population served; staff qualifications, credentials, and opinions; Head Start classroom practices and quality measures; and child and family outcomes. This study used FACES-2009 due to its enhanced focus on children who speak a primary language other than English (U.S. DHHS, 2011).

The sample design for FACES-2009 was similar to that of the HSIS and included a multi-stage sampling process to select a representative group of Head Start 1) programs; 2) centers; 3) classrooms; and 4) newly-enrolled children. Sampling at the first three stages was done with probability proportional to size.

The sampling frame of eligible Head Start programs for FACES-2009 was constructed from the Head Start Program Information Report (PIR), and were stratified along 12 strata in order to ensure sufficient variation in census region, urbanicity, percentage of racial and ethnic minority enrollment, whether the program had at least 25% DLLs, program status as a public school district grantee, the percentage of children in the program whose primary home language was English, and the percentage of children with disabilities. From this frame, a sample of 60 programs was selected. In addition, approximately two centers per program and three classrooms per center were selected for participation. Within each classroom, a sample of newly-enrolled children was selected. In total, the FACES-2009 sample included 60 programs, 129 centers, 486 classrooms, and 3,349 children. Data collection took place from fall 2009, at the time the children entered Head Start, until spring 2012, at the end of kindergarten (U.S. DHHS, 2013a).

Approximately 25% of the total FACES-2009 study sample (N = 825) was classified as Spanish-speaking DLLs (see Measures, below). Similar to the HSIS, half of the children in this subgroup sample in FACES-2009 were male, and about 5% were classified as having a disability at baseline. Sixty percent of the mothers of Spanish-speaking DLL children had less than a high school education, and almost 60% had immigrated to the U.S. in the past ten years. Close to half of Spanish-speaking DLL mothers were married (43%), and in two-thirds of Spanish-speaking DLL households, the biological parents lived together with the study child. Table 2.1 provides complete descriptive characteristics of these participants as well.

Measures

Spanish-speaking Dual Language Learner (DLL) status. *HSIS.* Prior to program entry in the fall of 2002, treatment and control group children were administered a battery of assessments as a baseline measure of academic achievement. The language of this child assessment was chosen by HSIS as follows. At the start of the study in fall 2002, information was collected on each child's language ability. Assessors asked the child's primary caregiver three questions: (1) What language does the child speak most often at home?; (2) What language does the child speak most often at the child care setting?; and (3) What language does it appear the child prefers to speak? Children were tested in the language in which at least two of the three responses were the same (U.S. DHHS, Technical Report, 2010). Children were classified as a Spanish-speaking DLL if they required assessment in Spanish at baseline. About 25% of the overall study sample required baseline assessment in Spanish (N = 1,141).

FACES-2009. In FACES-2009, all children at baseline were given the language screener the Preschool Language Assessment Survey 2000 (preLAS 2000; Duncan and DeAvila, 1998). Children whose parents reported their primary home language was Spanish and who made five

consecutive errors on the preLAS were then routed to the Spanish-language baseline assessment. Using the language screener criteria, about 15% of the total FACES-2009 sample ($N = 512$) required assessment in Spanish at baseline (U.S. DHHS, 2013a).

However, many researchers and policymakers who specialize in Dual Language Learning criticize these language screeners as problematic and not indicative of children's true language abilities (U.S. DHHS, 2013b). Rather, triangulation of methods that use data from the primary caregiver, such as the one used in the HSIS, are better predictors of children's language abilities. Therefore, this study applied the same three questions from HSIS to FACES-2009 to classify a child as a DLL. Because both studies were conducted by the U.S. Department of Health and Human Services, Administration for Children and Families, the same questions were available in both datasets. If the answer to at least two out of the three questions was Spanish, the child was considered a Spanish-speaking DLL. Categorized this way, about 25% of the FACES-2009 sample ($N = 825$) was classified as Spanish-speaking DLLs, indicating that using only the language screener vastly underestimated the number of these children. Fifty-three percent of DLL children were assessed in Spanish at baseline ($N = 436$) and 47% were assessed in English ($N = 389$) according to this method. Thus, there was over 85% agreement between the two classification methods as to whom required baseline testing in Spanish. This study chose to use the latter classification method, which is endorsed more by the child development field and more closely aligned with the HSIS (U.S. DHHS, 2013b).

Spanish language classroom instruction. In both HSIS and FACES-2009, each study child's primary teacher or caregiver was asked if they taught the child in their care in Spanish. This variable was coded as "0" if the teacher/caregiver interviewed indicated they did not teach the children in Spanish and "1" if they did. For HSIS children who attended Head Start and

FACES-2009 children, this question was asked of the Lead Teacher in Head Start. For HSIS children in the control group, this question was asked of the child's primary teacher/caregiver – either the lead teacher in another program, the family day care provider, or the parent. Table 2.1 also provides information on the prevalence of Spanish instruction in HSIS and FACES-2009 and indicates there was sufficient variation among Spanish-speaking DLL children.

Academic achievement outcomes. *HSIS.* At baseline in the fall of 2002, Spanish-speaking DLL children were administered a complete Spanish language assessment battery as a measure of academic achievement that included the *Test de Vocabulario en Imágenes Peabody* (TVIP; Dunn, Lugo, Padilla, & Dunn, 1986), and two subtests of the *Bateriá Woodcock-Muñoz* (WM) *Pruebas de Aprovechamiento-Revisada* (Woodcock & Muñoz-Sandoval, 1996), *Identificación de letras y palabras* and *problemas aplicados.* The TVIP measures a child's Spanish receptive vocabulary (α = .93), the WM *letras y palabras* measures a child's reading identification skills of Spanish letters and words (α = .97), and the WM *problemas aplicados* measures a child's ability to analyze and solve math problems (α = .90; U.S. DHHS, Technical Report, 2010). These academic domains are critically important for later academic success (Duncan et al., 2007; Whitehurst & Lonigan, 2003; Yesil-Dagli, 2011), as together they form the building blocks of academic competence.

In spring 2003 and in all subsequent data collection periods, children were given only the complete English assessment battery (U.S. DHHS, Technical Report, 2010). Thus, the English language versions of the Peabody Picture Vocabulary Test, Third Edition (PPVT; Dunn & Dunn, 1997) and the Woodcock-Johnson (WJ) III Letter-Word Identification and Applied Problems tests (Woodcock, McGrew, & Mather, 2001) were used as outcomes. A complete list of descriptive statistics for these baselines scores and outcomes one academic year later is reported

in Table 2.1.

Although there may be benefits to instructing children in Spanish on Spanish assessment measures (e.g., Barnett et al., 2007; Burchinal et al., 2016; Durán, Roseth, & Hoffman, 2010; Páez et al., 2007), because DLL children were only given the English assessments as outcomes, such a focus on Spanish results was not possible and this study was limited to English-only outcomes. Further, it should be noted that the TVIP was normed on a monolingual Spanish-speaking population residing outside the mainland U.S. primarily in Puerto Rico and Mexico (Dunn et al., 1986). Therefore, although the TVIP is the most widely-used measure currently available to assess receptive vocabulary in Spanish, researchers highlight that such a test is not ideal for assessing true vocabulary knowledge for DLL children as they are exposed to two languages (unlike monolingual Spanish-speakers) and subsequently develop different vocabulary content for each, likely underestimating their concept knowledge (Castro, Espinosa, & Páez, 2011; Kester & Peña, 2002).

FACES-2009. In FACES-2009, Spanish-speaking DLLs who required baseline assessment in Spanish based on the results of the language screener were given a complete assessment battery in the fall of 2009 that included the same three assessments as HSIS – the TVIP, and the WM *Letras y palabras* and *problemas applicados* tests. Those DLLs who passed the language screener were given the complete English language baseline battery that included the PPVT, Fourth Edition (Dunn & Dunn, 2007) and the WJ III Letter Word and Applied Problems tests. Similar to other experimental studies of DLL children (e.g, Barnett et al., 2007), whichever language version a child was assessed in fall 2009 was considered their baseline score. In spring 2010, similar to the HSIS, DLL children were given the complete English version of the assessment battery (U.S. DHHS, 2013a) and those scores were used as outcomes.

Complete descriptive statistics for these scores are presented as well in Table 2.1.

Covariates. In order to increase the precision of the estimates of the associations between language of instruction and child achievement, several child and family covariates were included in all analyses. Child covariates included: gender; whether the child was classified as having a disability at baseline; and age in weeks at the spring assessment. Family covariates included: caregiver age in years; an indicator of caregiver depression; highest level of maternal education; and three family structure variables including whether both biological parents lived with the child, whether the child's mother was married, and whether the mother was a teenage mother at the child's birth. For purposes of analyses, all the covariates were centered at their mean. Descriptive statistics for all covariates are displayed in Table 2.1.

Non-response. As with any longitudinal dataset, there was non-response in both HSIS and FACES-2009. To control for this potential bias, this study weighted all analyses, including descriptives and estimation models, using the appropriate weights, which were based on the probability of sample selection at every stage multiplied by adjustment for the probability of non-response. The weights included in the analyses are listed at the bottom of every table and helped control potential non-response bias by compensating for different data collection response rates across demographic groups of children. Weights are important in complicated multi-stage sampling studies such as the HSIS and FACES-2009 because they allow researchers to make inferences to the relevant general population, and they account for differential selection probabilities and differential non-response (U.S. DHHS, Technical Report, 2010).

Analysis Plan

The analysis for this study's research questions was a three-step process in which the analytic sample was restricted to Spanish-speaking DLL children in all cases. First, using

FACES-2009, residualized growth models were used to estimate associations between Spanish language instruction and Spanish-speaking DLLs' English academic achievement. Specifically, estimated regressions tested for main effects of Spanish language classroom instruction in Head Start on English receptive vocabulary, early literacy, and early math skills. A parallel non-experimental analysis was then performed using the HSIS to estimate the same associations for children who attended Head Start.

Thus, the final regression model for both FACES-2009 and the HSIS was:

$$Y_t = \beta_0 + \beta_1 Y_{t-1} + \beta_2 (SPANISH\ \ INSTRUCTION)_t + \ \gamma COVARIATES_{t-1} + e_t ,$$

where Y_t was the outcome variable of interest after one year; Y_{t-1} was the lagged outcome variable at baseline; $SPANISH\ INSTRUCTION_t$ was a dummy variable indicating whether a child attended a Head Start center where they were taught in Spanish; $COVARIATES_{t-1}$ was a vector of additional demographic covariates; and e_t was an error term. Although this analysis was non-experimental, the use of both datasets enabled us to explore the robustness of the associations between Spanish language instruction and Spanish-speaking DLLs' English language academic school readiness skills.

To answer the second research question, this study used the entire Spanish-speaking DLL sample to estimate whether Head Start program impacts were differentially beneficial for Spanish-speaking DLLs instructed in Spanish. This analysis compared Spanish-speaking DLLs who attended Spanish instruction Head Start classrooms with DLL children who attended non-Spanish instruction Head Start classrooms as well as DLLs in the control condition who did not attend Head Start. It thus estimated regressions including Spanish language instruction, random assignment to Head Start, and an interaction term between these variables on English receptive vocabulary, early literacy, and early math skills. Thus, the final interacted regression model was:

$$Y_t = \beta_0 + \beta_1 Y_{t-1} + \beta_2 (SPANISH\ \ INSTRUCTION)_t + \beta_3 TX +$$
$$\beta_4 (SPANISH\ \ INSTRUCTION_t\ x\ TX) + \ \gamma COVARIATES_{t-1} + e_t ,$$

where Y_t was the outcome variable of interest after one year; Y_{t-1} was the lagged outcome variable at baseline; $SPANISH\ INSTRUCTION_t$ was a dummy variable indicating whether a child attended an ECE center where they were taught in Spanish; TX was the dummy variable for random assignment to Head Start; $SPANISH\ INSTRUCTION_t\ x\ TX$ was the interaction of Spanish instruction and assignment to Head Start; $COVARIATES_{t-1}$ was the vector of additional demographic covariates; and e_t was an error term.

Given the strong potential for Head Start center-level variation, all of the models included Head Start center-level fixed effects with the standard errors properly adjusted for weighting and clustering.

Hypothesized results. Prior research suggests that the language of classroom interaction and instruction may be important for Spanish-speaking DLL children's school readiness skills (Barnett et al., 2007; Burchinal et al., 2016; Chang et al., 2007; Durán et al., 2010; Páez et al., 2007). Moreover, Head Start mandates support promoting the linguistic context in which DLL children are served (U.S. DHHS, 2008). It was therefore hypothesized that Spanish language instruction would be positively associated with DLL children's English academic skills of early literacy and early math in HSIS and FACES-2009. Because of the ambiguity in the research for oral language, it was unclear what the expected direction of the results should be for receptive vocabulary. Using the HSIS data, it was further hypothesized that DLL children who attended Head Start would also benefit differentially on these academic domains from Spanish language classroom instruction compared with DLLs in Head Start where Spanish instruction was not used as well as DLLs in the control condition. It was hypothesized that Spanish instruction would increase the effectiveness of Head Start on English outcomes for this growing population.

Results

Research Question 1

Results for the first research question on whether there was a main effect of Spanish language instruction on Spanish-speaking DLL children's English academic school readiness skills are displayed in Table 2.2. In HSIS, results indicate that Spanish-speaking DLL children instructed in Spanish in Head Start scored about 1/6 *SD* higher on English receptive vocabulary (β= 0.16, $p < .001$) compared with DLL children not instructed in Spanish. Interestingly, Spanish instruction in Head Start was not associated with the other English assessment outcomes of early literacy or early math – in fact, estimated associations were negative although statistically insignificant. Similarly, in FACES-2009, Spanish-speaking DLL children instructed in Spanish in Head Start scored 1/5 *SD* higher on English receptive vocabulary (β= 0.20, $p < .05$) compared with DLL children not instructed in Spanish, and there were also null findings for the English outcomes of early literacy and early math.

{Insert Table 2.2}

Because this study analyzed two independent samples of Head Start children collected seven years apart with varying sample sizes, it supported a test of whether the coefficient estimates from HSIS and FACES-2009 were significantly different from each other using a two-sample test of independent means to see if the results from each dataset individually replicated across both. The *p*-value of the HSIS/FACES-2009 difference for English receptive vocabulary skills was .71. Because this value was far from statistically significant, results for the first research question appear to be robust across the two independent Head Start samples of HSIS and FACES-2009.

Research Question 2

Results for the second research question on whether Head Start differentially benefits Spanish-speaking DLL children instructed in Spanish are displayed in Table 2.3. When interaction variables are included in the models, the main effects of Spanish language instruction are those of control group children only. Consequently, for each outcome it is necessary to discuss the results for control group children first and then the Head Start children.

{Insert Table 2.3}

For English receptive vocabulary, there was a positive but statistically insignificant main effect of Spanish instruction for Spanish-speaking DLL control group children. Further, Spanish-speaking DLL children who attended Head Start and were not taught in Spanish scored ½ *SD* higher on English receptive vocabulary skills compared with control group children (β= 0.50, $p <$ .01). Additionally, there was a significant interaction between Spanish language and instruction and random assignment to Head Start on English receptive vocabulary skills as well (β= 0.17, $p <$ .001). Spanish-speaking DLL children who attended Head Start and were instructed in Spanish scored higher on English receptive vocabulary skills than both Spanish-speaking DLL children who attended Head Start but were *not* instructed in Spanish and Spanish-speaking DLL children in the control condition who did not attend Head Start. As with the first research question, Spanish instruction in Head Start was not associated with the other English assessment outcomes of early literacy or early math.

To better understand this interaction on English receptive vocabulary, Figure 2.1 shows predicted scores computed from the coefficient estimates in Table 2.3. As indicated by the three different groups, Spanish-speaking DLL children who attended Head Start and were instructed in Spanish had the highest English receptive vocabulary scores of all the groups. Their scores were

significantly higher than those of DLL children who attended Head Start but were not instructed in Spanish as well as those of DLL children in the control condition who did not attend Head Start.

{Insert Figure 2.1}

Robustness Checks

Because the findings from this study offer a somewhat different results than prior research on the benefits of Spanish language instruction for Spanish-speaking DLL children's English oral language skills, robustness checking was necessary. It was possible that the teachers in HSIS and FACES-2009 who reported using Spanish for instruction in Head Start classrooms were more educated in general and had greater awareness about best teaching practices to promote school readiness skills among Spanish-speaking DLL children than those who did not report such use. Therefore, as a key robustness check, this study tested several characteristics relating to teacher qualifications that might be confounding the results of this study to examine if they differed by whether the teacher reported instructing children in Spanish in both Head Start datasets. The qualifications tested included: total years teaching, total years teaching in Head Start, highest level of teacher education, whether the teacher was certified or licensed to teach, whether the teacher had a degree in early childhood or child development or any coursework in these respective fields, and whether the teacher had a Child Development Associate (CDA) credential.

This robustness check was done in two ways. First, we compared the balance of these characteristics by treatment status and by dataset. The results are displayed below in the appendix in order to demonstrate the distribution of these characteristics in the data, and indicate that in both HSIS and FACES-2009, there were no significant differences either within each

dataset or across datasets on any of these qualifications as to whether the teacher reported instructing DLL children in Spanish. As a further test, we then entered these characteristics into the final model and interacted them with treatment to see if the language and treatment interaction still held, which it did. Therefore, these robustness checks as well as the replication across both Head Start datasets provided confidence that these observable characteristics of teachers were not biasing the findings of this study, though it cannot preclude other unmeasured or unobserved skills.

Discussion

This study used the HSIS and FACES-2009 datasets to determine the association between Spanish language instruction and Spanish-speaking DLLs' English academic achievement skills. It examined this question within each of the two datasets individually, and then additional analyses were conducted to determine if the results replicated across both datasets of HSIS and FACES-2009. It further sought to understand whether Head Start was differentially beneficial based on such Spanish language instruction. Given the positive impacts of ECE for Spanish-speaking DLLs (Buysse et al., 2014; Gormley, 2008; Loeb et al., 2007; U.S. DHHS, 2010a), instruction in Spanish may be an important pathway through which DLL children can maximize their learning experiences in child care.

Although it was hypothesized that Spanish language instruction in Head Start would be beneficial for DLLs' English early literacy and early math skills, in fact there was no such positive association in either dataset; there appeared to be no added benefit to instructing DLL children in Spanish on these skills though it also did not compromise their performance. Somewhat surprisingly, however, such Spanish language instruction in Head Start was positively associated with English receptive vocabulary skills. That is, Spanish-speaking DLL children

instructed in Spanish had significantly higher English PPVT scores than those DLL children not instructed in Spanish in both HSIS and FACES-2009. Further, in the regressions that took advantage of the experimental variation in random assignment to Head Start, Spanish-speaking DLL children instructed in Spanish in Head Start also had significantly higher English receptive vocabulary scores than either DLL children in Head Start who were not instructed in Spanish or DLL children in the control condition who did not attend Head Start.

The results of this study are rather unexpected in light of previous research that Spanish-speaking DLLs tend to lag behind monolingual-English speakers in English oral language skills (Hoff, 2013; McCabe et al., 2013; Páez et al., 2007), particularly in a low-income sample of Head Start-eligible children, although there is other recent empirical work that converges with the findings of this study. Burchinal and colleagues (2016) for example also found some evidence of cross-linguistic transfer for low-income Spanish-speaking DLL children's English receptive vocabulary skills. This study therefore suggests that there may be something fundamentally different about the way Spanish instruction impacts DLLs' receptive vocabulary skills in Head Start compared with other domains, including early literacy. Perhaps when teachers use Spanish for instruction and particularly for translation purposes, it helps children better understand the meanings of English words, thus expanding their English vocabulary. In addition, hearing more language generally and in both languages may promote better oral language skills overall through conceptual understanding independent of the language in which it occurs (Pearson, 1998). This is consistent with the findings of Core and colleagues (2013) and Hoff (2013) who found that when total language was considered, DLL children performed on par or higher than monolingual-English speakers on measures of oral language, as well as theory in that early language interactions support and privilege later literacy experiences (Uccelli et al.,

1999).

Conversely, with other early skills such as literacy, perhaps instructing children in Spanish was not necessary to promote these skills due to the high degree of cross-linguistic transfer in areas such as phonological awareness and letter-word knowledge (August & Shanahan, 2006; Castro et al., 2011; Dickinson et al., 2004; Rinaldi & Páez, 2008). That is, because of the likelihood of cross-linguistic transfer in these key literacy areas, and given that many DLL children likely have a high degree of exposure to English before coming to Head Start from sources like television and media even if they use Spanish exclusively in the home, there was no added benefit for the teacher instructing the children in Spanish on these English outcome domains. In fact, Spanish-speaking DLL children performed on par with monolingual English-speaking children on measures of emergent literacy (Páez et al., 2007; Rinaldi & Páez, 2008).

Some observational qualitative evidence supports this. In a study of four local Head Start classrooms in a large urban, predominantly Latino county in the Southwest U.S., observations indicated that both when formally introducing children to new vocabulary as well as using key established vocabulary in the classroom, teachers often said the words in one language and then deliberately translated into the other. For example, the teacher would ask, 'who has to go to the bathroom? *Baño* anyone?' or when reading *The Very Hungry Caterpillar*, 'who knows what sausage is? Sausage is *chorizo*.' Thus, such explicit translation provided Spanish-speaking DLL children with more opportunities to make connections to the learning material by helping them to overcome their limits with the English vocabulary. These explanations helped facilitate more in-depth critical thinking about the content that these vocabulary limits might have impeded as well as helped increase DLL children's overall conceptual understanding of the material independent

of the language in which in occurred. (Author, manuscript in preparation).

On the other hand, when teachers focused on letter-word names and sounds as well as early math, these activities mostly took place only in English (Author, manuscript in preparation). Future work should continue to study how classroom use of Spanish differs across language and literacy domains, as this appears to be an important source of variation for Spanish-speaking DLL children's English school readiness skills. Future research should also include an analysis of the effects of Spanish language instruction on Spanish outcomes, which was not possible in this study, given that there may be benefits to instructing children in Spanish on Spanish assessment measures (e.g., Barnett et al., 2007; Burchinal et al., 2016; Durán, Roseth, & Hoffman, 2010; Páez et al., 2007).

Limitations and Future Directions

Some study limitations should be noted. First, although the second study research question was able to take advantage of the experimental nature of the HSIS, this was not possible for the first research question and the results reported for this question are not causal. Nonetheless, because the findings replicated across two large, independent samples of Head Start children, these results are likely to be more robust than would be possible from either sample alone. In addition, the supplementary robustness checks helped ensure that the findings were not attributable to other observable teacher characteristics. Thus, these data are the best currently available to address the research questions asked in this study.

Second, the purpose of this paper was to determine whether there were main effects of Spanish language instruction on DLL children's English academic school readiness, and whether Head Start was differentially beneficial for children based on such use. The findings from this study therefore raise an important issue of how much instruction in Spanish actually occurs in

the classroom and when it occurs. This is a tremendous gap in the literature, and some qualitative work in one geographical area is trying to address this. It is important to understand not only whether Spanish language classroom instruction is beneficial for English outcomes, but also how much Spanish instruction takes place and for what kinds of activities (Author, manuscript in preparation).

Given that Spanish-speaking DLL children are the fastest growing demographic in the U.S. as well as an increasing share of Head Start and Early Head Start participants (nearly 40%; U.S. DHHS, 2014), the results of this paper and future work have implications for policy and practice. The findings can help centers respond to Head Start mandates (U.S. DHHS, 2008) to support DLL children's home language and provide services to families in culturally responsive ways such as bilingual teacher and staff hiring, classroom language supports, and curriculum decisions that stress the importance of both languages.

In sum, this study investigated whether Spanish language classroom instruction was beneficial for Spanish-speaking DLL children's English school readiness. It extended prior research that has examined this relationship for various language and literacy outcomes and is the first to use the two largest nationally representative samples of Head Start children – HSIS and FACES-2009 – to gain an understanding of how using Spanish language instruction relates to English academic achievement. Consistent with bioecological theory (Bronfenbrenner & Morris, 2006), the findings from this study reveal that there are different associations depending on the outcome domain of interest. As a somewhat novel finding, it appears that Head Start with Spanish instruction does a particularly good job at promoting DLL children's English oral language skills, as it explicitly uses both the home language and English to target new and existing key vocabulary. Given the link between oral language proficiency and future literacy,

academic success, and behavior (Spira, Bracken, & Fischel, 2005), Head Start appears to be responding well to the academic needs of this fast-growing and important demographic of children and families.

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Table 2.1

Descriptive Statistics of Spanish-speaking DLLs' Demographic Characteristics and Outcome Measures, HSIS and FACES-2009

	HSIS (*N* = 1,141)					***FACES-2009*** (*N* = 825)	
	Head Start (*N* = 690)		Control (*N* = 451)				
	Mean / % of Sample	*SD*	Mean / % of Sample		*SD*	Mean / % of Sample	*SD*
Key Independent Variable							
Teach Children in Spanish	0.64		0.60			0.64	
Outcomes							
Baseline							
TVIP/PPVT	222.12	37.16	225.93		35.21	271.81	15.46
WM Letras y palabras/WJ Letter-Word	291.71	22.93	292.18		24.21	292.36	22.21
WM Problemas aplicados/WJ Applied Problems	362.15	24.25	362.72		22.30	362.66	26.72
End of Head Start							
PPVT	249.83	29.51	239.09	***	35.52	280.68	14.29
WJ Letter-Word	306.99	26.45	302.65	*	27.85	319.11	25.37
WJ Applied Problems	375.69	30.54	367.15	***	35.05	383.85	23.06
Child Demographic Characteristics - Baseline							
Age at Spring assessment in weeks	238.05	31.43	241.30		25.98	217.06	25.54
Age-4 cohort	0.54		0.55			0.48	
Gender - Male	0.48		0.47			0.51	
Disability	0.08		0.09			0.03	
Family Demographic Characteristics - Baseline							
Caregiver age	30.02	6.61	29.94		5.06	30.13	6.12
Maternal Education							
Less than high school	0.62		0.70			0.60	
High school diploma / GED	0.21		0.21			0.21	
Beyond high school	0.16		0.09			0.16	
Married Mother	0.63		0.63			0.43	
Teenage Mother	0.09		0.08			0.39	
Parents lived together	0.78		0.75			0.66	
Maternal Depression	0.13		0.14			0.11	

Note. *p* level of treatment/control difference: * $p < .05$. *** $p < .001$.
TVIP = Test de Imagenes Peabody. PPVT = Peabody Picture Vocabulary Test. WJ = Woodcock-Johnson.WM = Woodcock-Muñoz. DLL children in HSIS and DLL children in FACES-2009 who did not pass the language screener were assessed in Spanish at baseline. Children in FACES-2009 who passed the language screener were assessed in English at baseline. All DLL children in HSIS and FACES-2009 assessed in English at the end of the Head Start year.
HSIS weight used = CHSPR2003WTCA. FACES-2009 weight used = P21RA2WT.

Table 2.2

Regressions Relating Spanish Classroom Instruction with Academic Outcomes, HSIS and FACES-2009

	Outcomes						
	HSIS			***FACES-2009***			***p-Value of HSIS/FACES-2009 Difference***
	Receptive Vocabulary: PPVT	***Early Literacy: WJ Letter-Word***	***Early Math: WJ Applied Problems***	***Receptive Vocabulary: PPVT***	***Early Literacy: WJ Letter-Word***	***Early Math: WJ Applied Problems***	
Teach Children in Spanish	0.16***	-0.06	-0.04	0.20*	-0.20	-0.05	0.71
	(0.06)	(0.05)	(0.03)	(0.09)	(0.11)	(0.04)	
N	590	590	590	472	472	472	
R^2	0.58	0.52	0.51	0.31	0.43	0.48	

Note. Outcomes are standardized. Weight-adjusted standard errors in parentheses.

* $p < 0.05$. *** $p < 0.001$.

PPVT= Peabody Picture Vocabulary Test. WJ = Woodcock-Johnson. Teach in Spanish is teacher report. Head Start center-level fixed effects included in all models. Demographic covariates (centered at mean): baseline achievement, child cohort, child gender, child disability status, maternal education, maternal marital status, caregiver depression, teenage mother status, caregiver age, and child age at spring assessment. HSIS weight used = CHSPR2003WTCA; FACES-2009 weight used = P21RA2WT.

Table 2.3

Regressions Relating Spanish Classroom Instruction, Assignment to Head Start, and their Interaction with Academic Outcomes, HSIS

	Outcomes		
	HSIS		
	Receptive Vocabulary: PPVT	***Early Literacy: WJ Letter-Word***	***Early Math: WJ Applied Problems***
Teach Children in Spanish (Dummy)	0.11 (0.07)	0.03 (0.08)	-0.05 (0.06)
Treatment (Dummy Assignment to H.S.)	0.50** (0.15)	0.26 (0.16)	0.32*** (0.10)
Teach Children in Spanish x Treatment	0.17*** (0.04)	-0.04 (0.03)	0.02 (0.02)
N	935	935	935
R^2	0.58	0.51	0.50

Note. Outcomes are standardized. Standard errors in parentheses calculated using jackknife replicate weights.

** $p < 0.01$. *** $p < 0.001$.

PPVT= Peabody Picture Vocabulary Test. WJ = Woodcock-Johnson. Teach in Spanish is teacher report. Head Start center-level fixed effects included in all models. Demographic covariates (centered at mean): baseline achievement, child cohort, child gender, child disability status, maternal education, maternal marital status, caregiver depression, teenage mother status, caregiver age, child age at spring 2003 assessment, number of weeks elapsed between 09/01/02 and spring 2003 child assessment. HSIS weight used = CHSPR2003WTCA.

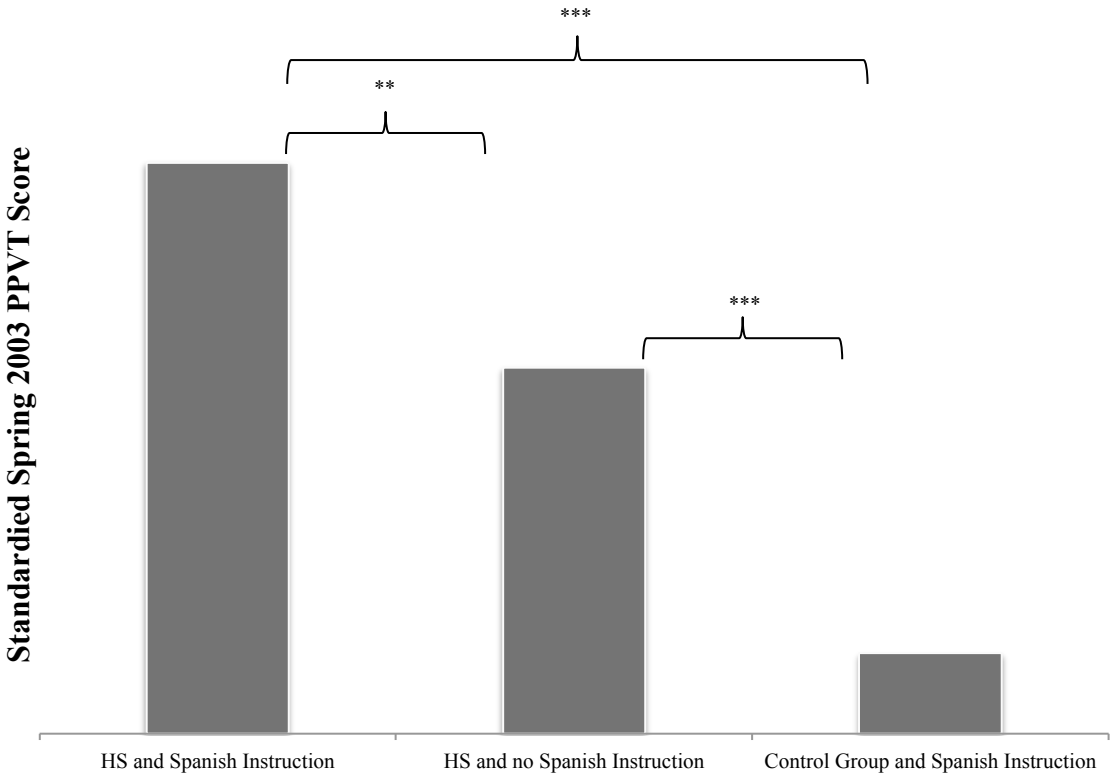

Figure 2.1. Predicted standardized spring 2003 PPVT scores by Spanish language instruction and random assignment to Head Start. (** $p < 0.01$. *** $p < 0.001$.)

Appendix Table 2.1

Regressions Relating Spanish Classroom Instruction with Academic Outcomes, HSIS and Two Comparison Samples FACES-2009

	Outcomes								
	HSIS			***FACES-2009***					
				15% of Sample			***25% of Sample***		
	Receptive Vocabulary: PPVT	***Early Literacy: WJ Letter-Word***	***Early Math: WJ Applied Problems***	***Receptive Vocabulary: PPVT***	***Early Literacy: WJ Letter-Word***	***Early Math: WJ Applied Problems***	***Receptive Vocabulary: PPVT***	***Early Literacy: WJ Letter-Word***	***Early Math: WJ Applied Problems***
Teach Children in L1	0.16***	-0.06	-0.04	0.21~	-0.16	-0.11	0.20*	-0.20	-0.05
	(0.06)	(0.05)	(0.03)	(0.13)	(0.12)	(0.07)	(0.09)	(0.09)	(0.04)
N	590	590	590	210	210	210	472	472	472
R^2	0.58	0.52	0.51	0.41	0.41	0.47	0.31	0.43	0.48

Note. Outcomes are standardized. Weight-adjusted standard errors in parentheses.

~ $p < 0.10$. * $p < 0.05$. *** $p < 0.001$.

PPVT= Peabody Picture Vocabulary Test. WJ = Woodcock-Johnson. Teach in L1 is teacher-report. Head Start center-level fixed effects included in all models. Demographic covariates (centered at mean): child cohort, child gender, child disability status, maternal education, maternal marital status, caregiver depression, teenage mother status, caregiver age, and child age at spring assessment. HSIS weight used = CHSPR2003WTCA; FACES-2009 weight used = P21RA2WT.

Appendix Table 2.2

Teacher Qualifications by Spanish Classroom Instruction for Spanish-speaking DLL Children Within Each Dataset

	Outcomes							
	HSIS: Classroom Instruction in Spanish				***FACES-2009: Classroom Instruction in Spanish***			
	Yes (*N* = 711)		***No*** (*N* = 430)		***Yes*** (*N* = 463)		***No*** (*N* = 362)	
	Mean/ % of Sample	*SD*	Mean/ % of Sample	*SD*	Mean/ % of Sample	*SD*	Mean/ % of Sample	*SD*
Total Years Teaching	13.01	9.81	11.75	7.62	11.93	7.78	12.18	8.39
Total Years Teaching in Head Start	7.74	6.89	6.70	5.88	8.10	6.33	8.52	7.35
Highest Level of Education Completed								
Less Than College	0.29		0.25		0.22		0.26	
College Graduate	0.64		0.65		0.69		0.67	
Graduate Degree	0.06		0.03		0.09		0.08	
Teaaching Certificate/License	0.76		0.69		0.54		0.48	
Degree in Early Childhood	0.91		0.90		0.60		0.65	
Coursework in Early Childhood	0.96		0.96		0.91		0.92	
Child Development Associate Credential	0.58		0.61		0.50		0.44	

Note. HSIS weight used = S03TRWTCA_PI_TS; FACES-2009 weight used = T12TCHWT.

Appendix Table 2.3

Teacher Qualifications by Spanish Classroom Instruction for Spanish-speaking DLL Children Comparing Across Datasets

	Outcomes									
	Classroom Instruction in Spanish					***No Classroom Instruction in Spanish***				
	HSIS (*N* = 711)		***FACES-2009*** (*N* = 463)		***p-Value of HSIS/FACES-2009 Difference***	***HSIS*** (*N* = 430)		***FACES-2009*** (*N* = 362)		***p-Value of HSIS/FACES-2009 Difference***
	Mean/ % of Sample	*SD*	Mean/ % of Sample	*SD*		Mean/ % of Sample	*SD*	Mean/ % of Sample	*SD*	
Total Years Teaching	13.01	9.81	11.93	7.78	0.55	11.75	7.62	12.18	8.39	0.48
Total Years Teaching in Head Start	7.74	6.89	8.10	6.33	0.48	6.70	5.88	8.52	7.35	0.39
Highest Level of Education Completed										
Less Than College	0.29		0.22		0.57	0.25		0.26		0.54
College Graduate	0.64		0.69		0.46	0.65		0.67		0.48
Graduate Degree	0.06		0.09		0.45	0.03		0.08		0.47
Teaaching Certificate/License	0.76		0.54		0.32	0.69		0.48		0.38
Degree in Early Childhood	0.91		0.60		0.20	0.90		0.65		0.22
Coursework in Early Childhood	0.96		0.91		0.39	0.96		0.92		0.38
Child Development Associate Credential	0.58		0.50		0.57	0.61		0.44		0.36

Note. HSIS weight used = S03TRWTCA_PI_TS; FACES-2009 weight used = T12TCHWT.

Chapter 3: How Spanish is Used in Head Start: Observational Evidence from Four Classrooms

Abstract

Developmental science recommends and national Head Start policy mandates incorporating Dual Language Learner (DLL) children's home language in classroom instruction. It is less clear, however, how this is implemented in the real-world context of early childhood classrooms. In four local Head Start centers in a predominantly Spanish-speaking DLL county, exploratory observations helped shed light on when the home language of Spanish was used in the classroom and how it may have contributed to DLL children's school readiness skills. Emergent patterns from the observations revealed that Spanish was used to promote certain academic as well as planning and recall skills; to provide emotional caregiving; and to communicate with parents as well as during daily health routines. Thus, in line with Head Start's "whole child" model, Spanish was used in the domains of academic, socio-emotional, and health development as well as to strengthen the home-school partnership. Implications for practice are discussed.

Keywords: DLLs, Head Start, Spanish instruction

How Spanish is Used in Head Start:
Observational Evidence from Four Classrooms

The population of Dual Language Learner (DLL) children in the U.S. – young children who are learning more than one language simultaneously, their home language and English (Espinosa, 2013) – is growing rapidly. From 1994-95 to 2009-10, the number of school-aged DLLs increased by nearly 65% from 3.2 million students to over 5.2 million students (National Clearinghouse for English Language Acquisition, 2011), representing the fastest growing student segment in U.S. public schools (Calderón, Slavin, & Sánchez, 2011). Among younger children in Head Start and Early Head Start, DLLs now represent close to 40% of all participants, over 80% of who come from Spanish-speaking homes (U.S. DHHS, 2014). In recent years, there has been a national push from developmental policy reports (e.g., Mancilla-Martinez & Lesaux, 2014; McCabe et al., 2013) and research articles (e.g., Barnett, Yarosz, Thomas, Jung, & Blanco, 2007; Páez, Tabors, & Lopez, 2007) to include and incorporate DLL children's home language as much as possible in early childhood education (ECE) settings. In line with this policy, national Head Start mandates pertaining to DLL children stipulate that programs must: 1) support children in the acquisition of their home language and English; 2) provide comprehensive Head Start services to families in culturally appropriate and respectful ways in line with Head Start's "whole child" model of development in academic, socio-emotional, health, and family functioning domains; and 3) improve outreach and increase enrollment and quality of services to DLL children and their families (U.S. DHHS, 2008).

Despite these lofty and commendable goals, a number of practical challenges arise for ECE educators who work with DLLs, especially with regard to teaching and practice (U.S. DHHS, 2008). Chief among these concerns is how to best promote DLL children's language acquisition in their home language and English as well as the difficulty finding, attracting, and

retaining bilingual staff qualified in ECE. Teacher preparation programs in particular suffer from a paucity of coursework and a lack of professional preparation to work effectively with DLL families (Zepeda, Castro, & Cronin, 2011), though professional accreditation organizations such as the National Council for Accreditation of Teacher Education (NCATE) and the National Association for the Education of Young Children (NAEYC) are changing their standards to include more of a DLL focus. Despite developmental research and policy reports on language acquisition stressing the importance of supporting children's home language in the classroom, given these practical challenges, little research to date has been able to determine exactly how teachers and staff implement these mandates and use children's home language in a real-world context. The purpose of the current study was thus to explore how Spanish is supported day-to-day in ECE classrooms. In particular, from qualitative observations in four purposely-sampled Head Start classrooms, I explored how Spanish was used in these Head Start settings, focusing on the ways the use of Spanish may contribute to DLL children's school readiness skills.

Theoretical Framework

This study is grounded in bioecological theory, which posits that human development results from the interplay of *Process* x *Person* x *Context* x *Time* (Bronfenbrenner & Morris, 2006). The core of the model is *Process*, which constitutes reciprocal and continuous interactions between an organism and their environment known as proximal processes. The effects of these proximal processes on developmental outcomes systematically vary based on the characteristics of the person and their environmental context. The current study considers the proximal processes of Spanish use in the context of Head Start classrooms for Spanish-speaking DLL children.

As part of these classroom language proximal processes, children continuously and

reciprocally converse with adults, which extend over many turns and reference topics beyond just the immediate present. Consequently, children take part in the building of a complex linguistic structure such as a narrative or an explanation, where they ultimately learn to productively use language. From early naming exchanges with adults, children eventually become more adept at responding to listener's cues and creating sentences with new information (Tabors, 2008). These continuous and reciprocal language interactions enable children to participate in increasingly complex ways of communicating. Therefore, early language interactions support and privilege later literacy experiences (Uccelli, Hemphill, Pan, & Snow, 1999), particularly when they occur frequently in an ecological context like a Head Start classroom where DLL children may be encountering formal academic English for the first time.

Spanish-speaking DLL Children's English School Readiness Skills

As mentioned briefly above, this study uses the term "Dual Language Learner" (DLL) to describe young children who are learning more than one language simultaneously – their home language and English (Espinosa, 2013). This term encompasses the diversity of this population, which includes children from a wide variety of language backgrounds. Young DLLs may be of limited English proficiency, completely bilingual, or may not speak their home language fluently (August & Hakuta, 1997). Regardless of their home language experiences, DLLs have less English language exposure and practice than monolingual English-speaking children – children from homes where English is the only language – and do not perform on par with such children on various emergent English skills (August & Shanahan, 2006). Furthermore, the majority of DLLs in the U.S. come from Spanish-speaking homes (García, 2012), and although bilingualism per se is not a risk factor, the population of Latino children represents the largest group of children living in poverty in the U.S. (López & Velasco, 2011), which further places Spanish-

speaking DLLs at particular risk for delayed English language development (Hoff, 2013; Kieffer, 2010; Mancilla-Martinez & Vagh, 2013).

Incorporating the Home Language of Spanish in the Classroom

Using DLL children's home language of Spanish in the classroom may be an important pathway through which DLL children can maximize their English language learning experiences in ECE, as it helps them make better connections to the material in English-dominant child care programs and promotes the linguistic context in which DLL children are served (Barnett et al., 2007; Espinosa, 2013). A sufficiently high quality match between the classroom language environment and children's language capabilities can help children successfully become bilingual (McCabe et al., 2013). This may be particularly true when accounting for DLL children's skills inclusive of their home language and English (Hoff, 2013; McCabe et al., 2013; Pearson, Fernández, & Oller, 1993). Furthermore, given the timing of sensitive periods for language development (Nelson & Sheridan, 2011), the preschool years may be an ideal time to learn two languages (Bialystok, 2001, 2011; Genesee, Paradis, & Crago, 2004; Kuhl, 2009; McCabe et al., 2013).

Bilingual programs. Bilingual programs aim to provide adequate exposure and learning opportunities in English in addition to fostering the home language (Goldenberg, Nemeth, Hicks, Zepeda, & Cardona, 2013). Such programs include transitional models that initially incorporate the home language and then gradually move to English instruction. Several empirical studies have found that preschool classroom use of both the home language and English may lead to improvement in Spanish language skills and at least equivalent English emergent literacy skills compared with Spanish-speaking DLL children in all-English contexts (e.g., Barnett et al., 2007; Burchinal et al., 2016; Durán, Roseth, & Hoffman, 2010; Farver, Lonigan, & Eppe, 2009; Páez

et al., 2007). Research on bilingual programs with older elementary-aged children suggests similar results for transitional models compared with English-only programs by fourth grade (e.g., August & Shanahan, 2006; Goldenberg, 2012; Slavin, Madden, Calderón, Chamberlain, & Hennessy, 2011; Valentino & Reardon, 2015).

While it appears, therefore, that bilingual education likely supports development of the home language and English, less clear are the specifics of how to really incorporate children's home language (Spanish, in this case) in the classroom. The literature to date has focused mainly on English vocabulary building, emotional caregiving, and other socio-emotional skills, as well as on engaging family members and soliciting their participation in the classroom.

English vocabulary building. Although continued rich language opportunities in children's home language may transfer and promote English language acquisition in important areas such as phonological awareness and emergent literacy (August & Shanahan, 2006; Castro, Páez, Dickinson, & Frede, 2011; Dickinson, McCabe, Clark-Chiarelli, & Wolf, 2004; Rinaldi & Páez, 2008), Spanish-speaking DLLs tend to lag behind monolingual-English speakers particularly in English oral language skills, and especially among low-income children (Hoff, 2013; McCabe et al., 2013; Páez et al., 2007). Spanish-speaking DLL four- and five-year olds perform one to two standard deviations below monolingual-English norms, on average, on measures of English expressive and receptive vocabulary (Hoff, 2013). While an initial language gap is understandable given the limited amount of home exposure to English, vocabulary gaps between Spanish-speaking DLLs and monolingual-English speakers are still significant at age 11 years (Mancilla-Martinez & Lesaux, 2011). Furthermore, similar to monolingual English-speakers, Spanish-speaking DLL children tend to exhibit better receptive than expressive vocabulary skills (Gibson, Oller, Jarmulowicz, & Ethington, 2012), though both have been

shown to be predictive of future academic skills (Páez et al., 2007).

Best practice, therefore, for fostering Spanish-speaking DLL children's English oral language skills in the classroom necessitates a special focus on English vocabulary building, and in particular, elicitation of English vocabulary. This includes rich explanations from storybook reading, frequent reading at home and in ECE programs, and practicing target vocabulary words (Collins, 2010). Bridging explanations of key vocabulary with supplemental Spanish contextual expansions or embedding Spanish explanations of new words can also help facilitate English vocabulary building (Lugo-Neris, Jackson, & Goldstein, 2010). Other researchers recommend that target English words should be taught together with strategies for using information from context, from morphology, from knowledge about multiple meanings, and from cognates with the home language to infer word meaning (e.g., Carlo et al., 2004). Despite these recommendations, it is unclear how teachers actually implement these strategies of supporting home language and English elicitation day-to-day in Head Start classrooms.

Executive function skills. A further area that previous literature has focused on as a way to incorporate the home language of Spanish in the classroom has been through skills such as executive function. Recently, researchers have begun to focus on a possible advantage for bilingual children's executive function skills (Morales, Calvo, & Bialystok, 2013; Bialystok, 2015), and particularly in the areas of working memory, cognitive flexibility, inhibitory control, and planning. This line of inquiry has mostly focused on balanced bilinguals – children who have balanced knowledge and facility of two languages equally (Genesee et al., 1978) – and less so on DLL children who may be especially dominant in one language. Newer work, however, on executive function skills and specifically with DLLs has found that Spanish-speaking DLL children were better at planning and cognitive flexibility (Hutchison, Mead, & Winsler, 2015)

and had greater inhibitory control (Malin, Aldoney, Taschman, & Cabrera, 2015) compared with monolingual English-speakers. Given that executive function is a major predictor of children's academic success (Best, Miller, & Naglieri, 2011; Bialystok, 2015), promoting this advantage in the classroom has the potential to help Spanish-speaking DLL children catch up to their monolingual peers in English academic skills.

Socio-emotional skills. Another area where incorporating the home language may be particularly useful for DLL students is socio-emotional skills. Starting in the mid-1980s, research on linguistically isolated DLL children found they were at higher risk for social problems because they lacked the language skills necessary to communicate with their teacher and peers (Garnica, 1983). Tabors (1997) found that DLL children needed social interaction to acquire proficiency in English, but lacked the language skills to have these interactions. Studies on older DLL students found they had a more difficult time adjusting to school, scored lower on measures of self-concept, and were rated higher in shyness and anxiety and lower in peer social skills by teachers compared with monolingual English-speaking students (Spomer & Cowen, 2001), and further that DLL students may be overlooked for special education services because programs are unsure of their abilities due to language barriers (Morgan et al., 2015). Other work documents that preschool-aged DLLs in particular may exhibit signs of externalizing and internalizing behavior problems (Nemeth & Brillante, 2011).

Teachers' support of children's home language in the classroom, however, allowed for closer teacher-child relationships and better social skills for DLL children, perhaps because use of Spanish helped the children adjust to the social demands of the classroom (Chang et al., 2007). Moreover, increased use of Spanish by the teacher was associated with Spanish-speaking DLL children being less likely to be the victims of aggression, bullying, or teasing by their peers

(Chang et al., 2007), as other work demonstrates that the relationship between DLLs and their teacher mirrors the relationship between DLLs and their monolingual-English peers (Gillanders, 2007). Further, the quality of this teacher-child relationship was predictive not only of behavior, but also the change in academic skills from preschool to first grade (Pianta & Stuhlman, 2004).

Family engagement. A final area that research has focused on as a mechanism for incorporating children's home language of Spanish in the classroom has been family engagement. The home-school relationship is important to academic success of all children and particularly for DLL children, where prior work has documented a mismatch between school participation expectations and DLL parents' beliefs about their children's education (Halgunseth, Jia, & Barbarin, 2013). Contrary to older research indicating that teachers believe DLL family members are not interested in their children's education (Lightfoot, 2004; López, 2001), newer work demonstrates that DLL parents often express great aspirations for their children's education (Fuligni & Fuligni, 2007; Spera, Wentzel, & Matto, 2009).

It appears therefore, that strong connections between DLL families and child care providers can yield important benefits for children and can maximize their experiences in ECE programs (Halgunseth et al., 2013). Ensuring such connections necessitates providers who can speak the same language as parents in order to communicate about their children's progress in school and ways to support their children's learning and development at home. An essential component of Head Start programs therefore recognizes parents as the first and primary teachers of their children and the importance of soliciting their participation in the classroom (Zigler & Styfco, 2010). Similar to other areas, it is unclear how this is implemented day-to-day when parents do not speak English.

Present Study

Prior literature on including Spanish-speaking DLL children's home language in the classroom indicates that children can maintain their home language without compromising their English language acquisition, particularly when children feel emotionally supported, and teachers focus specifically on English vocabulary and enlist participation and support from parents (Carlo et al., 2004; Chang, et al., 2007; Collins, 2010; Halgunseth et al., 2013; Lugo-Neris, et al., 2010). However, no known research to date has been able to determine exactly how teachers and staff actually incorporate the home language in a real-world context. Analyses of large-scale data sets on Head Start such as the Head Start Impact Study (HSIS; U.S. DHHS, 2002-2006) and the Head Start Family and Child Experiences Survey, 2009 Cohort (FACES-2009; U.S. DHHS, 2009-2013) indicate that classroom use of Spanish impacts some developmental outcomes more than others (Miller, 2016), however these large datasets provide only a small set of dichotomized variables on classroom use of Spanish and lack detail on these language interactions.

The present study therefore attempted to shed light on the "black box" of what goes on inside classrooms by conducting exploratory observations in four local, purposely-sampled Head Start classrooms. In particular, the focal phenomenon of these observations was classroom activities that teachers engaged in with their students, and the primary unit of analysis was the language interactions around these activities. Thus, the study's principal research question was: How is Spanish used in local Head Start classrooms, for what purposes, and how may the use of Spanish possibly contribute to DLL children's school readiness skills?

Results from this study provide a detailed understanding of the heterogeneity in classroom Spanish use. It went beyond dichotomous variables about whether teachers reported

using Spanish in the classroom and instead sought to identify the different patterns underlying classroom Spanish use and how they may relate to children's school readiness. Importantly, the results initiate discussion within the research community about how to better conceptualize home language use for future studies and how to better capture the complex dynamics in the match between the classroom language environment and children's language abilities in a real-world context.

Method

Sites and Participants

This study was conducted with exploratory observations at four local, purposely-sampled Head Start sites. The local Head Start umbrella agency in this study was located in a large, urban county in the southwestern U.S. It currently serves nearly 4,000 children, about 85% of whom are Latino. Given the high prevalence of Latino children, in conforming to national Head Start policy and according to the Executive Director of the local umbrella agency, all the local Head Start classrooms strived to have bilingual lead and assistant teachers. However, in my initial meeting with the Executive Director, she mentioned that the extent of Spanish use in each individual classroom varied depending on the proportion of Spanish-speaking DLLs as well as the Spanish abilities of the teachers. Thus, according to the Executive Director, while all classrooms were considered bilingual by the local Head Start agency, there was wide variation in the extent of classroom Spanish use.

Based on this variability in classroom use of Spanish, in consultation with the Executive Director and the Educational Director of the local Head Start agency, four sites were purposely chosen throughout the county in order to observe a range of possible Spanish language classroom interactions between teachers and children over the course of a few weeks. The specific sites

chosen each had a substantial population of enrolled Spanish-speaking DLL children, with their families having considerable variation in English language proficiency. For example, one of the sites served a newer Spanish-speaking immigrant community with little knowledge of English, whereas two other sites served more established second-generation communities with more English language skills though still not completely proficient, and the last site served a diversity of other language DLL families including a sizeable Spanish-speaking population. Therefore, these centers showcased that despite their common denominator of language, the extent of proficiency in English and the subsequent reliance on Spanish translations among enrolled families varied considerably. Further, according to the Executive and Educational Directors, these centers had a history of working with researchers from the local university and their directors were open to research-practice partnerships. Finally, four sites were chosen as a number that would sufficiently enable the detailed level of observational field notes.

Prior to the start of the study observations, I held a meeting of all the teachers at each of the four sites where I explained the study purpose and obtained consent to observe their classrooms for a period of one week. Teachers were able to indicate if they did not wish to participate in the study. Teachers were also asked if they spoke Spanish and to estimate the percentage of the day they believed they used Spanish for instruction: 0-25%, 25-50%, 50-75%, and 75-100%. About 80% of all the teachers across the sites responded they were native Spanish speakers and estimated that they used Spanish in their classroom at least 25% of the time. I therefore chose teachers who consented to participate in the study and whose classrooms maximized variation in Spanish use. I aimed for one classroom in each of the Spanish percentage brackets across the four sites. Thus, one selected teacher reported using Spanish for instruction 0-25% of the time (this was a Caucasian teacher because I did not have any Spanish-speaking

teachers who reported using Spanish in this bracket), another teacher 25-50%, a third 50-75%, and the last for 75-100% of the time. The latter three teachers I observed were Latina and native Spanish speakers. Each of these four classrooms also had an assistant teacher, each of whom was Latina and a native Spanish-speaker who reported using Spanish at least 50% of the time for classroom instruction.

Though the Caucasian teacher responded that she did not speak fluent Spanish, on her survey form she indicated that she knew some choice phrases and words and otherwise relied on her Spanish-speaking assistant teacher to further assist with translation, particularly with the parents of the children in her class who had limited English proficiency. Table 3.1 lists information about the four lead and assistant teachers as well as the center directors, including their Spanish-speaking abilities and how much time they reported instructing children in Spanish. To thank them for their participation in the study, each teacher pair received a $50 Lakeshore gift card to use for their classroom.

{Insert Table 3.1}

Data Collection

The focal phenomenon of the observations was based on a recent review of quality ECE practices for young Spanish-speaking DLLs (Castro, Espinosa, & Páez, 2011), and the unit of analysis was each language-based interaction among teachers and students. Based on bioecological theory and the continuous and reciprocal language-based proximal processes that are the engines of development (Bronfenbrenner & Morris, 2006), the observations highlighted when and how Spanish was used for whole class instruction, small group and one-on-one instruction, emotional caregiving, play, classroom directions, and interactions with parents. The observations also took particular note of when Spanish use related to such school readiness

domains as promoting children's engagement with the teacher and their peers; planning and recall of activities; addressing challenging behaviors that are common to DLLs such as difficulty expressing ideas and difficulty following directions (Nemeth & Brillante, 2011); and fostering time-on-task in explicit English language acquisition such as targeted vocabulary and letter-word instruction.

In particular, the observations focused on classroom use of Spanish in relation to the development of the English oral language skills of vocabulary and comprehension in a global context. That is, how did classroom use of Spanish help children generally communicate in English? Although there are many other fundamental aspects of language development such as syntax and decoding skills, phoneme knowledge, and phonological awareness, this exploratory study primarily focused on the English oral language skills of vocabulary and comprehension given that oral language is one of the key building blocks of academic competence and particularly for DLL children (Yesil-Dagli, 2011). Further, I was interested in exploring how DLL children's home language could be incorporated in the classroom to help them globally communicate in a second language as opposed to mastering all the mechanical aspects of the second language.

As part of the classroom observations, I was particularly interested in teachers' interactions with parents, so I arrived at the centers prior to opening each morning and stayed until the end of the day in order to observe parent drop off and pick up for each child. Further, as an additional part of my observations, I met informally with the center directors to learn more about the types of families enrolled at the center, the different ways they supported Spanish at the center, and the center-specific policies, if any, for incorporating the home language.

A total of 4-5 days (16-20 hours) was spent observing each classroom for a total of

seventeen days observing across the four classrooms and seventy hours of detailed field notes. Field notes were initially written by hand as the most flexible way to record observations. Each evening, the field notes were transcribed on computer before beginning the next day's observations.

Data Analysis

The data analysis for these observations used an inductive approach (Hatch, 2002), in which the field notes were used to uncover specific patterns leading to more general statements about the data. For each site, first cycle coding was done using descriptive codes, which summarized in a word or phrase the topic of a passage from the observation. The purpose of this coding method was to orient me to the data in order to analyze its general topic (Saldaña, 2013). The coding was completed for one site before beginning observations at the next site. Thus, the codes were refined using the constant comparative method (CCM; Glaser & Strauss, 1967), in which new data from other sites were compared to the initial codes and codes were subsequently refined in an iterative process.

Once the first cycle coding was completed, I used pattern codes as a second cycle coding method, which was a more advanced way of analyzing the data to further develop a sense of overarching categories (Saldaña, 2013). Thus, the first cycle codes were reorganized to develop a smaller and more select list of broader categories with the goal of organizing the data into themes. Pattern coding in particular helped me develop "meta-codes" or categories that identified similarly coded data. These categories were then used to generate themes from the data in order to make a concluding key assertion about the study. This key assertion was a summative and data-supported statement about the research (Saldaña, 2013). An abbreviated example of the final coding framework for one of the sites is displayed in Table 3.2.

{Insert Table 3.2}

Member checks. As part of the data collection, a follow-up phone conversation was conducted with each teacher regarding the observations and in particular about when I saw her using Spanish. The teachers were happy to speak with me and willingly gave their time. During these conversations, I described the types of classroom activities in which I observed her using Spanish and asked her if this was typical and if she agreed with what I had seen. In all cases the teacher agreed and even elaborated a bit on her reasoning for using Spanish in that situation. At the end of the conversation I asked the teacher to provide me with any more information she thought I should know on when and how she used Spanish in her classroom. All the teachers had some concluding thoughts.

Moreover, after the data analysis was completed, and I had developed the "meta-codes" or categories that identified similarly coded data with pattern coding, I again followed up with the teachers to discuss the emerging patterns from the data about when Spanish was used in their classrooms. Many of these patterns related to how classroom use of Spanish supported English oral language skills. I asked the teachers if these were reasonable conclusions based on the Spanish use in her classroom. Again, in all cases the teachers agreed. One teacher elaborated that she agreed with these conclusions, and specified that she 'tried to include Spanish throughout all aspects of the formal Head Start curriculum.' That is, she tried to formally incorporate Spanish throughout the day within a larger framework of Head Start's "whole child model."

Head Start's "whole child model" was an interesting analytic lens that I had not previously considered, but that fit very well with the data and honored the teachers' classroom experiences. I then further refined my themes using this analytic lens, and met with the center directors one last time to discuss these findings. The directors were happy to talk with me, and

agreed that it was the goal of each center to try and include DLL children's home language throughout the day in ways that were formally and informally integrated with Head Start's curriculum.

Results

Despite initial reported differences in percentage of Spanish instruction by the teachers, in actuality, I observed no meaningful differences across the four sites in how much or how often Spanish was used. At each of the four sites I observed Spanish being used daily in the classroom and regularly throughout the day for many different activities by teachers and children. I observed frequent Spanish use by teachers during formal instruction such as academic activities, mealtimes, and other health routines, as well as during other, more informal interactions such as when teachers provided to emotional caregiving to children, when they communicated daily with parents during pick-up and drop-off, and as part of the daily classroom routine. Spanish was almost always coupled with English in order to assist with both direct translation and more informal conveying of context.

Head Start's "Whole Child" Model of Development

From the observed daily use of Spanish for multiple developmental domains coupled with discussions with the teachers and center directors, one clear, overarching theme emerged from the data pertaining to classroom use of Spanish: Spanish was used to help promote the English oral language skills of vocabulary and comprehension in a global context in accordance with Head Start's "whole child" model of development. This "whole child" approach to school readiness helps children at risk in the targeted domains of cognitive development, socio-emotional development, health, and family functioning in order to adequately prepare children for kindergarten (Zigler & Styfco, 2010). Given Head Start's mission of supporting Spanish-

speaking DLL children's school readiness, such preparedness necessitates a focus on each of these core developmental domains with particular regard to how they affect DLLs (U.S. DHHS, 2008).

The data demonstrated that the promotion of English oral language skills was central for Spanish-speaking DLLs at each site. That is, at each of the four sites, Spanish was used explicitly to help promote English oral language skills within each developmental domain. At times Spanish was used to directly translate from English both key, established vocabulary and when introducing new target vocabulary. As part of formal classroom instruction, teachers said vocabulary words in one language and then translated into the other. In other instances, Spanish was used for loose, contextual translations that conveyed global meaning and seemed to model for children how to switch back and forth between languages. Embedded throughout each of the domains described below, therefore, was this focus on incorporating Spanish to help promote English oral language skills of receptive vocabulary and comprehension.

Although a central component of oral language includes expressive vocabulary, the language interactions I observed between teachers and children described below were largely limited to receptive vocabulary skills and listening comprehension. The lack of elicitation of English vocabulary seemed like a missed learning opportunity in the classroom, though both receptive and expressive vocabulary have been found to be predictive of future academic success for DLLs (Páez et al., 2007).

Cognitive Development

Academic language and literacy activities. Although there were Spanish literacy experiences to be had in the classroom – all the classrooms had story books in Spanish and all the labels in the physical classroom spaces were in both languages – all of the large group

language and literacy activities like story time and songs were exclusively in English. Therefore, direct translation into Spanish was especially prevalent when the teacher conducted these academic activities with the class, and in particular during formal instruction, as the following examples demonstrate. In one instance, I observed one of the teachers reading *The Very Hungry Caterpillar* to the class. On the last day, when the caterpillar eats through several different types of food, she asked the children 'who knows what sausage is?' When no one answered among a sea of blank faces, the teacher elaborated, 'Sausage is *chorizo*.' Immediately, the realization of what sausage is registered in the faces of the children and they responded, 'ooooh!' In another instance, I observed one of the teachers played a CD of the *Music Man* song. As the singer named all of the instruments – piano, flute, tuba – and played a few notes on each, the teacher called out translations into Spanish: '*el piano, la flauta, la tuba*!' so that the children could imitate playing the instruments.

As another example, I observed the teacher reading *Caps for Sale* to the whole class. 'Why does the man have so many caps?' the teacher asked the class about the cover page. Again, blanks stares from the children. 'Ok, why does the man have so many *gorras*?' After hearing this translation, the children were able to attempt to answer the teacher's question. Thus, it was clear the children did not understand the initial question as they did not know what a cap was in English. In order for them to answer, the teacher needed to translate cap, and some other subsequent words into Spanish as the story went along, in order for the children to comprehend.

In each classroom I observed, such explicit translation provided Spanish-speaking DLL children with more opportunities to make connections to the learning material by helping them to overcome limits with the English vocabulary. These explanations helped facilitate more in-depth critical thinking about the content that these vocabulary limits might have impeded as well as

helped increase DLL children's overall conceptual understanding of the material independent of the language in which in occurred.

Other academic skills. Interestingly, the explicit use of Spanish during academic activities was unique to activities emphasizing oral language skills. During instruction in other academic domains, I observed teachers and children using English almost exclusively at each of the four sites, even in the classrooms that reported instructing children more than 50% of the time in Spanish. This was particularly the case every time I observed instruction related to letter names and sounds. As an especially illustrative example, I observed one of the teachers during literacy time in which this entire dialogue with the children took place in English. In fact, this interaction took place in the classroom in which the teacher reported instructing in Spanish 75-100% of the time:

> *Teacher (T)*: 'Today we're going to do alliterations. These are things that start with the same letter. Remember we learned "J" is for Jorge, Jonathan, Julio, Jayson, and Jillian. Let's do another letter. What letter is this?' holding up a big card with the letter "S."
>
> *Class (C)*: 'It's an "S"!' shouted several children.
>
> *T*: 'Great! What words start with "S"?'
>
> *C*: 'A snake!' answered one little girl. 'Sister' answered another girl.
>
> *T*: 'Great. What about sugar?' Then the teacher held up a card with the letter "A." 'What starts with "A"?'
>
> *C*: '"A" is for Adam, Alejandra, and my Aunt Abby' answered one child.
>
> *T*: 'Yes, what else starts with "A"? A-a-a-Apple! Ok, now let's do "L" for my friend Luke or like l-l-lion!'
>
> *C*: 'L is for Luca' said another little girl.

Thus, instruction in other academic domains such as letter names and sounds took place daily almost exclusively in English – the teachers asked questions and prompted the children in

English, and the children understood and responded in English. This finding was even more interesting given that certain letters in Spanish and English make very different sounds such as the letter "J." Yet in the example above, the teacher did not focus on the difference in sound between Jorge and Julio on the one hand and Jonathan, Jayson, and Jillian on the other. Instead she instructed the children in English based solely on the letter recognition, which phonemically might be confusing for children.

Executive function skills. An important component of the curriculum at the local Head Start umbrella agency is the promotion of goal-directed behavior in the form of the executive function skills of planning and recall. Before center time, which was a free-choice activity at all the sites, teachers asked each child where they planned to work that day. Similarly, when center time was over, teachers asked each child to recall where they worked, what they did and with whom. These planning and recall activities were the only activities across the sites during which I observed noticeable differences in how much Spanish teachers used.

At two of the sites, I observed teachers incorporating Spanish for these planning and recall activities often by directly translating. During these observations, teachers asked children in both languages where they planned to work during center time. Most children answered in English, but a few children who felt more comfortable using Spanish answered in Spanish or in a mixture of both languages. For example, I observed one teacher asking the children in her class, 'Where are you going to work today?' and then immediately, '*Dónde van a trabajar hoy*?' One child who particularly lacked proficiency in English answered, 'I work in' and then '*casita.*' The teacher then asked her how to say *casita* in English. When she did not respond, the teacher translated for her 'house area. You want to work in the house area today.'

Similarly, when center time was over, teachers conducted recall activities in both

languages. I observed teachers asking each child, 'Where did you work and with whom?' and then immediately '*Dónde trabajaste y con quién*?' Some children responded in English such as one little girl: 'I played with the *Magna Tiles* with Arely' while others responded in Spanish like one boy: '*Trabajé en el área de bloques con Ricardo*,' or in a mix of both languages like the child above.

At the other two sites, I observed similar language interactions around planning and recall except they occurred only in English. The sites in which teachers reported instructing in Spanish the most (50-75% of the time and 75-100% of the time), were the same sites at which teachers incorporated Spanish during planning and recall time. At the sites in which teachers reported instructing in Spanish less, the teachers did not use Spanish during these interactions. Thus, at half of the sites when promoting goal-directed behavior in the form of planning and recall, I observed teachers incorporating Spanish to promote the English oral language skills of receptive vocabulary and comprehension when instructing Spanish-speaking DLLs, particularly if they reported conducting a higher percentage of their instruction overall in Spanish. These differences, however, were only observed during planning and recall time specifically. During all other activities I observed no differences across the sites in how much Spanish was used during the day.

Daily Routines

The focus on the English oral language skills of receptive vocabulary and comprehension was not just limited to academic activities, as Spanish was also incorporated regularly throughout the daily routine. For example, I often heard several of the teachers asking, 'who has to go to the bathroom? *Baño* anyone? *Baño*?' This especially occurred during free time when the children were outside and throughout the day to help the class transition: 'Five more minutes. *Cinco*

minutos más.'

Spanish was also used daily in all the classrooms to help support the home language during the morning routine on the carpet. During this time the teacher sang a good morning song in both English and Spanish and provided an overview of the day, including reviewing the calendar. In one typical instance I observed the teacher asking the class, 'Ok, let's talk about the calendar. Luke, do you know what month it is?' Luke answered, 'January.' 'Very good. Today is January 14, 2015,' the teacher responded and then repeated, '*14 de Enero*.' In another observation, the teacher asked, 'What day is today?' Several children shouted 'Monday!' 'That's right. Today is Monday. *Hoy es Lunes*,' answered the teacher. I even observed the teacher who was not a native Spanish speaker translating the months and days of the week into Spanish as part of the words and phrases she knew how to say. These translations ensured that all the children understood the key aspects of the calendar and not just the children answering the teacher in English

Socio-emotional Development

Another integral part of Head Start's "whole child model" emphasizes socio-emotional skills. Here as well, English oral language was embedded throughout language interactions within this domain, though in a less formal manner than during instructional time where there was often direct translation between English and Spanish. The language interactions emphasizing socio-emotional skills such as when teachers provided children with emotional caregiving were often more casual in nature as they were not part of formal classroom activities. Thus, there were fewer direct translations from one language to another and more conveyance of global meaning as the following examples indicate. However, these interactions seemed to model for the children how to switch back and forth between languages while helping to build English vocabulary.

Emotional caregiving. When teachers provided emotional caregiving to the Spanish-speaking DLL children in their class, which was a common daily activity, at each of the four sites I observed that they did so first in Spanish and then loosely translated into or continued speaking in English. This included addressing a child as *mija* or *mijo*, a slang term of endearment in Spanish used to express a global child of mine, used in such instances as when teachers said, '*Siéntate mija.* Sit down sweetie.' Or '*Qué pasó mijo*? What's wrong sweetie?'

In other instances, teachers used Spanish and then continued loosely in English to compliment children in a similar global manner: '*Me gusta la trenza en tu pelo.* Your braid is so pretty.' And '*Míra. Tienes Frozen en tu camisa. Qué linda*! I like your *Frozen* shirt.' Similarly, when children felt ill, I observed that teachers tended to use a combination of both languages to help convey global meaning and build vocabulary: '*Qué te duele*? Tell me what hurts.' Or '*Sé que no te sientes bien.* Your mommy is coming to pick you up so you can feel better.' Lastly, teachers used Spanish to help navigate conflict between children: *'Diana, agarraste la muñeca de Patricia*. You need to apologize to her. You can't just grab things from other people.'

Health Routines

Another important part of the Head Start curriculum focuses on health routines, as good physical health, including nutrition, is imperative to children's success in school (Zigler & Styfco, 2010). Thus, mealtimes (breakfast and lunch) were an essential part of the children's day as was time to brush their teeth after eating in the morning. During both of these types of routines (eating, brushing teeth), teachers participated with the children, sitting with them at the table and eating the same foods as well as helping them to brush their teeth afterwards. Mealtimes were therefore considered formal learning opportunities. An extraordinary amount of language interactions occurred during these routines and, at each site, I observed the teachers

incorporating Spanish in a way that seemed to promote English oral language skills.

Mealtimes. The menu for Head Start changed daily in order to provide the children with access to varied, healthy foods. At each site, the children sat at two long tables. One teacher sat with the children at the first table while the other teacher sat with the children at a second table. Given the many different types of food that the children encountered and Head Start's specific curricular focus on healthy foods, several of the language interactions that occurred during mealtimes had to do with the food itself and directly translating from one language to another. For example, I observed one teacher asking her table: 'What food is this?' 'Carrots!' responded several children. 'Yes, carrots. *Zanahorias.*' In another instance the teacher said: 'We are going to pass around the salad. What color is the salad?' 'Green!' answered the children. 'That's right. The salad is green. *Verde*. That means it's healthy for our heart.' Another time I observed the teacher ask: 'What fruit is this?' 'It's a tangerine' responded the children. 'Yes, a tangerine. Do you know what fruit it is related to?' When none of the children answered, she continued, 'It's similar to an orange. *Una naranja*.'

Yet, other times during the meals, the language interactions consisted more of casual small talk, and were similar in scope to when teachers provided emotional caregiving to children. In these cases the teacher said something in Spanish and then loosely translated into or continued speaking in English to convey global meaning. For example, I observed one teacher asking: '*Qué hiciste el fin de semana pasado*? Did it rain on Saturday or Sunday?' In another instance I observed one little girl tell the teacher, '*Tengo una mascota en mi casa*.' 'Oh yeah? What kind of pet?' the teacher asked. It was clear the little girl did not understand the teacher because the teacher quickly said, '*Qué tipo de mascota tienes*?' '*Un perro*' answered the little girl. 'Patricia has a dog,' the teacher told the rest of her table. Thus, whether formally discussing the actual

food itself or during other casual, peripheral conversation, mealtimes offered rich opportunities to use Spanish to promote English oral language skills of receptive vocabulary and comprehension. At times these interactions consisted of direct translation between languages, particularly when discussing the foods served as a formal part of Head Start's curriculum. And in other instances the language interactions were more casual and provided more global contextual meaning while seeming to model for children how to switch back and forth between languages.

Teeth brushing. Another important health routine in Head Start is teeth brushing. Each child had their own toothbrush at the center that they used daily to brush their teeth after breakfast. During this time at each site, I observed that the teachers often incorporated Spanish when they began the activity with the entire class to help explain the routine: 'We brush our teeth all over. Inside, outside, top, bottom, and tongue,' which was immediately followed by, '*Dentro, afuera, arriba, abajo, y la lengua,*' while imitating the act of teeth brushing. Similarly, I often heard teachers say, '*Nos cepillamos los dientes para tener dientes y encías saludables*. We brush our teeth so we can have healthy teeth and gums.'

Once the introduction to the brushing routine was over, because teachers assisted children with teeth brushing one-on-one instead of in a group, I observed the teachers go back and forth between languages depending on the child they were assisting. Teeth brushing was therefore one of the rare activities in the classroom that teachers could specifically tailor their language choice with children at the individual level. They spoke in English to children who were able to understand: 'Arely, come brush your teeth,' and 'Run your toothbrush under the water when you are finished brushing,' and they spoke in Spanish to children who lacked proficiency with English and then directly translated for them: '*No necesitas tanta pasta*. You don't need so much toothpaste.' Thus, teeth brushing was a unique opportunity for children to make connections to

the English vocabulary and comprehension in a much more individualized manner because teachers assisted children one-on-one.

Family Functioning

A final primary component of Head Start's "whole child" model is family engagement. Head Start recognizes parents as the first and primary teachers of their children and the importance of soliciting their participation in the classroom (Zigler & Styfco, 2010). The centers I observed therefore made a special effort to engage parents. At each site, all communications and reminders to parents as well as classroom bulletin boards were in both English and Spanish, and teachers reported on children's progress in both languages. According to the center directors, the bilingualism promoted by these local Head Start centers helped foster a close parent-caregiver connection regarding the child, particularly because many of the parents did not speak English proficiently.

During my time in the classrooms, I purposely arrived at every center before it opened in order to observe teachers greeting each child and their parents in the morning and afternoon. They always did so both in English and Spanish: 'Good morning. *Buenos días*.' 'Good bye. See you tomorrow. *Adios. Hasta mañana.*' Other classroom reminders usually followed these salutations with teachers directly translating for parents from one language to another: '*Head Start estará cerrado el próximo Lunes por el día de Martin Luther King*. Next Monday the center will be closed for MLK Day.' 'Today there is a mandatory lice check. *Necesitamos chequear las cabezas de los niños para piojos.*' 'Remember, we have a parent-teacher conference this afternoon at 1:30. *Tenemos una reunión de padres a la 1:30*.' Teachers also often reported on the children to their parents in both English and Spanish: 'Luke did not wear his glasses today. *Luke no usó sus gafas hoy*.' '*Jonathan no comía hoy.* Jonathan did not eat his lunch today.' 'Oliver

played very nicely with the other children today. *Oliver jugó muy bien con los otros niños hoy*.'

At the site in which the teacher did not speak Spanish, she primarily spoke to parents in English with some key words in Spanish: 'Good morning. *Buenos dias.* I will see you this afternoon for our conference,' and then the assistant teacher directly translated for her in Spanish. At another center I also observed a voluntary parent-child book sharing activity in which the teacher invited the parents into the classroom for a few minutes one morning to read a book with their child. Interestingly, all of the books that the children brought were in English, although some of the parents just talked about the illustrations with their child in Spanish.

My discussions with the center directors revealed that because the majority of the parents served by the local Head Start umbrella agency spoke only cursory English, the parents relied on the Spanish translations from the teachers for the bulk of their understanding. According to the directors, these translations not only helped teachers and parents communicate effectively, but they also simultaneously helped the parents learn key English vocabulary words. It is possible that with these few key English words, parents could communicate better with their children who often easily switched back and forth between languages.

Thus, within each of Head Start's "whole child" domains, Spanish was used to promote English oral language skills of receptive vocabulary and comprehension in a global context. Spanish was often included as part of formal classroom instruction when teachers introduced vocabulary words in one language and then directly translated into the other. In other instances, Spanish was used for loose, contextual translations that conveyed global meaning and seemed to model for children how to switch back and forth between languages. Figure 3.1 visually displays how Spanish was incorporated throughout each of the domains of cognitive, socio-emotional, and health development as well as family functioning.

{Insert Figure 3.1}

Discussion

This study conducted exploratory observations at four local Head Start sites to ascertain how Spanish was supported day-to-day in ECE classrooms. In particular, through analysis of detailed field notes, I examined how Spanish was used in local Head Start settings, for what purposes, and how the use of Spanish may possibly contribute to DLL children's school readiness skills. Results from two cycles of coding, inductive analysis, and extensive member checks revealed that Spanish was used to help promote English oral language skills of receptive vocabulary and comprehension in a global context in accordance with Head Start's "whole child" model of development throughout the domains of cognitive, socio-emotional and health development, as well as family functioning.

At times in my observations Spanish was used to directly translate from English both key, established vocabulary and when introducing new target vocabulary. This was especially the case for formal academic lessons involving story time, songs, and even meals. In other instances, particularly when teachers provided emotional caregiving to children or engaged in causal conversations during mealtimes, Spanish was used for loose, contextual translations that conveyed global meaning and seemed to model for children how to switch back and forth between languages. Additionally, Spanish was often used during daily routines and to communicate effectively with parents. This was true at all the sites I observed despite self-reported initial differences by the teachers in percentage of daily Spanish instruction.

This finding is consistent with bioecological theory and the proximal processes that are the engines of development (Bronfenbrenner & Morris, 2006) as it enumerated the extent of the reciprocal and continuous classroom language interactions in Head Start. The constant

incorporation of Spanish at each site across domains seemed to help solidify DLL children's understanding of English oral language. The key assertion constructed from this study, therefore, is that use of Spanish was quite deliberate in Head Start classrooms, and it was tailored in ways that may promote important school readiness skills across multiple developmental domains for Spanish-speaking DLL children. For example, through this explicit focus on building English oral language skills of receptive vocabulary and comprehension, it is possible the children at this local Head Start agency will be better prepared for kindergarten as oral language is one of the key building blocks of academic competence and particularly for DLL children (Yesil-Dagli, 2011). This key assertion also converges with previous literature on incorporating the home language in the classroom necessitating a special focus on English vocabulary for Spanish-speaking DLL children (Carlo et al., 2004; Chang et al., 2007; Collins, 2010; Lugo-Neris et al., 2010).

The teachers themselves readily explained such a focus on English oral language and in an individualized manner where possible during the member checks. One teacher told me: 'As the year goes on, I try to identify who needs more English or who needs more Spanish. Now almost all children made progress using English, though I'm still using both languages with the class to help those who need a little more in Spanish.' Similarly, another teacher said: 'I follow the lead of the child. If I speak to them in English and they answer in Spanish, I know they feel more comfortable with the latter and will switch to Spanish myself.' Thus, at each of the four sites I observed, teachers were purposeful in their use of Spanish. It is possible such classroom use of Spanish helped children maintain connections with their home language in way that furthered their English language acquisition. This may have been particularly the case when children felt emotionally supported, and teachers focused specifically on English vocabulary and

enlisted participation and support from parents, as prior research suggests these to be important elements for preschoolers to maintain their home language while learning a new one. (Carlo et al., 2004; Chang, et al., 2007; Collins, 2010; Halgunseth et al., 2013; Lugo-Neris, et al., 2010).

Although teachers used Spanish often to help promote English oral language skills of receptive vocabulary and comprehension during activities such as story time and singing songs, they used English almost exclusively during instruction in other academic domains. This was especially true for instruction related to letter names and sounds, and it was unclear in my observations as to why. It may be that the DLL children already had sufficient exposure to English letter names and sounds from sources like television and media even if they used Spanish exclusively in the home, so there was no added benefit for the teacher instructing the children in Spanish for these domains. On the other hand, perhaps the children were answering based on rote memorization, which was possible in the format of the lessons on letter names and sounds, and they really would have benefitted from instruction in Spanish in this domain.

Further, although a central component of oral language includes expressive vocabulary, the Spanish language interactions I observed between teachers and children were largely limited to receptive vocabulary, and it was unclear also as to why. It may be that even though teachers were able to include children's home language in the classroom, they were mandated to use a very didactic and teacher-centered curriculum. Perhaps more child-centered instruction would have allowed for more elicitation of English vocabulary. Nonetheless the lack of English expressive vocabulary in the classroom seemed like a missed learning opportunity for children to develop this critical academic skill.

When I followed up on these observations with the teachers, one of them explained that despite the heavy use of Spanish in the classroom, English played a prominent role in many

academic activities for Spanish-speaking DLL children because 'at the end of the year I hope all the children will understand English because they are going to kindergarten all in English.' Since most of the kindergartens that these Head Start children will attend predominantly use only English, it was the goal of these Head Start centers to ensure that the children were ready for such instruction. Thus, the teachers incorporated a great deal of English in their classrooms in order to conform to these educational expectations of DLL children. Future research can further explore why teachers of Spanish-speaking DLL children use Spanish in some academic domains more than others and why Spanish tends to be incorporated in activities that promote receptive but not expressive vocabulary.

The use of English for the majority of classroom academic activities highlights the effortful balance between providing adequate exposure and learning opportunities in English and fostering Spanish-speaking DLL children's home language. The difficulty ensuring this balance was expressed by many Head Start teachers nationwide as they reported struggling how to best promote DLL children's language acquisition, as well as how to best to support their transition out of the Head Start program (U.S. DHHS, 2008; Zepeda et al., 2011). Results from this study indicated that the teachers I observed navigated these tensions well with fluidity of language integration. Teachers used Spanish to promote English oral language across multiple developmental domains in accordance with Head Start's "whole child" model and to help nurture the home-school partnership, but they also used a great deal of English to adequately support children with the English language demands of kindergarten by helping them to overcome language barriers. Such a balance can hopefully be a model to other centers struggling with these issues, particularly when they serve large numbers of Spanish-speaking DLLs.

Significance and Future Directions

The results from this research have possible significance for practice. The local Head Start umbrella agency in this study spends a considerable share of their annual budget hiring bilingual teachers. However, as this study demonstrates, even the teacher who was not fluent in children's home language of Spanish, but knew important words and phrases, was able to incorporate the home language and successfully address the needs of DLL children together with the support of a Spanish-speaking assistant teacher. Therefore, in cases where Head Start cannot hire an appropriate, highly-qualified bilingual teacher, it may behoove the program to teach the new hire key words and phrases that they can use with the DLL students in their class and pair them with an assistant who speaks the language. Hiring such a monolingual English-speaking teacher, however, does not negate the importance of the teacher being able to communicate effectively with parents, which may require a deeper and more detailed knowledge of the home language. In this instance, an assistant teacher who speaks the home language can be particularly helpful as was the case in this study.

Moreover, this study examined classroom use of Spanish for DLL children in ways that may contribute to their school readiness. Spanish-speaking DLL children accounted for about 85% of all the total enrolled children at this umbrella Head Start agency, and in the U.S. as a whole, the majority of DLLs come from Spanish-speaking homes (García, 2012). The Spanish language is ubiquitous as Latinos are the fast-growing population in the U.S. Such a substantial majority minority population allows institutions such as ECE centers and schools to have the language resources and infrastructure to accommodate the language needs of these children, particularly because parents of current or former Head Start children make up close to 25% of all

Head Start staff and Spanish-speaking DLL families account for almost 40% of all Head Start participants (U.S. DHHS, 2014).

This may not be the case with other language minority groups. Although Spanish-speaking DLL children were the vast majority of the Head Start participants at this umbrella agency, there was also a considerable Asian population, which was very diverse and included Vietnamese, Korean, Hmong, Chinese, and Filipino children. The classrooms I observed had very few of these children, and it would be interesting to see how Head Start accommodated these home languages, particularly because they are not as similar as Spanish is to English. Would it be possible, for example, to teach an English-speaking teacher the same key words and phrases to communicate effectively with other DLL children and parents or to solely rely on an assistant teacher for translation? Future work can observe these types of classrooms to gain insight into how centers incorporate home languages that are less common. Interviews with center directors indicated this was possible, though again, it is still unclear how this actually occurs day-to-day.

Lastly, it is important to acknowledge that although the centers I observed tried to be mindful in incorporating the home language in ways that truly respected the family's culture and language, underlying this instruction was the presumption that children would become sufficiently fluent in English, and the expectation was that the DLL children would learn English successfully. During my observations and in my discussions with the teachers and directors, there was no mention of the benefit of instructing in Spanish for the few English-only speaking children in the class, or how this might possibly enable them to learn key Spanish words as well. True dual-immersion programs in Spanish and English do exist in Head Start, such as the East Harlem Bilingual Head Start program. However, the centers I observed were not among them.

Future work can examine how these dual-immersion centers incorporate Spanish when it is considered on equal footing with English.

In sum, this study used exploratory observations to investigate how Spanish was supported day-to-day in ECE classrooms and how it may have possibly contributed to Spanish-speaking DLL children's school readiness. Consistent with bioecological theory (Bronfenbrenner & Morris, 2006) as well as prior research in this area (Carlo et al., 2004; Chang et al., 2007; Collins, 2010; Lugo-Neris et al., 2010), the findings reveal that Spanish was quite deliberate in Head Start classrooms and was used to promote English oral language skills of receptive vocabulary and comprehension across multiple domains in line with Head Start's "whole child" model of development. Given that oral language is one of the key building blocks of academic competence and particularly for DLL children (Yesil-Dagli, 2011), the constant incorporation of Spanish at each site across domains seemed to help solidify DLL children's understanding of English in ways that may prepare them sufficiently for kindergarten.

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Table 3.1

Descriptive Characteristics of the Head Start Teachers and Directors

	Site 1	Site 2	Site 3	Site 4
Ethnicity				
Lead teacher	Latina	Latina	Latina	Caucasian
Assistant teacher	Latina	Latina	Latina	Latina
Center director	African-American	Latina	Caucasian	African-American
Native-Spanish speaker				
Lead teacher	Yes	Yes	Yes	No
Assistant teacher	Yes	Yes	Yes	Yes
Center director	No	Yes	No	No
% of day reported instructing in Spanish				
Lead teacher	75-100%	50-75%	25-50%	0-25%
Assistant teacher	75-100%	50-75%	50-75%	50-75%

Note. The lead teacher at Site 4 indicated she knew key words and phrases in Spanish and her assistant helped translate further for her with children and parents.

Table 3.2

Abbreviated Coding Framework Example of Instances of Classroom Use of Spanish, Site 2

Codes	***Categories***	***Themes***
Emotional caregiving	Non-academic interactions	Promoting national Head Start policies of DLL language acquisition
Classroom labels	Physical classroom space	
Reminders to parents	Interactions with parents	
Parent-child book sharing		
Mealtimes	Health and nutrition routines	
Brushing teeth		
Vocabulary instruction	Academic activities	
Children's play	Non-academic interactions	
Greetings		

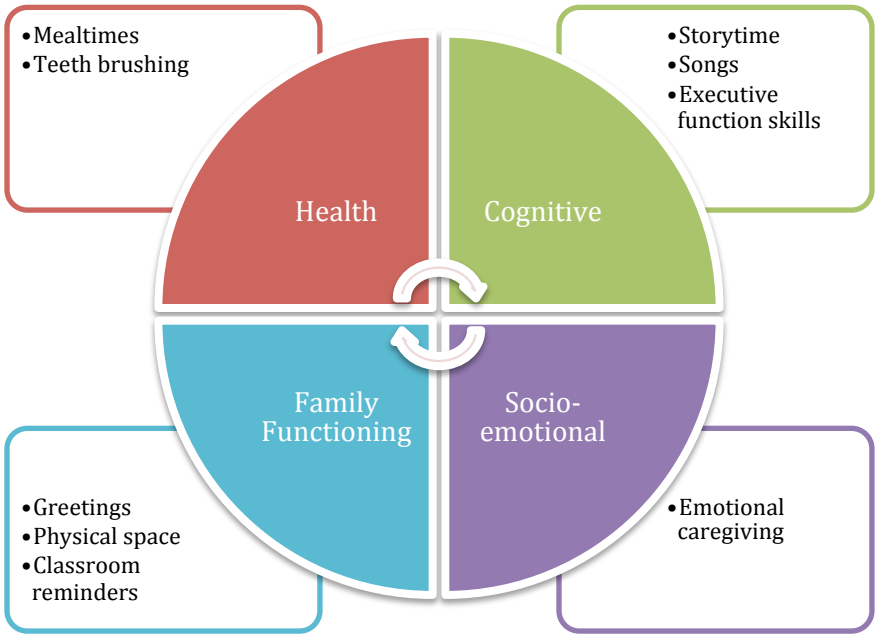

Figure 3.1. The promotion of English oral language skills in accordance with Head Start's "whole child" model of development.

Chapter 4: Key Findings and Future Research

Prior research suggests that Spanish-speaking Dual Language Learners (DLLs) – young children who are learning more than one language simultaneously, their home language and English (Espinosa, 2013) – differentially benefit from quality early care and education (ECE), and in particular from Head Start, compared with children of other subgroups and monolingual-English children (Buysse, Peisner-Feinberg, Páez, Hammer, & Knowles, 2014; Gormley, 2008; Loeb, Bridges, Bassok, Fuller, & Rumberger, 2007; U.S. DHHS, 2010).

Despite the positive impacts of ECE for Spanish-speaking DLLs, however, the literature has not sufficiently investigated the mechanisms underlying this finding, or what may account for these differential benefits. One idea that has received recent attention from researchers and policymakers alike is Spanish language instruction in the classroom. Such instruction may be an important pathway through which DLL children can maximize their learning experiences in ECE as it underscores the importance of supporting children's home language in English-dominant child care programs and promoting the linguistic context in which DLL children are served (Barnett et al., 2007; Espinosa, 2013).

This dissertation provided three separate, independent chapters that read as stand-alone studies. Taken together, they determined factors related to enrollment in ECE arrangements that use Spanish for instruction, the particular role of classroom use of Spanish for DLL children's English academic achievement, the extent to which it increased the effectiveness of Head Start, and the dynamics of classroom use of Spanish in local Head Start centers. In doing so, it addressed important child care issues pertaining to the growing population of low-income, Spanish-speaking DLL families.

Summary of Findings

In Study 1, I examined which child, family, and institutional characteristics predicted enrollment in ECE settings that used Spanish for instruction versus enrollment in settings that did not use Spanish. I found that both in the Head Start Impact Study (HSIS) and in the Head Start Family and Child Experiences Survey, 2009 Cohort (FACES-2009), whether children's first language was exclusively Spanish and whether other DLL families previously attended the ECE arrangement strongly predicted whether children enrolled in centers where Spanish was used for instruction. In contrast, several additional salient sociocultural factors pertaining to Spanish-speaking DLL families such as maternal recent immigration status and child's proficiency with English were not significant predictors of enrollment in child care centers that instructed in Spanish.

Next, in Study 2, I tested whether there were main effects of Spanish instruction for Spanish-speaking DLL children's English early academic skills using both the HSIS and FACES-2009, and whether Head Start was differentially beneficial based on such use using the HSIS. Somewhat surprisingly, Spanish language instruction in Head Start was positively associated with English receptive vocabulary skills in both HSIS and FACES-2009. In regressions that took advantage of the experimental variation in random assignment to Head Start, Spanish-speaking DLL children instructed in Spanish in Head Start had significantly higher English receptive vocabulary scores than either DLL children in Head Start who were not instructed in Spanish or DLL children in the control condition. There was no such positive association in either dataset for early literacy or early math skills; there appeared to be no added benefit to instructing DLL children in Spanish on these skills though it also did not compromise their performance.

Lastly, in Study 3, I conducted observations in four local Head Start classrooms to explore when the home language of Spanish was used in the classroom and how it may have possibly contributed to DLL children's school readiness skills. Results from inductive analysis revealed that Spanish was used to help promote English oral language skills in accordance with Head Start's "whole child" model of development. Embedded throughout the domains of cognitive, socio-emotional and health development, as well as family functioning, Spanish was used to directly translate from English both key, established vocabulary and when introducing new target vocabulary as well as for loose, contextual translations that conveyed global meaning and seemed to model for children how to switch back and forth between languages. Spanish was also used during daily routines and to communicate effectively with parents.

Key Lessons Learned

These three independent studies addressed the overarching theme of Spanish use in Head Start classrooms and whether such use was related to Spanish-speaking DLL children's English school readiness skills. Several key findings emerged across the studies; each is described below.

Spanish use in Head Start is quite deliberate. Results from all three studies showed that classroom use of Spanish seems quite deliberate in Head Start. In the national data, over 60% of teachers reported using Spanish for instruction in their classroom, as did each of the four lead and assistant teachers I observed in local classrooms, despite one them not being a native Spanish-speaker. This indicates that centers overall were responding well to national Head Start mandates to incorporate and support children's home language in the classroom (U.S. DHHS, 2008).

Further, because Spanish-speaking DLL families tended to cluster in the same centers in both HSIS and FACES-2009 as well as in the local Head Start umbrella agency, programs

seemed generally responsive to the surrounding population, had better language capacity to serve Spanish-speaking DLL families, and hired teachers who were able to use the home language of Spanish for classroom instruction, which converges with prior research (Vesely, 2013; Ward, LaChance, & Atkins, 2011). These sentiments were echoed in interviews with center directors in Study 3, who reported hiring teachers based on the language needs of the surrounding community.

Spanish instruction uniquely impacts DLL children's English receptive vocabulary skills. Results from Study 2 indicated that Spanish language instruction in Head Start was positively associated with English receptive vocabulary skills, with children who attended Head Start and were instructed in Spanish having the highest English receptive vocabulary skills. Results from the exploratory observations in Study 3 similarly revealed that Spanish was used to promote English receptive vocabulary and comprehension frequently in the classroom across multiple developmental domains. Such deliberate instruction in Spanish for English oral language skills in local classrooms may be a key reason why there was a benefit in the national data to instructing DLL children in Spanish for English receptive vocabulary skills.

Perhaps when teachers used Spanish for instruction, such translation helped children better understand the meanings of English words, expanding their English vocabulary. In addition, hearing more language generally and in both languages may have promoted better oral language skills overall through conceptual understanding independent of the language in which it occurred (Pearson, 1998). Further, the constant use of both Spanish and English across domains seemed to help solidify DLL children's understanding of English oral language in local Head Start classrooms by helping them to overcome their limits with the English vocabulary.

The added benefit of instructing DLL children in Spanish does not appear to extend to other academic domains. The positive impacts of Spanish instruction did not appear to extend to other academic domains such as early literacy or early math in either HSIS or FACES-2009. In fact, in local Head Start classrooms, most other academic instruction took place entirely in English, even in instances where phonemically Spanish and English are very different, such as with the letter J. Failure to highlight different phonemes across languages may be a reason why in the national data there was no benefit to instructing DLL children in Spanish on early literacy. Alternatively, perhaps instructing children in Spanish was not necessary to promote early literacy due to the high degree of cross-linguistic transfer in areas such as phonological awareness and letter-word knowledge (August & Shanahan, 2006; Castro, Páez, Dickinson, & Frede, 2011; Dickinson, McCabe, Clark-Chiarelli, & Wolf, 2004; Rinaldi & Páez, 2008). That is, because of the likelihood of cross-linguistic transfer in these key literacy areas, and given that many DLL children likely have a high degree of exposure to English before coming to Head Start from sources like television and media even if they use Spanish exclusively in the home, there was no added benefit for the teacher instructing the children in Spanish on these English outcome domains.

Spanish-speaking DLL parents play a special role in Head Start. The results from this dissertation underscored the important role that DLL parents play in Head Start, as first and foremost there were social influences in child care enrollment decisions particularly among these families. Consistent with prior research (Gordon, Colaner, Usdanksy, & Melgar, 2013; Halgunseth et al., 2013; Miller, Vortruba-Drzal, & Coley, 2013; Vesely, 2013; Ward et al., 2011), parents were more likely to send their children to a center if it served higher proportions of DLL children and providers spoke their children's first language as many DLL parents desired

a linguistically-matched ECE arrangement. The importance of including parents was also apparent in local Head Start classrooms as all communications and reminders to parents were in both English and Spanish, and teachers reported on children's progress in both languages. According to the center directors, the bilingualism promoted by Head Start helped foster a close parent-caregiver connection regarding the child because the majority of the parents served by the local Head Start umbrella agency spoke only cursory English, and therefore they relied on the teacher translations into Spanish.

Future Research

The findings from this dissertation demonstrated that properly incorporating DLL children's home language in the classroom is positively associated with certain English school readiness skills and that many families enroll their children in centers with a linguistic match. Yet many questions remain regarding how to best educate DLL children, with several areas ripe for future research. First, many teachers in the national data and in the local classrooms were able to speak children's home language. The one teacher in Study 3 who was not a native Spanish speaker knew enough important key words and phrases in Spanish to successfully address the needs of the DLL children in her class together with an assistant teacher who was a native speaker. It is not known, however, how well such a classroom arrangement would work with languages other than Spanish. The majority of DLLs come from Spanish-speaking homes (García, 2012), and the Spanish language is ubiquitous as Latinos are the fastest-growing population in the U.S. Such a substantial majority minority population allows institutions such as ECE centers and schools to have the resources and infrastructure to accommodate the language needs of these children. Future studies can observe classrooms that cater to other language groups to gain insight into how centers incorporate home languages that are less common, and

further how to best help teachers who do not speak the home language when it is not as similar as Spanish is to English, such as with Asian or Middle Eastern languages.

Second, much of this dissertation focused on teachers using the home language to help DLL students acquire English skills. It is unclear, however, how peer effects influence this process and how children who speak different languages communicate with each other. It was apparent from the classroom observations that DLL children were able to switch back and forth between their home language and English depending on whether the person they were speaking to understood the home language as well as how comfortable they felt using English. Yet it is not known if monolingual English-speaking children are able to understand or possibly even pick up aspects of the native language of the DLL children in classrooms with large proportions of DLL children. Future research can examine the benefits of instructing in Spanish for the monolingual English-speaking children in the class, and how children learn to communicate with each other despite speaking different languages. Of particular interest would be studying the role of monolingual English children for DLL children's English language acquisition and the benefits to hearing instruction in another language for monolingual English children.

Finally, the outcomes in this study were limited to widely accepted, standard English academic achievement measures. I chose these outcomes precisely because they were so established, reliable, and available. However, future studies could investigate how classroom use of Spanish affects DLL children's development in a more comprehensive outcome framework. The findings presented here do not preclude possible positive outcomes, particularly in other areas such as behavior and social skills. Prior research has found that DLL children may be at higher risk for social problems because they lack the language skills necessary to communicate with their teacher and peers (Garnica, 1983; Nemeth & Brillante, 2011; Spomer & Cowen,

2001), yet teachers' support of children's home language allowed for closer teacher-child relationships and better social skills for DLL children with them being less likely to be the victims of aggression, bullying, or teasing by their peers (Chang et al., 2007). Further, future research can also examine the effects of Spanish language instruction on Spanish outcomes, which was not possible in this dissertation, given that previous studies found benefits to instructing children in Spanish on Spanish outcome assessment measures (Barnett, Yarosz, Thomas, Jung, & Blanco, 2007; Burchinal et al., 2016; Durán, Roseth, & Hoffman, 2010; Páez, Tabors, & Lopez, 2007).

Implications for Practice and Policy

This dissertation has several implications for practice and policy about educating the growing numbers of Spanish-speaking DLL preschoolers. First, the findings imply that centers can respond successfully to Head Start mandates to support DLL children's home language and provide services to families in culturally responsive ways (U.S. DHHS, 2008) through increased bilingual teacher and staff hiring, classroom language supports, and supplementing existing curricula to include the home language. For example, because classroom use of Spanish was shown to benefit Spanish-speaking DLLs on some English early academic skills, then Head Start centers should make a concerted effort to hire more highly-qualified bilingual teachers and provide support for teachers to include the home language within existing curricula. Although the teacher in Study 3 who was not a native Spanish-speaker was able to incorporate the home language and address the needs of DLL children in her class by using key words and phrases in Spanish, her success hinged on the support of a Spanish-speaking assistant teacher to help with more extensive translations and with communicating effectively with parents. Therefore, in cases where Head Start cannot hire an appropriate, highly-qualified bilingual teacher, it may behoove

the program to teach the new hire key words and phrases that they can use with the DLL students in their class and pair them with an assistant who speaks the language.

Moreover, despite research indicating the differential benefits of ECE for low-income Spanish-speaking DLL children (Buysse et al., 2014; Gormley, 2008; Loeb et al., 2007; U.S. DHHS, 2010), other work indicates that poor access to ECE programs is a major barrier to their participation (Espinosa, 2013; Greenfader & Miller, 2014; Hernandez et al., 2011; Matthews & Jang, 2007). Therefore, because there were social influences in child care enrollment decisions particularly among Spanish-speaking DLL families, the results from this dissertation potentially highlight the importance of centers engaging DLL parents for their children's enrollment and participation in ECE. That is, connecting with parents, who in turn talk to one another, may be an especially effective way for centers to boost enrollment among this group of children who will likely benefit from participation, but historically has had lower levels of enrollment.

Finally, this dissertation showed that adequately capturing classroom language dynamics is a complicated task. Currently, national data sets such as the HSIS and FACES-2009 only have a few dichotomized language variables, which potentially mask wide variation in classroom use. Yet, the observations underscored that classroom language use is quite multi-faceted and complex. There was a continuum in how much teachers reported used Spanish in the classroom, and teachers and children switched back and forth between English and Spanish with ease and fluidity. Given this complexity, it would be beneficial if the national Office of Head Start provided as much hands-on guidance as possible on what it means to support the home language in the classroom and how to provide services to families most effectively. Questions related to content, duration, and intensity of services to DLL families remain only partially answered (U.S. DHHS, 2013), so researchers must work together with policymakers and government officials to

build capacity in these areas in order to improve the state of knowledge about the children and families served by Head Start.

Conclusion

With the vastly growing numbers of Spanish-speaking DLL children in the U.S. and the differential benefits of attending quality ECE, it is important to understand what promotes better academic outcomes for this population. This dissertation aimed to further the field's understanding of the needs of Spanish-speaking DLL children enrolled in Head Start, particularly given their increasing share of total enrollment in Early Head Start and Head Start (nearly 40%; U.S. DHHS, 2014), and how Spanish language instruction contributed to their school readiness. The findings determined two important characteristics pertaining to this growing population that were associated with enrollment in ECE arrangements that used Spanish for instruction. It further found that classroom use of Spanish in Head Start boosted some English academic skills, and that Spanish was particularly used to promote English oral language skills. Future work can continue to make the Head Start program more successful for DLL children and to help provide more effective services to DLL families.

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