THE CATHOLIC UNIVERSITY OF AMERICA

The Relationships Between Home Support For Language And Emergent Literacy In Low-Income Families, Mother's Education And Immigrant Status, And Children's Language And Emergent Literacy Development At Kindergarten Entry.

A DISSERTATION

Submitted to the Faculty of the

Department of Education

School of Arts and Sciences

Of The Catholic University of America

In Partial Fulfillment of the Requirements

For the Degree

Doctor of Philosophy

By

Doyna Illmer-Craciun

Washington, D.C.

2009

Abstract

The Relationships Between Home Support For Language And Emergent Literacy In Low-Income Families, Mother's Education And Immigrant Status, And Children's Language And Emergent Literacy Development At Kindergarten Entry.

Doyna Illmer-Craciun, Ph.D.

Shavaun Wall, Ph.D., Director

Language and emergent literacy skills are important to children's development of school readiness skills (Tabors, Roach, and Snow, 2001), and influence children's ability to learn to read. The latter is key in our literate society, and critical for school success (Whitehurst, & Lonigan, 2002). Poverty reduces children's environmental opportunities that promote language and emergent literacy skills.

The present study is primarily a correlational study, and used quantitative methods to examine the relationships between home support for language and emergent literacy (HSLEL) in low-income families, mother's education and birth status (i.e., US born or Immigrant) and children's language and emergent literacy development at kindergarten entry. The sample for this study consisted of 76 mothers and 76 children.

As a group the children in this sample, especially children of Immigrant mothers, performed below national levels in all measures. Results also indicated that even within this low-income sample, maternal educational attainment was positively correlated with children's language and early literacy skills. In addition, maternal birth status was the strongest predictor of children's receptive vocabulary. Lastly, six specific HSLEL items from the scale were statistically significantly correlated with child outcomes.

The main conclusions of this study are that more study is needed to deepen our understanding of (1) the interplay between maternal characteristics (i.e., mother's education and birth status), and their children's language and emergent literacy skills; and (2) the interplay between maternal characteristics, home support for language and emergent literacy development, and children's language and emergent literacy skills. Finally, findings from this study underscore the need to consider the use of alternative measures to accurately evaluate the skills that children with this sample's characteristics possess prior entry to kindergarten.

The main contribution of this study is the identification of factors that help explain the variability of children's kindergarten entry skills within a low income sample.

This dissertation by Doyna Illmer-Craciun fulfills the dissertation requirement for the doctoral degree in Educational Psychology approved by Shavaun Wall, Ph.D. as Director, and by Michaela Farber, Ph.D., and Kathleen Perencevich, Ph.D., as Readers.

_____
Shavaun Wall, Ph.D., Director

_____
Michaela Farber, Ph.D., Reader

_____
Kathleen Perencevich, Ph.D., Reader

Dedication

I want to dedicate this dissertation to my family, in particular to my husband who endured this whole process with a smile and no complaints.

To Lucas, Esperanza, and Matteo, you are my inspiration.

To my Mom and Dad, for their unconditional love and support.

I love you all.

Table of Contents

List of Tables

Acknowledgements

First and foremost I want to thank my Dissertation Director, Shavaun Wall, Ph.D. I couldn't have done this without your unconditional support, strong commitment, insightful and detailed feedback.

I also want to acknowledge the valuable feedback I received from my readers, Michaela Farber, Ph.D., and Kathleen Perencevich, Ph.D.

Lastly, I want to acknowledge the wisdom and loving support offered by the Faculty of the Department of Education. Particularly, Agnes Cave, Ph.D., Rona Frederick, Ph.D., Merylann Schuttloffel, Ph.D., John Convey, Ph.D., and Frank (Rick) Yekovich, Ph.D. I am grateful to have met you.

CHAPTER 1 – INTRODUCTION

Introduction to the Problem

In 1990 the National Education Goals Panel (NEGP) was created; its premier goal: "*By year 2000 all children in America will start school ready to learn*". Unfortunately, this goal has been harder to achieve than envisioned. Not all children are ready to learn because some children, overrepresented by those growing up in poverty, do not acquire on time the basic skills needed for school entry. School-entry skills are predictive of later school achievement (Alexander, Entwisle & Dauber, 1993; Duncan et al., 2007), most significantly early math and reading skills (Duncan et al.). Consequently, children from low-income backgrounds start kindergarten lacking basic skills for their immediate and future success in school (e.g. Lee & Burkam, 2002), placing them at higher risk of school failure.

Unsuccessful school experiences have dire consequences, including higher risk of dropping out of high school. Dropping out of school limits educational and employment opportunities (Laird, Lew, Debell & Chapman, 2006), increases the likelihood of living in poverty, of receiving welfare (e.g., Laird et al.) and of engaging in criminal activities (Freeman, 1996; Lochner & Moretti, 2004).

For many years, research has shown the pervasive effects of poverty on child development (e.g. Brooks-Gunn & Duncan, 1997), and documented that low-income children lag behind in many areas, including school readiness. Nevertheless, there are

remarkable cases where low-income children do acquire the necessary skills for kindergarten entry, heightening the possibility of future school success. Unfortunately, these cases of success are underrepresented in the literature. Therefore, we don't have a deep understanding of why some children from low-income families succeed where others fail.

Research that has addressed variability within low-income populations usually presents a deficit interpretation of the results. Most studies inform on the negative aspects that accounts for the differences. For example, studies report findings in the following manner: low-income parents rarely read to their children, and do not visit the library frequently (e.g. Wright, Diener & Kay, 2000); minority mothers talk less to their children than do nonminority mothers and are less likely to read to them every day (e.g. Brooks-Gunn & Markman, 2005). When reporting about the children, the same deficit view is presented: children lack basic print concepts (e.g. Wright et al.).

There are some exceptions where researchers mention positive actions that low-income mothers take that explained, in part, children's positive outcomes. Tabors, Roach and Snow (2001) observed that within their low-income sample, mothers who scored high in Home Support for Literacy[1] proactively seek opportunities to secure books for their children, either by searching for inexpensive books in the grocery store, or by asking

[1] Home support for literacy is a measure of quantity of books owned, frequency of reading, and variety of reading activities. Sample questions:

- Do you read to your child? Daily? (How often?)
- Does anyone else read to your child? (How often?)
- How many children's books do you own?
- Do you get books from the library?
- Do you get books from a bookstore?
- Do you read anything else with your child? (Funnies, Catalogs, children's magazines, newspapers)

relatives to give a book as a present for the child. Many families also participated in the school book club and made use of the local library. Securing books for the child, however, did not suffice. In order to help children prepare for kindergarten, book access had to be paired with taking time to read and discuss the book and other topics. In this regard, Tabors et al. found that children who had acquired higher-level skills, had been exposed to an environment that was characterized by "interesting talk, with lots of new words, and literacy activities such as frequent and varied book reading with different people" (p.136).

Understanding successful experiences within low-income populations helps illustrate what works for them within their unique living experiences. This approach enables us to find ways to strengthen and replicate these successful experiences with similar families. If so, children from low-income families may start their first day of school better prepared. This enhances their chances of more positive achievement patterns, reduces the likelihood of school failure, and decreases the probability of dropping out of school. In sum, children who start kindergarten ready to learn and ready for school, are more likely to follow positive achievement patterns that lead them to the completion of their education, enabling them to join a more skilled workforce, propelling the economy of the country.

According to Dickinson, McCabe, and Essex (2005), language plays a pivotal role in literacy development and early reading. At the same time, language and literacy skills influence children's later school readiness related abilities (Tabors, Roach, & Snow, 2001), including children's ability to learn to read. "Learning to read is a key milestone

for children living in a literate society. Reading skills provide a critical part of the foundation for children's academic success" (Whitehurst, & Lonigan, 2002, p.11). As reading material increases in difficulty, the role of basic language and literacy skills becomes particularly important in enabling the individual to understand text (NICHD Early Child Care Research Network, 2005; Snow et al., 1998). An individual can learn to read or write at any point in life, as many worldwide literacy programs can attest. The point is "that schools provide an age-graded rather than skills-graded curriculum in which early delays are magnified at each additional step as the gap increases between what children bring to the curriculum and what the curriculum demands" (Whitehurst & Lonigan, 1998, p.865). Thus, it is of paramount importance that all children enter school with the basic language and literacy skills that will allow them to master reading on time.

Early interactions between mother and child can either foster or hinder a child's development. Early experiences play a pivotal role in brain development, as they provide the foundations for critical skills such as language, reasoning and social skills (Farah et al., 2008; Shonkoff & Phillips, 2002; Thompson, 2001), all important for school success. Farah et al. found that the amount of environmental stimulation experienced when children were 4 years of age was the largest and most significant factor accounting for variance in language ability when the children were 8 years old. Furthermore, language ability at school entry predicts later school achievement, even beyond middle school (Duncan et al., 2007).

The development of language and literacy skills in the early years takes place mainly in the home environment of the developing child. An intimate look at the

everyday activities low-income mothers (or someone else in the family) engage in with their preschool age children, and the language stimulation experienced in the home setting, can help examine the impact that these set of factors have over children's language and literacy skills at kindergarten entry. Maternal characteristics such as socioeconomic status, birth status (i.e., US Born vs. Immigrant) and educational attainment impact the aforementioned factors. Therefore, this study focused on the interplay between maternal characteristics and home support for language and emergent literacy in low-income families to understand children's language and emergent literacy skills at kindergarten entry. Emergent literacy consists of "the skills, knowledge, and attitudes that are developmental precursors to reading and writing" (Whitehurst & Lonigan, 1998; p.848). Thus, this study focused on the literacy skills that "emerge" in the home setting before kindergarten entry without formal instruction.

Inequality already exists at the starting gate (e.g., Lee & Burkam, 2002), mainly as a consequence of "unequal childhoods" (Lareau, 2003). As a group, children growing up in poverty are more likely to experience less rich and stimulating environments. Consequently, their language and emergent literacy skills are insufficient for the current demands of formal schooling, augmenting the possibility of poor achievement patterns. Therefore, it becomes a priority to understand the relationships between home support for language and emergent literacy, maternal characteristics (e.g., educational attainment and birth status) and language and emergent literacy skills of their children prior to their entry to kindergarten. Only then is it possible to start conceptualizing ways to reduce the achievement gap.

Within a low–income sample, this study examined the relationships between home support for language and emergent literacy, maternal characteristics, and three specific language and emergent literacy skills: (1) receptive vocabulary, (2) the understanding of relational concepts, and (3) ability to recognize and pronounce letters and words.

Factors Related to School Readiness

Children growing up in deprived environments will more likely lag behind in key language and emergent literacy school-entry skills. One of the factors accounting for this gap is the role played by parents at home. In 1995 the NEGP said parents were their child's first teacher, thus putting a strong emphasis on the parental role. In the successive years, school leaders were prompted to take needed action to help parents "get their children ready for kindergarten" (NGPE, 1997, p.7). However, not all parents are ready to parent to the extent that is needed to prepare their children for kindergarten entry. In order to provide a language rich environment, parents need to talk to their children frequently, expand children's language, model correct language use, and use a wide vocabulary. They also need to provide educational toys and books. It is important that parents read and discuss about the book with their children. Educational resources at home depend, in part, on the economic and social resources that parents have. Families living in poverty have to allocate their limited resources to more pressing needs, like securing housing, food and clothing, rather than educational toys and books. In this sense, it is harder for low-income parents to secure a rich and stimulating environment that

supports language and emergent literacy skills. In addition, low-income parents' educational attainment tends to be low, making it more challenging for them to effectively prepare their children for kindergarten. For low-income immigrant parents, the challenge is greater.

Fuligni and Yoshikawa (2003) noted that given the important number of immigrant families in the U.S., and the unique challenges they face as newcomers, "it is imperative for social scientists to understand how this unique group adjusts and becomes integrated into the American society" (p.107). The author of this dissertation acknowledges this need and for that reason parental birth status (i.e., US born vs. Immigrant) is addressed in this study. The following section will describe briefly the significant challenges faced by the children from low-income immigrant families.

Immigrant Population Characteristics

Currently, 12.4% of the U.S. population is immigrant (approximately 35.7 million people) (Bornstein, Deater-Deckard & Lansford, 2007) but that rate is expected to quadruple, reaching up to 51% by year 2030 (U.S. Census Bureau, 2004). This trend presents a challenge for the U.S. educational system, as the number of school-age immigrant children increases rapidly. Nearly 14 million (or 1 out of 5) children under the age of 18 are immigrants or children of immigrant parents (Lollock, 2001), and are at heightened risk to experience poverty compared to non-immigrants (Hernandez, Denton & Macartney, 2007). In addition, children of immigrant parents are at increased risk of being unprepared for kindergarten entry, and consequently, to experience academic

failure and to drop out of school (Lansford, Deater-Deckard & Bornstein, 2007; US Census Bureau, 2005). One of the factors accounting for kindergarten unpreparedness is low parental educational attainment. Educational attainment is particularly low within the immigrant population living in poverty. Hispanic immigrant parents, especially those from Central America, are more likely than any other immigrant group to lack a high-school diploma (Hernandez et al.; Lollock, 2001). Lastly, current statistics indicate that 46,951,595 (or 17.9%) of people aged 5 years and older speak a language other than English at home (Lollock, 2001). Academic skills such as reading and writing rely heavily on language proficiency; thus, school-age children who are not fluent in the mainstream language of instruction often struggle with these academic skills (Pence & Justice, 2008).

Thus, when discussing home support for language and emergent literacy in low-income homes, it seems crucial to also address birth status (US born vs. Immigrant). Nevertheless, research focusing on immigrant families and their children is scarce (Chase-Lansdale, D'Angelo & Palacios, 2007). Most research has focused on immigrant parents' warmth, responsiveness and intrusiveness toward their children. Research is needed to understand the interplay between maternal birth status, home support for language and emergent literacy, and the language and emergent literacy skills at kindergarten entry of the children of immigrant mothers. The present study has that focus.

Independent Variables

The independent variables of this study are two: Home Support for Language and Emergent Literacy, and Maternal Characteristics.

Home Support for Language and Emergent Literacy

This study identifies as "home support for language and emergent literacy" the combination of home factors that past research indicates as supporting language and emergent literacy development. Consequently, the independent variable "Home support for language and emergent literacy" considers the presence of adult-child activities, and presence of language stimulation in the home environment. The presence of adult-child activities refers to the kinds of activities that the primary caregiver or someone else in the family engaged in with the child. The presence of language stimulation is understood as "overt attempts by the parents to encourage language development" (Caldwell & Bradley, 2003, p.39). It also includes the presence of toys and books that facilitate child's language development.

Maternal Characteristics

Maternal Characteristics is an independent variable with two variable concepts: birth status, and educational attainment. For the purpose of this study, birth status has two values: 1) Being US born; or referring to those mothers included in the study who where born in the United States, and 2) Being Immigrant; or referring to those mothers included in the study who where born abroad, in a country other than the United States. Mothers'

educational attainment is defined through mothers' report of having attained different levels of education: Less than High school, High school, and High school plus further training.

Dependent Variables

The dependent variables of this study are three direct measures of children's language and emergent literacy skills relevant for school readiness:

a. Children's receptive vocabulary (The Peabody Picture Vocabulary Test 3rd edition, and Test de Vocabulario en Imágenes Peabody: Adaptación Hispanoamericana).
b. Children's understanding of basic relational concepts (Boehm Test of Basic Concepts-3 Preschool).
c. Children's ability to recognize and pronounce letters and words (Letter-Word Identification test from Woodcock-Johnson Psycho-Educational Battery Revised, and subtest 22, Identificación de Letras y Palabras, from Batería Woodcock-Muñoz Pruebas de Aprovechamiento Revisada).

Summary

In sum, the present study sought to further the understanding of the relationship between home support for language and emergent literacy, maternal characteristics, and children's language and emergent literacy as related to school readiness outcomes within a low-income population. The three language and emergent literacy outcomes are: (1)

receptive vocabulary, (2) understanding of basic relational concepts, and (3) ability to recognize pronounce letters and words.

Given the notable presence of school-age children from immigrant families in the U.S. population as well as within the sample of this study, maternal birth status was considered and analyzed in this dissertation.

Synopsis of the Theoretical Framework

Maxwell and Clifford (2004) argue that school readiness "is about children, families, early environments, schools, and communities. Children are not innately ready or not ready for school. Their skills and development are strongly influenced by their families and through their interactions with other people and environments before coming to school" (p. 42). In this regard, Meisels (1996, 1999) points out that it may be more productive to view readiness as an ecological rather than an individual characteristic. This view is also supported by Tudge and colleagues (2003), who suggest that an ecological perspective helps to simultaneously consider both the individual and the contextual factors, studied over time. Contextual factors are of paramount importance, given that being ready for school is also associated with home/school expectations and with the social and cultural meanings that take place in the communities in which the children grow (e.g. Rimm-Kaufman & Pianta, 2000).

In order to understand how home support for language and emergent literacy and maternal characteristics impact child outcome, it is important to view the child as part of an interacting environment that not only impacts his or her development but also is

influenced by the child. The most immediate and influential factor in children's early childhood years is the nuclear family. Within that setting, the mother has been usually identified as the most salient and pervasive figure. As a result, mother and child are commonly engaged in reciprocal interactions that either foster or hinder her child's development. The child's immediate environment and the interactions within and across it are mediated by culture, socioeconomic status, race/ethnicity and the time in history. For these reasons, the present study's theoretical framework is based on Bronfenbrenner's (1979, 1986) ecological theory of human development.

Bronfenbrenner proposes a model of four embedded and interacting systems that impact human development, characterized by reciprocity. Reciprocity means that the process of interaction between person and environment is two-directional. As such, the theory posits that in order to truly understand human development, one must consider all the systems at the same time. What happens in one system will have an impact on the others. This point is of particular relevance to this study because it suggests that the influence that home support for language and emergent literacy has on children's development in the immediate setting will impact more distal settings, such as school.

The theory will be discussed in more detail in Chapter 2 of this proposal. For now, it suffices to say that this theory is relevant to the present study in that it systematically examines the interacting systems in which the child develops.

The ecological model is composed of five concentric embedded structures – called systems - with its nucleus at the child's level. The systems are: Microsystem, Mesosystem, Exosystem, Macrosystem and Chronosystem. The present study is

interested in the *Microsystem* because it is there where mother-child interaction occurs, and where the foundations for language related school-entry skills are found.

Second, according to this model, the effect of mother and child interactions in the microsystem will be observable when the child transitions to a new setting, such as school, where the acquired skills will be needed. This is considered a *Mesosystem* phenomenon.

Lastly, the *Macrosystem* model stresses that the events within the ecological model will differ from individual to individual as a function of his sociocultural background. Some of the maternal characteristics identified by this study are mothers' socioeconomic status (low-income), educational attainment, race/ethnicity, and birth status (Immigrant versus US Born). Under the ecological theory of human development, these characteristics will reflect different belief systems and lifestyles, which in turn will not only impact child development, but will also influence the nature and extent of the interactions between and across systems.

In sum, Bronfenbrenner's theory of the ecology of human development fits this study's purposes in that it conceptualizes behavior as embedded and expressed in a specific environmental context (Bronfenbrenner, 1979). The theory also highlights the fact that the developmental changes that result from mother-child interactions in the most proximal setting carry forward to more distal settings. As such, it provides a theoretical framework under which it is possible to understand the relationships between home support for language and emergent literacy, maternal characteristics and their children's language and emergent literacy related school readiness outcomes.

Purpose of the Study

Research indicates that when mothers provide a stimulating environment children are more likely to acquire foundational skills for school readiness, such as language and emergent literacy skills. However, there is a dearth of research examining the steps taken by low-income mothers to provide a home environment that supports language and emergent literacy development, and the language and emergent literacy skills of their children at kindergarten entry. Less is known about the specific factors that accounts for the variability in child outcomes within a low-income sample.

Within low-income families, the present study sought to further the understanding of the relationships between home support for language and emergent literacy, maternal characteristics and children's language and emergent literacy related school readiness outcomes.

Research Questions

The research questions for this study ask the following regarding low-income families:

1. Is there a relationship between Home Support for Language and Emergent Literacy (HSLEL) and children's language and emergent literacy development at kindergarten entry?
   - Does HSLEL differ according to mothers' educational attainment?
   - Does HSLEL differ in the homes of Immigrant mothers compared to US born mothers?

- Do children's language and emergent literacy skills differ according to mothers' educational attainment?
- Do children's language and emergent literacy skills differ for those with Immigrant mothers compared to US born mothers?

CHAPTER 2 – LITERATURE REVIEW

Chapter Overview

The purpose of this chapter is to provide a description of the theoretical framework for this study, as well as to review past research regarding the relationships between home support for language and emergent literacy in low-income families, maternal characteristics, and children's language and emergent literacy development at kindergarten entry. This section will conclude with a summary of the reviewed literature and with the hypotheses for this study.

This chapter is organized in the following way:

(1) *Study's theoretical framework*: In this section the theoretical framework for this study will be explained, specifically Bronfenbrenner's (1979, 1986) ecological theory of human development.

(2) *The variables*: First, the independent variables of this study (i.e., home support for language and emergent literacy, and maternal characteristics) will be discussed. Second, the dependent variables of this study will be addressed (i.e. language and emergent literacy outcomes relevant for school readiness). Lastly, literature regarding the relationships between home support for language and emergent literacy, maternal characteristics and language and emergent literacy outcomes relevant for school readiness within a low-income population will be examined. Conclusions and needs for research are included in this section.

(3) *Hypotheses*: In this section the hypotheses of this study will be identified.

(4) Summary of Chapter

Study's Theoretical Framework

To understand how home support for language and emergent literacy impact child language and emergent literacy outcomes relevant for school readiness, it is important to view the child as part of an interacting environment that not only impacts his or her development but also is influenced by the child. In Urie Bronfenbrenner's words, "development is an evolving function of person-environment interaction" (Bronfenbrenner, 1993, p.10). The most immediate and influential factor in children's early childhood years is the nuclear family. Within that setting, the mother has been usually identified as the most salient and pervasive figure. As a result, mother and child are commonly engaged in reciprocal interactions that either foster or hinder child's development. However, the child's immediate environment and the interactions within and across it are mediated by culture, socioeconomic status, race/ethnicity and historical time. For these reasons, the present study's theoretical framework is based on Bronfenbrenner's (1979, 1986) ecological theory of human development.

Bronfenbrenner proposes a model of five embedded and interacting systems that impact human development, characterized by reciprocity. Reciprocity means that the process of interaction between person and environment is two-directional. As such, the theory posits that in order to truly understand human development, one must consider all the systems at the same time. What happens in one system will have an impact on the others. This point is of most relevance to this study because it suggests that the influence that home support for language and emergent literacy, and maternal characteristics may have on child's development in the immediate setting will impact more distal settings,

such as school. In order to understand this proposition, it is necessary to review the basic concepts in the ecological theory.

Basic concepts

This theory is appropriate for the present study because it systematically examines the interacting systems in which the child develops. The model is composed of five concentric embedded structures – called systems - with its nucleus at the child's level (see Figure 1).

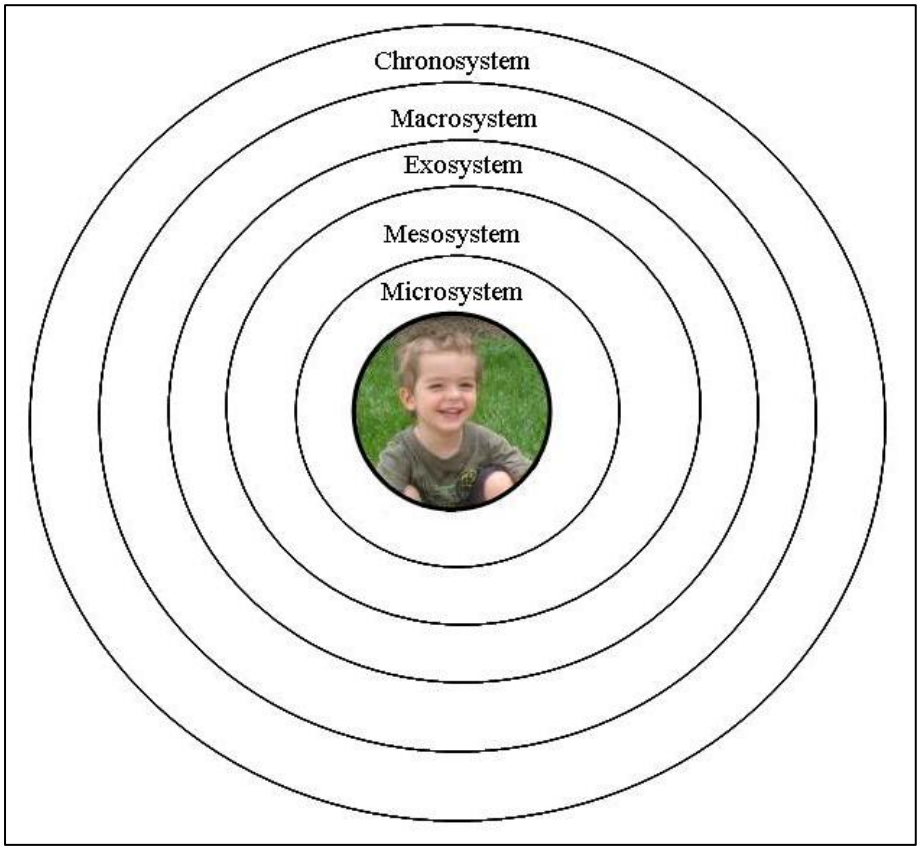


Figure 1. Bronfenbrenner's Ecological Theory of Human Development

The systems are: Microsystem, Mesosystem, Exosystem, Macrosystem and Chronosystem. Bronfenbrenner (1979, 1986) conceptualized them as follows:

1. *Microsystem*: The most proximal structure to the child is the *microsystem*. It is in the Microsystem that the most direct interactions with parents, teachers, and peers take place.
2. *Mesosystem*: Involves relations between microsystems or connections between contexts.
3. *Exosystem*: Is involved when experiences in another social setting – in which the individual does not have an active role – influence what the individual experiences in an immediate context.
4. *Macrosystem*: The culture in which individuals live.
5. *Chronosystem*: The patterning of environmental events and transitions over the life course, as well as socio-historical circumstances (Santrock, 2004).

Microsystem

Bronfenbrenner (1979) conceptualized the microsystem as "a pattern of activities, roles, and interpersonal relations experienced by the developing person in a given setting with particular physical and material characteristics" (p.22). In the microsystem we encounter the most basic unit of analysis, which in Bronfenbrenner's words is called a "*dyad*, or two-person system" (p. 5; emphasis in original) and it is characterized by reciprocal interactions. The most broadly researched two-person system is the mother-child, and this study has that focus. The concept of reciprocity in mother-child

interactions underscores the fact that both members of the dyad undergo change simultaneously.

This study is interested in the microsystem because it is there where mother-child interaction occurs. Mother-child interactions are embedded in the home support of language and emergent literacy construct because the construct addresses (a) the everyday activities low-income mothers (or someone else in the family) engage in with their preschool age children, and (b) the language stimulation experienced in the home setting (in which the mother plays a crucial role).

Mesosystem

Going from the center out, the system that follows the microsystem is the *mesosystem*. While the microsystem is the most proximal setting containing the subject, the mesosystem "comprises the interrelations among two or more settings in which the developing person actively participates (such as, for a child, the relations among home, school, and neighborhood peer group; for an adult, among family, work, and social life)" (Bronfenbrenner, 1979, p.25). Consequently, the mesosystem is a "system of microsystems" (p.25).

Under this theory, how competent a given environment (e.g. home) is in efficiently functioning as a context for development, depends heavily on the "existence and nature of social interconnections between settings, including joint participation, communication, and the existence of information in each setting about the other"

(Bronfenbrenner, 1979, p.6). Thus, the mesosystem, as the context in which transition to kindergarten can be found, pertains directly to this study.

The ecological principle of reciprocity and interconnection estates that the events taking place in one context will have an impact in the following setting when the individual transitions to it. Furthermore, the theory proposes that developmental effects may not be manifested within the same setting where it occurred but rather developmental change can only be appreciated and observed at the time of transition to a new setting (Bronfenbrenner, 1979). Hence, theoretically, home support for language and emergent literacy, and maternal characteristics will determine the kinds of interactions that occur between mother and child in the microsystem. The effect of this interaction should be observable when the child transitions to a new setting, such as school, where the acquired skills will be needed.

The conceptualization of the Mesosystem also underscores another aspect relevant to kindergarten entry. Bronfenbrenner (1979) suggested that especially important to the process is the discussions about and communication with the future school. The author of this study acknowledges the importance of inter-setting communications and the impact that they may have in the pathways to school entry. However, it is beyond this study's scope to analyze the extent to which maternal contact with the future school shape the kinds of activities mothers engage in with their children at home.

Exosystem

More distal to the child is the *exosystem*. The child is not directly involved with this system. However, events in the exosystem "affect, or are affected by, what happens in the setting containing the developing person" (Bronfenbrenner, 1979, p.25).

An example of exosystem that is related to this study is the case of national policies. Some individuals in this study were drawn from a sample of subjects that participated in Early Head Start. At the policy level, one of the goals of Early Head Start (EHS) is to promote parental involvement and child well being. This is achieved, in part, by providing educational materials and opportunities to the parents to better care for their children. Hence, some of the children in the present study may have been indirectly affected by national EHS policies that encouraged parents to modify their parental behavior in a way that would be developmentally more beneficial for the target child.

Another example of the interaction between proximal systems with the exosystem is the Family/Work exosystems. Vernon-Feagans, Odom, Pancsofar, and Kainz (2008) stress the importance of considering parental work context in readiness studies. The authors argue that workplace characteristics, such as employer support of families with children, and regular and predictable work schedules have an impact in school readiness. The case is presented with the following example: "parents who work unpredictable and variable work schedules that do not match the school hours not only may have less time to spend with their children at home but may be unlikely to be involved in school because of work schedules" (pp. 69-70). Thus, not only interactions in the microsystem have an

impact over children school readiness but also the interactions between the Microsystem and the Exosystem.

Also distal to the child is the community and neighborhood in which the child is growing up. Neuman and Celano (2001) found important differences in access to print between low-income and middle-income communities. For instance, low-income neighborhoods have school libraries with fewer and lower-quality books, and are open fewer days than school libraries of middle-income neighborhoods. The same applies to public libraries in low-income communities. Furthermore, public libraries in low-income neighborhoods have fewer books per child than public libraries in more affluent neighborhoods and have more limited nighttime hours. In addition, low-income neighborhoods were found to be less likely to have welcoming spaces that promoted and supported reading activity in public spaces. Vernon-Feagans, et al (2008) and Neuman and Celano (2001) research underscore the importance of considering extra-familial elements to understand school readiness.

One last example that also illustrates ecological transitions is constituted by the child who transitions to kindergarten. School entry transforms the Exosystem into Mesosystem (Bronfenbrenner, 1979).

Macrosystem

It could be argued that the *Macrosystem* has the effect of an umbrella under which the ecological structure exists. This structure “refers to consistencies, in the form and content of lower-order systems (micro-, meso-, and exo-) – that exist, or could exist, at

the level of the subculture or the culture as a whole, along with any beliefs systems or ideology underlying such consistencies" (Bronfenbrenner, 1979, p.26).

What this means is that the events within the ecological model will differ from individual to individual as a function of his or her sociocultural background. Some of the maternal characteristics identified by this study are mothers' socioeconomic status (low-income), race/ethnicity, and birth status (Immigrant versus US Born). Under the ecological theory of human development, these characteristics will reflect different belief systems and lifestyles, which in turn will not only impact child development, but will also influence the nature and extent of the interactions between and across systems.

Chronosystem

Lastly, the *Chronosystem* model "makes possible examining the influence on the person's development of changes (and continuities) over time in the environments in which the person is living" (Bronfenbrenner, 1986, p.724). In other words, the concept of Chronosystem enables the understanding of the cumulative effects of developmental processes. That is, it helps elucidate how developmental change that occurred in the past is manifested or can be observed in the present.

Longitudinal studies are best suited to illustrate the concept of Chronosystem because they allow the examination of parental behavior overtime. The present study acknowledges that mother-child interactions may change as the child develops new skills, matures and transitions from one context to the next. It also acknowledges the cumulative effect that home support for language and emergent literacy, and maternal characteristics

may have over the five years prior entry to kindergarten. However, this analysis is beyond the scope of this study.

In sum, Bronfenbrenner's theory of the ecology of human development fits this study's purposes in that it conceptualizes behavior as embedded and expressed in a specific environmental context (Bronfenbrenner, 1979). The theory also highlights the fact that the developmental changes that result from mother-child interactions in the most proximal setting carry forward to more distal settings. As such, it provides a theoretical framework under which it is possible to understand the relationships between home support for language and emergent literacy in low-income families, maternal characteristics, and children's language and emergent literacy development at kindergarten entry.

The Variables

The next section presents the variables being examined in this study. First, the independent variables of this study (i.e., home support for language and emergent literacy, and maternal characteristics) will be discussed. Second, the dependent variables of this study will be addressed (i.e. language and emergent literacy outcomes relevant for school readiness). Lastly, literature reviewing the relationships between home support for language and emergent literacy in low-income families, maternal characteristics and children's language and emergent literacy development at kindergarten entry will be examined. Conclusions and needs for research are included in this section.

Independent variables: Home Support for Language and Emergent Literacy, and Maternal Characteristics

Early experiences play a pivotal role in brain development as they provide the foundations for critical skills such as language, reasoning and social skills (Farah et al., 2008; Shonkoff & Phillips, 2002; Thompson, 2001). Early experiences are interdependent with the environment in which they occur. Likewise, there is interdependence between the environment and the developing child. In this regard Bronfenbrenner (1993) observes that:

> "It is a first axiom of the ecological paradigm that development is an evolving function of person-environment interaction. It is a second axiom that, ultimately, this interaction must take place in the immediate, face-to-face setting in which the person exists, what I have referred to as the *microsystem.*" (Italics in original, p.10)

It is under this theoretical framework that the present study examined the everyday activities low-income mothers (or someone else in the family) engaged in with their preschool age children, and the language stimulation experienced in the home setting. More elegantly, this study asked, "What is the nature of the interactive developmental processes occurring at this, most proximal level of the environment?" (Bronfenbrenner, 1993, p.10).

In order to understand the early experiences occurring in the most proximal setting of child development, it is necessary to refer to the concept of "proximal processes". Bronfenbrenner and Morris (2005) define proximal processes under the following proposition:

> "Especially in its early phases, but also throughout the life course, human development takes place through processes of progressively more complex reciprocal interaction between an active, evolving biopsychological human organism and the persons, objects,

> and symbols in its immediate environment. To be effective, the interaction must occur on a fairly regular basis over extended periods of time. Such enduring forms of interaction in the immediate environment are referred to as the *proximal processes*" (Italics added, p.797)

Some of the routine activities parents engage in with their children, like playing and engaging in learning situations, constitute an example of "enduring patterns of proximal processes". As children develop, the interaction between child and parent becomes progressively complex, allowing children to increasingly become "agents of their own development, to be sure only in part" (Bronfenbrenner & Morris, 2005, p.797).

Although the child's role in his or her own development cannot be overlooked, it is necessary to underscore the influential role of the parent. Bronfenbrenner and Crouter (1983) noted that the exchanges between parent and child in the early years depend in great part on the parent's "greater knowledge and ability to structure the nature of the child's experience, even in the parent's absence". In this regard, the present dissertation focused on the effects of the "proximal environmental influences" over child development that emanated from "(…) objects, and persons in the immediate face-to-face setting" (Bronfenbrenner, 1988). In particular, this study focused on the extent to which mothers made available to their children certain objects and activities (e.g. educational toys, reading materials) that promoted developmental competence in language and emergent literacy related school-entry skills. For the purpose of this study, the term "home support for language and emergent literacy" will be used to refer to the everyday activities low-income mothers (or someone else in the family) engaged in with their preschool age children, and the language stimulation experienced in the home setting.

Home Support for Language and Emergent Literacy

Under Bronfenbrenner's bioecological model, there is a clear distinction between *proximal processes* and the *environment* in which they occur, where the "the power of the process varies systematically as a function of the environmental context" (e.g., social class, race/ethnicity) and the characteristics of the developing child (Bronfenbrenner, 1999). Consequently, for purposes of this study, home support for language and emergent literacy constitute enduring patterns of proximal processes while social class and birth status constitute the environment in which these proximal processes occur. Henceforth, the independent variable "Home Support for Language and Emergent Literacy" will be shortened to HSLEL.

Within the vast array of potential proximal processes that impact children's school readiness, this study focused on those proximal processes that are believed to be more strongly associated with language and emergent literacy skills, specifically (a) adult-child activities, and (b) language stimulation.

Language development, precursor for reading and writing, is particularly likely to be affected by poverty. Therefore, a common finding in the research literature is that school-age children from low-income families exhibit reading difficulties and lower reading achievement (Snow et al., 1998; Stipek & Ryan, 1997; Whitehurst, 1997). That is why it becomes critical for parents to read to their children regularly, especially in the preschool years. However, in order to promote school readiness, reading needs to be active. That is, parents need to couple reading with language modeling, and encourage

the child to think and to provide information about the story (Payne, Whitehurst, & Angell, 1994; Whitehurst & Lonigan, 1998).

Accessibility and exposure to reading material is generally accepted to facilitate the emergence of language and literacy skills. Hence, lack of children's books in the home has been considered a "stumbling block" for low-income families. As Raikes et al. (2006) explain, accessibility to reading material (i.e. children's books) is usually correlated with bookreading frequency. In other words, in order for bookreading to occur there must be books available to be read. In that regard, Tabors, Roach and Snow (2001) show that even in the face of limited economic, educational and social resources, mothers can take certain actions to make reading material available in their homes. For example, Tabors et al. observed that within their low-income sample, mothers who scored high in Home Support for Literacy[2] proactively seek opportunities to secure books for their children, either by searching for inexpensive books in the grocery store, or by asking relatives to give a book as a present for the child. In addition, the authors found that many families participated in the school book club and made use of the local library. However, obtaining books for the child was not enough. Book availability had to be paired with taking time to read and to discuss the books and other topics in order to really help children prepare for kindergarten. In this regard, Tabors et al. found that children who

[2] Home support for literacy is a measure of quantity of books owned, frequency of reading, and variety of reading activities. Sample questions:

- Do you read to your child? Daily? (How often?)
- Does anyone else read to your child? (How often?)
- How many children's books do you own?
- Do you get books from the library?
- Do you get books from a bookstore?
- Do you read anything else with your child? (Funnies, Catalogs, children's magazines, newspapers)

had acquired higher-level skills had been exposed to an environment that was characterized by "interesting talk, with lots of new words, and literacy activities such as frequent and varied book reading with different people" (p.136). In addition, mothers who used a smaller percentage of immediate talk and more nonimmediate[3] talk had children with the highest scores on the kindergarten measures of language and literacy skills.

Tabors et al. (2001) inform us about concrete ways in which mothers can secure reading material for their children even in cases with limited access to economic, social and educational resources. In line with Tabors et al. findings, the simple act of reading books to children does not guarantee by itself better language and emergent literacy skills outcomes. Britto, Brooks-Gunn & Griffin, (2006), among others, stress the importance of the timing in shared book reading as well as the quality of the interaction for bookreading to be correlated with child's verbal skills outcomes.

Language development is one of the five readiness dimensions identified by the National Education Goals Panel (Kagan, Moore, and Bredekamp, 1995). However, children from different socioeconomic backgrounds experience a different course of language development, with children from more affluent families outperforming children from low-income families in language measures. Because children do not come into the world knowing a specific language, their language learning process depends on the every day input they receive (Karmiloff & Karmiloff-Smith, 2001). In line with this logic, Hart

[3] *Nonimmediate* talk refers to information that is not immediately visible in the illustrations or the text, it typically involves longer utterances and more explicit, complex language than does the labeling or yes-no questioning that constitutes much of immediate talk (Tabors, Roach and Snow, 2001; p.39).

and Risley (1995) found that richer verbal environment in the home was associated with vocabulary skills in early childhood. Consequently, the authors found a widening gap in vocabulary growth as a function of socioeconomic status across children's first three years of life. By the time children were three years of age, gaps in language development were vast. Children of professional parents had vocabularies that were nearly 50% greater than those of working class children, and twice as large as those of children whose families were on welfare. These findings constitute what became known as the "30 million word gap". Briefly, the 30 million word gap corresponds to the computation made by Hart and Risley (1995) in which they calculated how many words an average child heard in the course of his/her first 4 years of life (that is a 5,200-hour year times 4). Their calculations indicate that by the age of 4, an average child in a professional family heard almost 45 million words; as opposed to an average child in a welfare family who experienced 13 million words (working-class family children heard 26 million words); hence, the 30 million word gap (or 32 million to be exact). Hart and Risley's (1995, 1999) work illustrate the vast socioeconomic differences of early experiences in language development, as well as the magnitude of intervention efforts if we wanted to equalize the early experiences with language of low-income children with that of their more affluent peers.

Poor maternal verbal ability, as well as poor home linguistic environment has been linked to poor child language performance (Oxford & Spieker, 2006). Hoff (2006) suggests that a home environment that provides "a great deal of lexically rich and syntactically complex speech" supports the process of vocabulary building. In this regard,

Hill (2000) identified a series of home characteristics associated with a rich linguistic home environment (all measured by HOME inventory): teaching style, child has three books of his/her own, maternal verbal responding, child gets out of house, mother provides toys during interview, mother provides age appropriate learning equipment and toys, mother encourages developmental advance, mother talks to child, and mother reads to child. Furthermore, early experiences have a pervasive effect that carries on to later years. Farah et al (2008) measured environmental stimulation by using the following subscales from the HOME-EC Inventory: Learning stimulation ("child has toys which teach color," "at least 10 books are visible in the apartment"), language stimulation ("child has toys that help teach the names of animals," "mother uses correct grammar and pronunciation,"), academic stimulation ("child is encouraged to learn colors," "child is encouraged to learn to read a few words"), modeling ("some delay of food gratification is expected," "parent introduces visitor to child"), and variety of experience ("child has real or toy musical instrument," "child's art work is displayed some place in house"). One of the instruments used to measure language ability was the Peabody Picture Vocabulary Test. What the authors found was that the amount of environmental stimulation experienced when children were 4 years of age was the largest and most significant factor accounting for variance in language ability when the children were 8 years old.

Maternal Characteristics

In their literature review, Wasik and Hendrickson (2004) concluded that family characteristics such as culture and ethnicity, parental beliefs, and socioeconomic status

can affect children's literacy and language learning. In addition, the authors found that literacy practices "vary from one family to another, from one culture to another, and within cultures. Despite these differences, literacy practices within the family have a strong and enduring effect on children's language and literacy skills" (p. 169).

Educational attainment

Educational attainment or educational background is often cited as a natural marker for school readiness outcomes. In order for parents to be able to provide enriching experiences for their children, parents need to possess themselves the knowledge and skills they are trying to transmit, or in their absence, have access to resources that can provide these enriching experiences (Bronfenbrenner, 1999). In this sense, educational attainment becomes part of the context of proximal processes.

Literature suggests that maternal characteristics, such as educational attainment, correlate with receptive vocabulary (Pan, Rowe, Spier, & Tamis-Lamonda, 2004), and verbal skills (e.g. Britto, Brooks-Gunn & Griffin, 2006). Likewise, Chall, Jacobs and Baldwin (1990) found that mother's education, among other factors, was the strongest predictor of vocabulary knowledge. According to the Federal Interagency Forum on Child and Family Statistics (2008), mothers with higher educational attainment read more often to their children than mothers with lower educational attainment. The Forum reports that 72% of children whose mothers had at least a bachelor's degree are read to everyday. In comparison, daily reading occurred for only 41% of children whose mothers had less than a high school diploma. Related to this finding, Farkas and Hibel (2008)

report that “mother’s and the father’s educational level are strongly predictive of reading readiness” (p.16).

Hence, educational attainment needs to be addressed when exploring the relationship between Home Support, maternal characteristics and children’s language related school readiness outcomes.

Birth Status

One of the family factors that impact language related school readiness is maternal educational attainment. Educational attainment is particularly low within immigrant populations living in poverty, with Hispanic immigrant parents more likely than any other immigrant group to lack a high-school diploma (Hernandez, Denton, & Macartney, 2007; Lollock, 2001).

Research indicates that minority mothers talk less to their children than do nonminority mothers and are less likely to read to them every day (e.g. Brooks-Gunn & Markman, 2005). Consistently, the Federal Interagency Forum on Child and Family Statistics (2008) reports that white families read more to their children than African American and Hispanic families. In addition, Anderson-Yockel and Haynes (1994) found that the quality of reading differs across ethnic groups. In their study, the authors report that white mothers produced more questions than black mothers (Anderson-Yockel & Haynes, 1994). Farkas and Hibel (2008) found that immigrant and non-English speaking homes, as well as ethnic minority households own fewer books that non-immigrant, non-minority, English speaking households. In the same line, “the children of immigrants are

more likely to be unready in reading, and children from a non-English speaking home have a very much increased chance of falling into this category" (Farkas & Hibel, 2008, p.16).

Nowadays, 12.4% of the U.S. population is immigrant (approximately 35.7 million people) (Bornstein, Deater-Deckard & Lansford, 2007). This number is expected to quadruple, reaching up to 51% by year 2030 (U.S. Census Bureau, 2004). Cultures have many and varied ways of integrating "talking, listening, writing, reading, acting, interacting, believing, valuing, and feeling" (Gee, 2001, p. 35). Furthermore, language and literacy practices vary not only from one cultural group to another (Greenfield & Cocking, 1994) but also within cultural groups (McNaughton, 1996; Neuman, Hagedorn, Celano, & Daly, 1995). Hence, it becomes of paramount importance to address maternal birth status when exploring the impact that maternal characteristics may have over children's language and emergent literacy development at kindergarten entry.

Conclusion and needs for research

Home support for language and emergent literacy (HSLEL), as well as maternal characteristics determines the kind of early experiences children are exposed to prior entry to kindergarten. At the same time, these early experiences have the potential to either promote or hinder kindergarten preparedness. It is necessary to understand the extent to which HSLEL in low-income families and/or maternal characteristics impact children's language and emergent literacy skills prior to kindergarten entry. Furthermore, it is necessary to explore the extent to which it is possible to enhance HSLEL in a way

that it can buffer the effects that growing up in poverty have over their children's development and school preparedness.

Dependent Variables

This study focused on three specific language and emergent literacy school-entry skills: (1) receptive vocabulary, (2) the understanding of relational concepts, and (3) ability to recognize and pronounce letters and words. These skills are considered to be relevant indicators of school readiness. Therefore, it is necessary to address the concept of school readiness to better understand the role that each of these indicators play in kindergarten preparedness.

In this section, school readiness will be divided into four sub-sections: First, a brief introduction of the concept school readiness. Second, the various definitions of school readiness will be discussed. Thirdly, the effect of poverty over school readiness will be reviewed. Lastly, literature addressing school readiness and immigrant population will be addressed. This section will end with some conclusions regarding the current state of school readiness and will identify areas in which research is needed.

Introduction

Very broadly, school readiness refers to a group of academic and social skills a 5 year-old must exhibit in order to be considered ready for school. These set of skills are normative to some extent, as it is expected that all 5 years-olds should be able to have some sense of numeracy (e.g., recognize numbers, count to 10, recognize groups of

objects), some literacy awareness (e.g., identify some letters and rhyming words, identify the beginning of the sound of some words), exhibit certain behavioral skills (e.g., share, follow instructions, pay attention), fine motor skills (e.g., trace a shape, cut with scissors, button up and zip up), and gross motor skills (e.g., bounce a ball). It is also expected that the children will have reached certain developmental milestones (e.g, manage bathroom needs, talk in complete sentences), among others (West, Denton & Germino-Hausken, 2000). In theory, just being a normally developing 5 year-old should open the doors for kindergarten. In practice, this is not the case. Some children, overrepresented by those growing up in poverty, are exposed to deprived environments that hinder their normal development. As such, "unequal childhoods" (Lareau, 2003) create inequality at the starting gate (e.g., Lee & Burkam, 2002). Furthermore, high stakes testing and strong accountability demands are changing the nature of kindergarten and kindergarten entry skills. Consequently, preschool years are becoming increasingly focused in the acquisition of specific static cognitive skills. Nowadays, kindergarteners are expected to have mastered skills at school entry that were formerly expected of first graders. This posits an extra strain for low-income families as parents not always know how to transmit or teach to their children necessary school entry skills. Therefore, low-income parents are often unable to successfully prepare their children for kindergarten entry.

In sum, children growing up in poverty are at risk for poorer child outcomes (e.g. Brooks-Gunn & Duncan, 1997). This is explained, in part, because children growing up in poverty face more risk factors than their more affluent peers. Among the risk factors there is the increased likelihood of having very young, less educated and unemployed

parents; to be growing up in a single parent family and/or in unsafe neighborhoods, attend low-resources schools, and more likely to be recipients of public assistance (Administration for Children and Families[ACF], 2002).

School Readiness Definitions

In 1989 the National Education Goals Panel established Goal 1: "*all children in America will start school ready to learn*" by year 2000. At the time, no clear conceptualization for "ready to learn" was given. Nineteen years after establishing Goal 1, there is still lack of agreement regarding what constitutes being "ready to learn". Defining school readiness is a daunting task, as there is still controversy around the way in which the concept should be conceptualized. Kagan, (1992, 1994) among others (e.g. Lewit, & Baker, 1995), have argued that the statement "*all children in America will start school ready to learn*" involves two different constructs: ready for school and ready to learn. This is one source of discord. Other researchers disagree (e.g., Graue, 2006) as they argue that both concepts are relational and thus, should be determined together. This constitutes a second source of discord. Kagan (1990), on the other hand, identifies conceptual and practical challenges as the main source of discord. Regarding its conceptualization, Kagan argues that readiness is ill-defined and used too differently. The author also suggests that both practitioners and policy makers do not seem to agree about fundamental issues supposedly related to readiness. The practical repercussions of the latter are worrisome, as national programs are created to prepare children for

kindergarten but there is no consensus on what school readiness is. As such, every program stresses different skills that are considered to be necessary for school entry.

School readiness vs. readiness to learn

According to Kagan (1990), school readiness has been conceptualized as a more "finite construct, embracing specific cognitive and linguistic skills" (p. 273). In this regard, school readiness is related to specific curricular domains.

Graue (2006) argues that readiness has been conceptualized as both, academic skills (usually the focus of early childhood intervention programs), but also readiness as "a way of being—a social aspect of being a student in the institution of the school" (p.47). As the author points out, one of the problems with "social readiness" is that it is often considered to be maturational, that is, not taught, and it is a part of development.

Readiness to learn, on the other hand, has been defined as "level of development at which an individual has the capacity to undertake the learning of specific material – usually, the age at which the average group of individuals has the specified capacity" (Good, 1973, in Kagan, 1990, p. 273). Unfortunately, "readiness to learn" conceptualized in this way has not received much support, mainly due to lack of robust measures and empirical data (Kagan, 1990).

Researchers and policy makers do not agree on clear definitions and uses for readiness (either readiness for school or for learning). But they are only one part of the school process. Parents, the major stakeholders, do not seem to be "tuned in" on what readiness is either. In addition, parents seem to attribute higher importance to certain

academic skills when comparing teachers' perceptions of the importance of various factors for (public school) kindergarten. According to the National Center for Education Statistics (NCES, 1998), 2% of kindergarten teachers rated "Can count to 20 or more" as "essential factor for kindergarten", as opposed to 17% of the parents. In relation to knowing most of the alphabet, only 4% of kindergarten teachers rated it as an essential factor, as opposed to 19% of the parents. Likewise, Knudsen-Lindauer & Harris, (1989) report that parents place greater value on academic skills such as reading, writing, and counting. Hence, sometimes, it appears as if there was some form of miscommunication about readiness between parents and teachers (Graue, 2006; Harris & Knudsen-Lindauer, 1988; Knudsen-Lindauer & Harris, 1989). Regardless, literature is not consistent about this point either. For example, Harradine and Clifford (1996) found that teachers, as opposed to parents, value more children's behavior. Moreover, studies such as Kim, Murdock and Choi (2005), as well as Diamond, Reagan and Bandyk (2000), found that there is a disconnection or lack of consistency between what parents consider to be important and the kind of activities they engage with their children.

In 1995, the NEGP presented a more comprehensive definition of school readiness, consisting of five domains that appear to encompass a broader array of skills and dispositions necessary for school entry and preparedness to learn. These five domains are: (1) physical well being and motor development (i.e. health factors, gross/fine motor abilities), (2) social and emotional development (i.e. social skills, self confidence, and the ability to establish stable, caring relationships), (3) approaches toward learning (which refers to characteristics such as curiosity, independence, cooperativeness and task

persistence), (4) language usage (i.e. ability to communicate with peers/adults), and (5) cognition and general knowledge (which refers primarily to general information and problem-solving skills). There are some promising initiatives in line with this approach. For example, the School Readiness Indicators Initiative is a 17-state partnership that strives to "develop a comprehensive set of school readiness indicators to inform public policy for young children and their families" (Rhode Island KIDS COUNT, 2005, p. 10). This kind of initiative is promising because it conceptualizes school readiness as a multidimensional concept, going beyond "what children know", meaning that "children's ability to learn goes beyond cognitive development and includes physical, social, and emotional health as well as general approaches to learning" (Bruner, Floyd & Copeman, 2005, p. vi) .

Conclusions and need for research

In sum, school readiness has many meanings and entails different ideas depending on the research focus of a given study. Sanford DeRousie and Durham (2008) note that multiple conceptions of school readiness are not necessarily a weakness because these "serve to fuel a broader and more complete research agenda within the educational and sociological literature" (p.300). Therefore, it might not be that there is need to come up with a universal definition of school readiness, but rather a need to focus the efforts on understanding the interplay between all the different constructs that impact school readiness. Moreover, what the literature tells us is that consistency is needed between researchers, policy makers, teachers and parents. All stakeholders should be directing

their efforts towards the same horizon. In this regard, parents play a pivotal role. They are their children's first teachers and the ones who can either foster or hinder, through their beliefs and practices, readiness *before* teachers and the school system have a chance to do so.

School readiness outcomes

The previous section discussed school readiness in general. With or without a clear definition of school readiness, a more pressing issue is at stake. There is an urgent need to further understand which school-entry skills are linked to children's later academic achievement, and how can those early skills be strengthened prior entry to kindergarten. Past and current research has identified some early skills that are related to children's later academic achievement. These skills are: (1) receptive vocabulary, (2) the understanding of relational concepts, and (3) ability to recognize and pronounce letters and words. These skills constitute the present study's outcome variables.

According to Dickinson, McCabe, and Essex (2005), language plays a pivotal role in literacy development and early reading. At the same time, language and literacy skills influence children's later school readiness related abilities (Tabors, Roach, and Snow, 2001), including children's ability to learn to read. "Learning to read is a key milestone for children living in a literate society. Reading skills provide a critical part of the foundation for children's academic success" (Whitehurst, & Lonigan, 2002, p.11). As reading material increases in difficulty, the role of basic language and literacy skills becomes particularly important in enabling the individual to understand text (NICHD

Early Child Care Research Network, 2005; Snow et al., 1998). An individual can learn to read or write at any point in life, as many worldwide literacy programs can attest. The point is "that schools provide an age-graded rather than skills-graded curriculum in which early delays are magnified at each additional step as the gap increases between what children bring to the curriculum and what the curriculum demands" (Whitehurst & Lonigan, 1998, p.865). Thus, it is of paramount importance that all children enter school with the basic language and literacy skills that will allow them to master reading on time.

The next section is divided into four sub-sections. The first sub-section will provide definitions for the language and emergent literacy skills measured in this study. The second sub-section will discuss the relationship between poverty and the present study's outcome variables, while the third sub-section will discuss the relationship between Immigrant status and the present study's outcome variables. Lastly, conclusions will be provided and areas in need of research will be identified.

Definitions

Emergent literacy consists of "the skills, knowledge, and attitudes that are developmental precursors to reading and writing" (Whitehurst & Lonigan, 1998; p.848). It is of paramount importance that children enter school with the basic language skills that will allow them to master reading.

In this study, receptive vocabulary, understanding of relational concepts, and ability to recognize and pronounce letters and words are considered components of emergent literacy.

Whitehurst and Lonigan (1998) propose that emergent literacy consists of at least two distinct domains: “inside-out skills (e.g., phonological awareness, letter knowledge) and outside-in skills (e.g., language, conceptual knowledge). These different domains are not the product of the same experiences and appear to be influential at different points in time during reading acquisition (p. 848)”. For example, outside-in skills (e.g., receptive vocabulary) are strongly influenced by home experiences. According to Landry and Smith (2006) outside-in skills are “significantly related to the ability to read by second grade, when demands move from decoding words to reading comprehension” (p.137). Outside-in skills, then, refer to those skills that children need to understand the context in which the writing they are trying to read occurs (Whitehurst & Lonigan, 1998). Inside-out skills (e.g., ability to recognize and pronounce letters and words) are more important for first grade reading demands, when the focus is in decoding words (Landry & Smith, 2006). Thus, inside-out skills “represent children’s knowledge of the rules for translating the particular writing they are trying to read into sounds” (Whitehurst & Lonigan, 1998, p.854)”. In sum, different skills are needed at different points of the learning to read process.

Receptive Vocabulary

Receptive vocabulary, refers to “the number of spoken words that someone can understand” (McGuinness, 2005; p.441). Receptive vocabulary can serve as an indicator of the level of vocabulary acquisition (Dunn & Dunn, 1997). Understanding words is one of two conditions (the other is reading print) necessary “for success in reading ‘grade-

level' books" (Biemiller, 2001), in part because early vocabulary is related in the long-term to reading comprehension in third and fourth grade (Senechal, Ouellette, & Rodney, 2006; Storch & Whitehurst, 2002). As reading material increases in difficulty, the role of basic language skills becomes particularly important in enabling the individual to understand text (NICHD Early Child Care Research Network, 2005; Snow et al, 1998).

Understanding of Relational Concepts (also Basic Concepts)

Basic relational concepts refer to the words used to describe characteristics of people/objects, spatial relationships, time, and quantity. Understanding these concepts enable children to follow directions, classroom routines, and are considered a relevant feature of emergent literacy. All of which are important for language and cognitive development, as well as school success (Boehm, 2001).

Letter-Word Identification

In this study, Letter-Word Identification refers to children's ability to recognize and pronounce letters and words. Whitehurst and Lonigan (1998) found that, among other skills, letter knowledge is "critically important in the earliest stage of learning to read when the focus is on decoding text" (p. 864).

Poverty

Children growing up in poverty face a number of social and economic risks which in turn have a negative impact over children's cognitive development (e.g. ACF, 2002).

School readiness related outcomes, such as receptive vocabulary, the understanding of relational concepts, and the ability to recognize and pronounce letters and words, are some of the areas where the difference between “Haves” and Have-Nots” is visible. For example, data from the FACES 2000 study revealed that children entering Head Start scored “well below national averages” in cognitive assessments such as early literacy and math skills (U.S. DHHS, 2006a). Another study that provides similar data is the Early Childhood Longitudinal study (ECLS). The ECLS is one of the largest longitudinal studies in the country that provides information on children’s early experiences. The birth cohort of the ECLS (i.e., ECLS-B), in particular, presents data for children from birth through kindergarten entry.

The components examined in the ECLS-B study that are relevant to the present dissertation and the kindergarten readiness of pre-school children are language (i.e. receptive vocabulary) and literacy knowledge and skills. The sample is a nationally representative sample (N=14,000) and the children were 48-57 months of age at the time of assessment.

According to the ECLS-B study, children who were 48-57 months of age at the time of assessment, receptive vocabulary scores ranged from 5 to 14 (of a possible range of 0 to 15), with a mean of 8.6, and standard deviation of 2. Children, whose socioeconomic status fell in the lowest 20 percent, had an average score of 7.3. Children in the middle 60 percent scored 8.6, while those on in the highest 20 percent scored 9.8 (Jacobson Chernoff, Flanagan, McPhee & Park, 2007). These figures illustrate that children living in poverty score lower than their more affluent peers in a receptive

vocabulary measure. Similar differences between socioeconomic groups are observable in literacy knowledge and skills scores.

Children were also assessed in literacy knowledge and skills, which included letter recognition, phonological awareness and conventions of print. The possible range was 0 to 37. Children's scores in this sample ranged from 5 to 37 with a mean of 13.2 and a standard deviation of 7. Children, whose socioeconomic status fell in the lowest 20 percent, had an average score of 9.2. Children in the middle 60 percent scored 12.7, while those in the highest 20 percent scored 18.0 (Jacobson Chernoff, Flanagan, McPhee & Park, 2007). These figures illustrate that children living in poverty scored significantly lower than their more affluent peers in overall literacy knowledge and skills.

Differences within

Studies delving into the differences in school readiness between socioeconomic groups abound. There is less research delving into the variations within a particular socioeconomic group. More to the point of this study, there is a dearth of research delving into the variations within low-income population. This may be explained by the fact that children from low-income families are usually considered to belong to a homogeneous group. However, studies such as FACES 2000 (U.S. DHHS, 2006a) report that there is a significant diversity of school-entry skill levels within Head Start children. For example, at time of entry, "the highest quarter of Head Start children were at or above the national average (50^{th} percentile) in early language and number skills, while the lowest quarter of children ranked in the lowest 2 percent of all U.S. preschoolers in

these areas" (U.S. DHHS, 2006a, p. E-2). This initial difference within the sample created differences in the extent to which the children benefited from the program. Children entering Head Start with lower levels of literacy/math knowledge and skills showed greater gains than those that started with higher assessment scores (U.S. DHHS, 2006a). This evidence suggests not only that children from low-income families are not a homogeneous sample but also that there is a need to delve into the reasons why this is as it is.

Immigrants

Immigrant children and/or children of immigrant parents are at heightened risk to experience poverty than non-immigrants (Hernandez, Denton, & Macartney, 2007). In addition, children of immigrant parents are at increased risk of being unprepared for kindergarten entry, and consequently, to experience academic failure and to drop out of school (Lansford, Deater-Deckard, & Bornstein, 2007; US Census Bureau, 2005). Furthermore, 17.9% of people aged 5 years and older speak a language other than English at home (Lollock, 2001). Growing up in a non-English speaking home is considered to be a family risk factor (Brooks-Gunn & Markman, 2005), and it is associated with school readiness. Academic skills such as reading and writing rely heavily on language proficiency; thus, school-age children who are not fluent in the mainstream language of instruction often struggle with these academic skills (Pence & Justice, 2008). In sum, immigrant children and children of immigrant parents are at heightened risk to be

"unready" for school. This is explained, in part, due to the several risks factors associated with belonging to a low-income immigrant group.

Findings from nationwide programs, such as Head Start, and databases as the one from the ECLS-B study, provide a brief look on how immigrant children and children of immigrant parents are fairing in relation to school-entry skills.

The Head Start Impact Study (U.S. Department of Health and Human Services [U.S. DHHS], 2005), as well as the Head Start FACES 2000 study (U.S. DHHS, 2006a) report achievement differences between English-speaking children and "language-minority" children. For example, after one year in Head Start, English-speaking children improved in the areas of vocabulary, pre-writing and pre-reading (U.S. DHHS, 2005). Spanish-speaking children, on the other hand, showed improvements only in the area of vocabulary. Findings from Head Start FACES 2000 study indicate that although language-minority children showed improvement in the area of receptive vocabulary, language-minority children were lagging behind by one and a third standard deviations of the mean score (M=66.7) in vocabulary of their English-speaking peers (U.S. DHHS, 2006a).

Head Start findings are in accord with the ECLS-B study. According to the ECLS-B study, children who were 48-57 months of age at the time of assessment, receptive vocabulary scores ranged from 5 to 14 (of a possible range of 0 to 15) with a mean of 13.2 and a standard deviation of 2. White, non-Hispanic children, had an average score of 9.2; Black, non-Hispanic 8.0, Hispanic 7.4, Asian, non-Hispanic 7.9; American Indian and Alaska Native, non-Hispanic 7.9, and Other, non-Hispanic 9.0 (Jacobson

Chernoff, Flanagan, McPhee & Park, 2007). These figures illustrate that the lowest scoring children are those with a Hispanic background. A similar pattern is visible for children assessed in literacy knowledge and skills, which included letter recognition, phonological awareness and conventions of print. The possible range was 0 to 37. Children's scores in this sample ranged from 5 to 37 with a standard deviation of 7. White, non-Hispanic children, had an average score of 14.2; Black, non-Hispanic 12.0, Hispanic 10.7, Asian, non-Hispanic 17.5; American Indian and Alaska Native, non-Hispanic 9.6, and Other, non-Hispanic 13.8 (Jacobson Chernoff, Flanagan, McPhee & Park, 2007). These figures illustrate a significant gap between minority and non-minority population, especially between American Indian and Alaska Native, non-Hispanic children and their White peers, and between children of Hispanic origin and White children.

Conclusion and needs for research

In conclusion, the literature examined in this section indicates that school readiness is a concept encompassing diverse skills and that has been defined in various ways. There is a need to concert efforts to create a clear and universally used definition of school readiness. However, there is a more pressing need to focus on the specific skills that children need for kindergarten entry that will enable them to follow a positive pattern of school achievement.

More importantly, the literature reviewed not only reveals disparities in school readiness between children living in poverty and children with more social and economic

resources, but also disparities within low-income population. Children from low-income immigrant families are at heightened risk of not being ready for school entry than non-immigrant children. However, immigrant status alone does not explain the difference between these two groups. National representative samples of children from low-income families, like the one presented in the FACES 2000 study, reveal that within a low-income sample there are vast differences; consequently, children benefit differently from the program. This information underscores the need to delve into the variations within a low-income sample. More specifically, there is a need to join the efforts in identifying the sources of the differences that explain why some children from low-income families succeed where others fail.

Relationships between variables: Home Support for Language and Emergent Literacy, maternal characteristics, and language related school readiness outcomes

Under this study's theoretical framework, children's language related school readiness outcomes are interdependent with proximal processes that occur in the child's most immediate setting (i.e. home support for language and emergent literacy) and the environment the child is growing up in (in this study, maternal educational attainment and immigrant status are used as proxy of child's environment). In order to understand the interactions within and among systems, and how it impacts school readiness outcomes, this study needs to provide a definition of school readiness that is congruent with the study's theoretical framework. Vernon-Feagans, Odom, Pancsofar, and Kains (2008), provide a definition that meets this criterion, and most importantly, their

conceptualization of school readiness highlights the role of the family. Vernon-Feagans et al, argue that readiness is

> "a transactional construct from an ecological perspective and is at the intersection of person, process, and context. This puts the definition of readiness not within the child but at the interaction and fit between the child and his/her family and the "readiness" of the classroom/school to teach that child. This fit between the individual and the context results in developmental processes that change over time. Thus, we define readiness by the processes that change as children acquire important school skills in the first few years of schooling. This includes not only the level of skill at school entry (…) but also the slope or growth in those skills over time, as a function of child and family characteristics as well as of classroom characteristics and school context." (p.63).

The authors also provide a good insight of what the interest in school readiness should be:

> "It seems to us that the interest in readiness is not due to the desire to focus on the static skills at school entry, but how those skills interact with many facets of the child's life in understanding his/her learning (…) we are not just interested in the initial skills of children as they enter school. What we are really interested in is the learning of children and how this is a function of various complex systems" (Vernon-Feagans, Odom, Pancsofar, & Kains, 2008; p.63)

It is under this definition and responding to the invitation of understanding children's long life learning as a function of various complex systems that the present study embarked in the task of identifying the relationships between HSLEL in low-income families, maternal characteristics and children's language and emergent literacy skills at kindergarten entry. The following section includes a discussion of the relationships among these factors.

Head Start FACES 2000

Findings from the FACES 2000 study are especially relevant to this study as the sample is a nationally representative sample of low-income children. In addition, the FACES 2000 study looks at normally occurring activities in which parent and child engage, and its relationship with language related school readiness outcomes (e.g., receptive vocabulary and emergent literacy). Parent-child activities are divided into monthly and weekly activities. *Weekly* activities include: reading to the child (how often they read to the child over the past week), telling the child a story; teaching letters, words, or numbers; teaching songs or music; doing arts and crafts; playing toys or games; doing errands; or doing household chores. *Monthly* activities include: visiting the library, shows, museums, and zoos; attending community or sporting events; and discussing family history.

The FACES 2000 study found significant partial correlations between Overall Activities (weekly and monthly activities combined) with Child–Emerging Literacy (r =.15, $p \leq .001$), Monthly Activities with Child–Emerging Literacy (r =.12, $p \leq .001$), Weekly Activities with Child–Emerging Literacy (r =.12, $p \leq .001$), and Weekly Activities with Child–Vocabulary (r =-.08, $p \leq .001$) (U.S. DHHS, 2006a).

The FACES 2000 study concluded that the more activities parent and child did together, the higher the children's emergent literacy scores and better their behavior (U.S. DHHS, 2006c). Weekly activities, in particular, had positive correlations with scores on the social awareness, color naming, one-to-one counting, book knowledge, vocabulary, early math, early writing, and letter identification tasks (U.S. DHHS, 2006a). The study

found racial/ethnic variations in these results. African American children had higher family activity per month and per week, than both White and Hispanic children. White children were exposed to more activities than Hispanic children (U.S. DHHS, 2006a). This finding posits the question: if African American children are engaged in more parent-child activities than White and Hispanic children and if higher frequency and amount of parent-activities produce the better child outcomes, how come White children outperform African American children in all school readiness measures?

Regarding frequency of reading, 74% of Head Start parents reported reading to their child three or more times a week. Parents who read three or more times a week had children who had better receptive vocabulary outcomes (PPVT-III average score of 87), than children of parents who read only 1-2 times or not at all (PPVT-III average score of 84). Parents who read to their children every day had children with and average standard PPVT-III score of 90 (U.S. DHHD, 2006c). Although 74% of Head Start parents read to their children three or more times a week, the FACES 2000 study found that average Head Start children did not show key skills related to emergent literacy. That is, a typical Head Start child could not "answer simple factual questions about a story read to him/her" and did not "know that you go from left to right and top to bottom when reading English text" (U.S. DHHD, 2006c).

Findings of the National Household Education Survey (Nord, Lennon, Liu, & Chandler, 1999) indicate that higher reading frequency (three or more times a week) was related to children exhibiting more emerging literacy skills than children who were read to less often. Also significant were trips to the library, teaching about letters and

numbers, and arts and crafts. Moreover, when home literacy activities[4] were considered together, 43% of the children whose families had engaged in three or more home literacy activities in the previous week were reported to show three or more signs of emerging literacy, compared with 30% of the children whose families reported doing home literacy activities less often (Nord et al.).

Conclusion and needs for research

One of the questions that the FACES 2000 study asked in relation to parent-child activities was "*Do families that are more active with their children have children with better behavior and better cognitive skills?*" The answer to this, as stated above, was yes. The more activities the parents engaged in with their children, the better their children performed in emergent literacy and behavior. Frequency and quantity of parent-child activities provides general information on those combined behaviors that impact school readiness. A more comprehensive approach is needed to better understand what works for whom. Thus, it is necessary to understand what *specific* parent-child activities, and what characteristics of the home environment are related to what *specific* language and emergent literacy related school readiness outcomes, and how these activities, home support and outcomes vary as a function of maternal education and maternal birth status. The present study sought to achieve this goal.

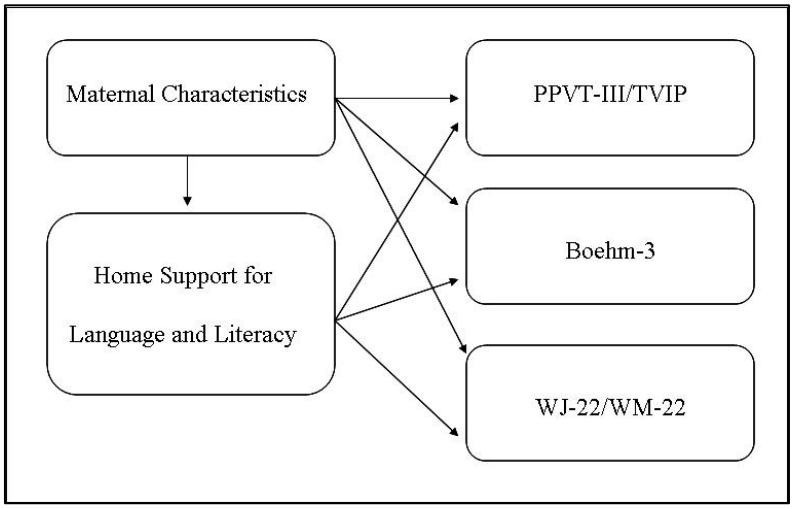
Hypotheses

Bronfenbrenner (1999) proposed that in certain areas, such as behavioral problems, "proximal process has the general effect of reducing, or buffering against, environmental differences in developmental outcome; specifically, under high-levels of mother-child interaction, social class differences in problem behavior become much smaller" (p.7). In other words, enduring patterns of positive mother-child interactions have the power to reduce the negative impact over child outcomes related to living in poverty and belonging to a low-income minority group. In this line, the present study hypothesizes that Home Support for Language and Emergent Literacy (HSLEL) and maternal characteristics will impact child's language and emergent literacy school-entry skills.

Relationship between variables and study's Hypotheses

Figure 2 below illustrate the hypothesized relationships between variables.

Figure 2. Hypothesized relationships between variables



This study hypothesized that within low-income families,

1. There is a significant, positive relationship between HSLEL and children's language and emergent literacy development,
2. The homes of mothers with more education provide significantly greater HSLEL for the language and emergent literacy development of children than the homes of mothers with less education,
3. US born mothers' homes provide significantly greater HSLEL than the homes of immigrant mothers,
4. Children whose mothers have more education score significantly higher in language and emergent literacy development than children whose mothers have less education,
5. Children with US born mothers score significantly higher in language and emergent literacy development than children with immigrant mothers,

Summary of Chapter

This study's theoretical framework is based on Bronfenbrenner's theory of the ecology of human development. This theory is relevant to this study because it conceptualizes behavior as embedded and expressed in a specific environmental context (Bronfenbrenner, 1979). The theory also highlights the fact that the developmental changes that result of mother-child interactions in the most proximal setting carry forward to more distal settings. As such, it provides a theoretical framework under which

it is possible to understand the relationship between HSLEL, maternal characteristics, and children's language and emergent literacy skills at kindergarten entry.

The literature reviewed shows that school readiness has many meanings and entails different ideas depending on the research focus of a given study. Sanford DeRousie and Durham (2008) note that multiple conceptions of school readiness are not necessarily a weakness because it "serve to fuel a broader and more complete research agenda within the educational and sociological literature" (p.300). Therefore, it might not be that there is need to come up with a universal definition of school readiness, but rather a need to focus the efforts in understanding the interplay between all the different constructs that impact school readiness. Moreover, what the literature tells us is that consistency is needed between researchers, policy makers, teachers and parents. All stakeholders should be directing their efforts towards the same horizon. In this regard, parents play a pivotal role. They are their children's first teachers and the ones who can either foster or hinder, through their beliefs and practices, readiness *before* teachers and the school system have a chance to do so.

The relationship between school readiness and the language related and emergent literacy skills outlined in this study, (i.e., receptive vocabulary, the understanding of relational concepts, and ability to recognize and pronounce letters and words) is that these early skills are needed to master reading. The ability to learn to read is of pivotal importance in our literate society, and critical for school success. The literature examined indicates that there is a pressing need to focus on the specific skills that children need for

kindergarten entry that will enable them to follow a positive pattern of school achievement.

More importantly, the literature reviewed not only reveals disparities in school readiness between children living in poverty and children of families with more social and economic resources, but also disparities within low-income population. Children of low-income immigrant parents are at heightened risk of not being ready for school entry than children of non-immigrant parents. However, birth status alone does not explain the difference between these two groups. National representative samples like the one presented in the FACES 2000 study, reveal that within a low-income sample there are vast differences; consequently, children benefit differently from the program. This information underscores the need to delve into the variations within a low-income sample. More specifically, there is a need to join the efforts in identifying the sources of the differences that explain why some children succeed where others fail.

HSLEL as well as maternal characteristics determine the kind of early experiences children are exposed to prior entry to kindergarten. At the same time, these early experiences have the potential to either promote or hinder kindergarten preparedness. It is necessary to understand the extent to which HSLEL in low-income families and/or maternal characteristics impact children's language and literacy development. Furthermore, it is necessary to explore the extent to which it is possible to enhance Home Support in a way that it can buffer the effects that growing up in poverty have over their children's development and school preparedness.

Lastly, the FACES 2000 study posed the following question that relates to the present study: "*Do families that are more active with their children have children with better behavior and better cognitive skills?*" The answer to this, as the data from the FACES 2000 study shows is yes. The more activities the parents engaged in with their children, the better their children performed in emergent literacy and behavior. Frequency and quantity of parent-child activities provides general information on those combined behaviors that impact school readiness. A more comprehensive approach is needed to better understand what works for whom. Thus, it is necessary to understand what *specific* parent-child activities and HSLEL characteristics are related to what *specific* language and emergent literacy school-entry skills, and how these activities and outcomes vary as a function of maternal education and maternal birth status. The present study sought to achieve this goal.

CHAPTER 3 - METHODS

This chapter provides a description of the population and sample of this study, as well as planned instrumentation, and methods for the collection and analysis of data.

Data and Sample

Early Head Start Research and Evaluation Project

For five years (1996-2002), a national contractor (Mathematica Policy Research, Inc.,) and 15 university research teams investigated 17 Early Head Start (EHS) programs nationwide in the national evaluation of EHS programs, the National Early Head Start Research and Evaluation Project (NEHSREP). In addition, university research teams conducted local research "to understand the pathways to change within the particular EHS program studied" (Wall et al, 2006). The Catholic University of America (CUA) in Washington, DC was part of this EHS Research Consortium.

Analytic Sample

The subjects for this study were drawn from CUA local study sample. The original sample for CUA's local study was randomly selected (N=147). Subjects were then assigned to either a comparison group, or to an EHS program in Alexandria, VA. The EHS Center in Alexandria served low-income families who lived within a 10-mile radius of a "suburban strip mall along a major commuter artery" (Wall, Timberlake, Farber et al, 2000; p. 414). At the time, the majority of the families lived in "motels, low-rise

apartment complexes, rental houses, and military-based housing" (Wall et al., 2000; p. 414). Families that applied to the program had to meet three eligibility criteria established by Early Head Start: 1) family income had to be at or below federal poverty-level; 2) the focus child had to be 1 year of age or younger; 3) the family could not be enrolled in similar programs or be receiving similar services.

The sample for the present study consists of 76 mothers and 76 children. The criteria used to select subjects for this study were 2:

i. Mothers answered the National Early Head Start Parent Interview for parents of Pre-K children, and the CUA Local Interview Pre-K Follow-up
ii. Data was available for the assessment of the child when he or she was 4-5 years old

Research Procedures

Design

The present study is primarily a correlational study, and involved collecting existing coded data to determine whether and to what extent a relationship existed between Home Support for Language and Emergent Literacy (HSLEL), maternal characteristics, and children's language and emergent literacy development at kindergarten entry. This study represents a secondary data analysis using preexisting coded data from the CUA Early Head Start Research. The local EHS team collected the kindergarten follow-up data in a three year period (2001-2004) that created three waves or cohorts based on children's age at kindergarten entry. Some of the measures used in the present study were part of the National EHS Research and Evaluation Project

(NEHSREP). Other measures were used for CUA local research purposes and were added to the national study investigation.

Protection of Human Subjects

Mothers provided voluntary Informed Consent to participate in the national and local research during their participation in the NEHSREP. They provided written agreement for themselves and their children to be interviewed and tested while they participated in the NEHSREP. All measures and procedures were approved by CUA's Institutional Review Board. In addition, the author of this dissertation received specific training certification in the protection of human subjects by completing the National Institutes of Health Office of Extramural Research (OER) on-line course *Protecting Human Research Participants*.

During the active phase of the study, all records and documents were and are currently kept in a safe and secure location. Access to these records and documents is restricted to the Early Head Start Research and Evaluation Project personnel only, who have signed a confidentiality agreement. Subjects in the study, or the families and children, were identified by a specific identification code number and never by name. This identification code was developed by NEHSREP when children and their families were enrolled into the national study. The author of this dissertation understands and is committed to protect the privacy of all study participants, and confidentiality of the data. Following the recommendations of the American Psychological Association, and of the National Institutes of Health Office of Extramural Research (OER) confidential

information was kept disguised so that participants are not individually identifiable to others.

Data collection

The data utilized by this study were collected by NEHSREP trained, often bi-lingual, interviewers. Specifically, the CUA data collectors underwent a training program in which they learned how to conduct parent interviews, home observations, and child assessments. To assure reliability in interviews and interviewers' quality, all interviewers were rated and had to meet certain bench marks. That is, data collectors were asked to videotape one practice parent interview and one practice child assessment. The videotape was sent to the NEHSREP, which rated the interviewer and ultimately provided approval and certification. After successfully undergoing the training and certification program, data collectors conducted home interviews and child assessments in children's homes prior to entry to kindergarten (spring and summer months). In appreciation for the time families devoted to completing the Parent Interview and for the families' time for their child to be tested, parents were given a $50 gift card.

Instrumentation

The Variables

Within a low-income sample, this study sought to examine the relationships between the environmental home support for language and emergent literacy, maternal characteristics, and three language and emergent literacy related to children's school

readiness measures: (1) receptive vocabulary, (2) understanding of basic relational concepts, and (3) ability to recognize and pronounce letters and words.

Independent Variables

There are two independent variables in the present study. These variables are defined and conceptualized in the following manner:

Home support for language and emergent literacy

This study identifies as "home support for language and literacy" the combination of home factors that past research indicates as supporting language and literacy development. That is, adult-child activities, and the presence of language stimulation. The presence of adult-child activities refers to the kinds of activities that the primary caregiver or someone else in the family engaged in with the child. The presence of language stimulation is understood as "overt attempts by the parents to encourage language development" (Caldwell & Bradley, 2003, p.39). It also includes the presence of toys, and books that facilitate child's language development.

Maternal characteristics

Maternal characteristics are defined through two specific variables concepts: mother's birth status, and mother's educational attainment. For the purpose of this study, birth status has two values: 1) Being US Born; or referring to those mothers included in the study who where born in the United States, and 2) Being Immigrant; or referring to those

mothers included in the study who where born abroad, in a country other than the United States. Mothers' educational attainment is defined through mothers having attained different levels of education: For example, Less than High school, High school, High school plus some training or some college courses, and College education (four-year college degree).

Dependent Variables

The dependent variables in this study include three specific variables that pertain to children's language and emergent literacy. These variables are defined in the following manner:

- Children's receptive vocabulary scores was measured by The Peabody Picture Vocabulary Test 3rd edition, and Test de Vocabulario en Imágenes Peabody: Adaptación Hispanoamericana.
- Children's understanding of basic relational concepts scores was measured by the Boehm Test of Basic Concepts-3 Preschool.
- Children's ability to recognize and pronounce letters and words scores was measured by the Letter-Word Identification test from Woodcock-Johnson Psycho-Educational Battery Revised, and subtest 22, Identificación de Letras y Palabras, from Batería Woodcock-Muñoz Pruebas de Aprovechamiento Revisada.

Henceforth, these children's outcome variables will be identified in the following manner:

- PPVT-III for the The Peabody Picture Vocabulary Test 3rd edition
- TVIP for the Test de Vocabulario en Imágenes Peabody: Adaptación Hispanoamericana
- Boehm-3 for the Boehm Test of Basic Concepts-3 Preschool
- WJ-22 for the Subtest 22, Letter-Word Identification, from Woodcock-Johnson Psycho-Educational Battery Revised
- WM-22 for the Subtest 22, Identificación de Letras y Palabras, from Batería Woodcock-Muñoz Pruebas de Aprovechamiento-Revisada

Measurement of the Independent Variables

Instrumentation for Home Support for Language and Emergent Literacy (Predictor)

This study used a number of items from the Early Head Start Parent Interview for Parents of Pre-K Children. ([EHS PI]; Love et al, 1996-2001). The HSLEL is composed of 22 items (see Appendix A). Items 1 through 9 are 3-point items; items 10 through 21 are dichotomous items (Yes/No); and Item 22 is a 4-point item. The range of possible scores is 0 to 33. The HSLEL scale was completed by the primary caregiver, either in English or Spanish (depending on respondents' language of choice). The Spanish version is an exact translation of the English version.

Preliminary analyses using factor analysis were conducted to determine if the initial item selection formed conceptually meaningful subscales. It did not. This fact

determined the kind of group comparison analyses that could be run. Because the HSLEL scale did not hold up well under factor analysis, it was decided to use individual analyses of variance (ANOVAs) to explore differences between groups. A total score for the HSLEL was computed and used for all analyses. Where specified, item-by-item analyses were conducted.

The Early Childhood Home Observation for Measurement of the Environment (EC-HOME) Inventory

A number of the items selected from the EHS PI were originally taken from the Early Childhood Home Observation for the Measurement of the Environment (EC-HOME) Inventory (Caldwell & Bradley, 1984). Thus, it is important to understand basic information about EC-HOME as it pertains directly to this study.

HOME was designed to "provide a systematic measurement of the family environment" (Caldwell & Bradley, 2003; p.1). The inventory is completed by an examiner who visits the home and observes the interaction between a primary caregiver and target child. Items are arranged so that some of them can be answered by the observer alone (O = Observation), others by the caregiver's responses to examiner's questions (I = Interview), and some by either the observer or primary caregiver.

EC-HOME was designed to measure the family environment of children between 3 and 6 years of age. The purpose of the inventory is to inform about the stimulation provided by the home's developmental environment in early childhood. It contains 55 items clustered into 8 subscales: 1) Learning Materials, 2) Language Stimulation, 3)

Physical Environment, 4) Parental Responsivity, 5) Learning Stimulation, 6) Modeling of Social Maturity, 7) Variety in Experience, and 8) Acceptance of Child.

EC-HOME internal consistency is alpha .89 with an inter-observer reliability of > 90% (R.H. Bradley, personal communication, October 3, 2008). Correlations between HOME and cognitive development measures have been established (Caldwell and Bradley, 2001).

EC-HOME and some issues for consideration

Linver, Brooks-Gunn, and Cabrera (2004) explain that there are some problems with the original HOME subscales. For example, the authors argue that some items within the subscales do not discriminate among families, thus, the usefulness of the subscale is reduced. In addition, the authors suggest that item consistency within each subscale is not always high. Lastly, there is discrepancy among researchers regarding which items, scales, or format to use. The result is that the inventory has been used in such varied ways that comparison across datasets is very difficult (Linver, Brooks-Gunn, & Cabrera, 2004). Regardless of these considerations, the different versions of HOME, including EC-HOME, have been extensively used in many large national studies (e.g. Infant Health and Development Project [IHDP], 1990; NICHD Study of Early Child Care [NICHD-SECC], NICHD Early Child Care Research Network, 2000; National Longitudinal Survey of Youth-Child Supplement [NLSY-CS], Chase-Landsale, Mott, Brooks-Gunn, & Phillips, 1991; Panel Study of Income Dynamics – Child Development

Supplement [PSID-CDS], Hofferth, Davis-Kean, Davis, & Finkelstein, 1997; Project of Human Development in Chicago Neighborhoods [PHDCN], Earls & Buka, 1997).

Leventhal, Martin, and Brooks-Gunn (2004) summarize well the literature behind the rationale for including EC-HOME or its variants, as it lists the many strengths of the instrument. Among the characteristics mentioned, there is the moderate to high reliability of EC-HOME and its variants (i.e., α range = .50-.90[4]), reasonable concurrent and predictive validity, and that the instrument has proven to be valid and reliable with children coming from affluent as well as low-income families.

Lastly, 75% of the US Born sample and 100% of the Immigrant sample of this study is considered to be minority (i.e. not Caucasian). Eleven percent of the US Born sample is of Hispanic background, compared to 75% of the immigrant sample. Bradley (2000) mentions critiques related to limitations, especially potential bias of the measure in cross-cultural families. Schmitz (2005) argues that in addition, the instrument overlooks within-group differences between Latinos. The author of this dissertation acknowledges these limitations. Caution will be used in interpreting the results of this measure.

In sum, the author of this dissertation considers the EC-HOME as an appropriate, valid and reliable measure for the assessment of the stimulation provided by the home environment in early childhood.

[4] Leventhal, Martin, and Brooks-Gunn (2004) study's internal reliability requirements was a minimum Cronbach's alpha level of .50 to .60. Their study considers a Cronbach's alpha of .50 to .60 as moderate.

National Early Head Start Parent Interview for Parents of Pre-K Children, and National Early Head Start Research and Evaluation Project (NEHSREP) Parent Interviews and Child Assessments.

The National Early Head Start Parent Interview was created to evaluate program impact on various areas (e.g. parenting and the home environment, relationship with father and other adults, family functioning, child care use, child behavioral problems, child's physical health, parent-child activities). It consists of parent report, observation, and direct child assessments. In this study, only the items related to everyday activities that low-income mothers (or someone else in the family) engaged in or used with their preschool age children, and the language stimulation experienced in the home setting were used.

Some parts of the interview used in this study could be filled out by the parent herself and others by trained examiners. Data was gathered during the spring and summer prior to entry to kindergarten (i.e., when the focus child was about 4-5 years of age).

Measures with internal consistency reliability of .65 and above were included for EHS impact analyses. Questionnaires and child assessments reliability had been established by the author of the measure. Questionnaires and child assessments were used in the Parent Interview because they had demonstrated construct validity in the past and had being used in large national studies. Norming sample characteristics for this measure are not available.

EC-HOME and the National Early Head Start Parent Interview (EHS PI)

The EC-HOME items used in this dissertation are part of the EHS PI. The EHS PI adapted a number of EC-HOME items, such that observation items could be answered directly by the parent if interviewer wasn't able to observe the objects described in the item. In addition, EC-HOME protocol indicates that the assessment has to be conducted at target child's home with target child present. EHS PI protocol indicated that the interview could be conducted elsewhere when the primary caregiver so desired. In the EHS PI, the presence of the target child at the time of interview was not mandatory. These are all issues that need to be taken into account when analyzing the data and interpreting the results derived from the EC-HOME items present in the EHS PI.

Instrumentation for Maternal Characteristics (Predictor)

The maternal characteristics identified in this study are birth status and educational attainment. This information was obtained from two different sources: EHS PI and CUA local baseline interview.

CUA local baseline interview

The baseline interview gathered information about interpersonal and financial difficulties, family resources, resiliency attitudes, spirituality, cultural connectedness, social support patterns, income supplement services, family goals, immediate educational plans for economic self-sufficiency, child temperament, and family birth status (Wall, Taylor, Liebow, Timberlake, & Farber, 2002). Of interest to this study is the question that

asked mother's place of birth. This indicator was used to determine if the mother was Immigrant or US Born.

National Early Head Start Parent Interview

Question 9.5 from the EHS PI asked about respondent's educational background. The question was "What is the highest grade or year of regular school that you have completed?" Respondent had to choose from the following list: none, elementary/middle/Jr. high school, high school, college or vocational school, post college, don't know, refused.

Measurement of the Dependent Variables

Instrumentation for Child Measures (dependent variable)

Peabody Picture Vocabulary Test, Third Edition (PPVT-III) (Dunn and Dunn, 1997), and Test de Vocabulario en Imagenes Peabody: Adaptacion Hispanoamericana (TVIP) (Dunn, Padilla, Lugo, & Dunn, 1986).

PPVT-III and TVIP were the selected measures of receptive vocabulary for this study (English and Spanish respectively). Standardized scores for both measures were used and are reported as one measure (i.e., PPVT-III/TVIP). This is common practice in the field. Below there is a brief explanation for both measures. There is also information regarding the number of children who were assessed in Spanish and the criteria used to make that decision.

The instruments were designed for persons between the ages of 2½ and 90+ years, and 2½ and 18 years (PPVT-III and TVIP respectively). Raw scores can be converted to age-adjusted, standardized scores with a mean of 100 and a standard deviation of 15. The tests are not timed, and are individually administered by a trained examiner, are norm-referenced and wide-range. The examinee is presented with a picture plate containing 4 black and white illustrations: three distractors plus one match for the stimulus word. Young children provide their answers by pointing at one of the 4 illustrations (Dunn & Dunn, 1997).

Peabody Picture Vocabulary Test, Third Edition (PPVT-III) (Dunn and Dunn, 1997)

Raw scores on the PPVT-III can be converted to age-adjusted, standardized scores with a mean of 100 and a standard deviation of 15 (Williams & Wang, 1997). Alpha reliabilities for PPVT-III range from .92 to .98, with a median reliability of .95 (Williams & Wang, 1997). Alternate forms coefficients for standard scores ranged from .88 to .96 (median = .94) and coefficients for raw scores ranged from .89 to .99 (median = .95) (Dunn, & Dunn, 1997, p. 49). Correlations between the PPVT-III (Form A and Form B, respectively) standard scores with three measures of cognitive ability (i.e. WISC-III, KAIT and K-BIT) ranged from .65 to .91 and .62 to .91 (Williams and Wang, 1997). Correlations between PPVT-R scores and scores on vocabulary tests and Vocabulary Subtests (e.g. Beery Picture Vocabulary Test, Boehm Tests of Basic Concepts, Boston Naming Tests) ranged from .40 to .76. The PPVT-R has a correlation of .64 with the Boehm Test of Basic Concepts (Dunn and Dunn, 1997).

PPVT-III and the assessment of culturally and linguistically diverse populations

In this study, 6% of the US Born sample is of Hispanic background, compared to 76% of the Immigrant sample. Other ethnic/race backgrounds include, Asian (Pakistan and Afghanistan), West African (Ghana and Sierra Leone), Eastern European (Bosnia), Native American Indian (Cherokee) and African American. Anderson (2002) and others (e.g. Peña, Quinn, & Iglesias, 1992), have argued that children of Hispanic background may not be familiar with labeling or pointing to objects or actions, as required in the PPVT-III. In this regard, Laing and Khami (2003), argue that errors in the PPVT-III may be a combination or a result of a deficit in receptive vocabulary, lack of familiarity with the task of pointing to pictures, and/or a lack of familiarity with English vocabulary.

Research has found that low-income African American children disproportionately score low in the PPVT, including the PPVT-III. Within the US Born sample of this study, 58% is African American, thus, this finding is of relevance for the present study. Some have argued that African American children score low in PPVT-III due to "variations in word usage due to ethnicity and social class" (Champion, Hyter, McCabe, & Bland-Stewart, 2003). Others (e.g. Restrepo, Schwanenflugel, Blake, Neuharth-Pritchett, Cramer, and Ruston, 2006) found the PPVT-III to be biased against African American children whose mothers have less than a high school education. Thus, the authors strongly caution practitioners in the use of this measure "for verbal ability estimates or screening and for identification of language disorders" (p.25). Huaqing Qi, Kaiser, Milan, and Hancock (2006) argue that bias in the PPVT-III may be a function of poverty rather than of cultural bias of the test. The author of this dissertation

acknowledges these criticisms, and results from data analyses using the PPVT-III will be interpreted cautiously.

Test de Vocabulario en Imagenes Peabody: Adaptacion Hispanoamericana (TVIP) (Dunn, Padilla, Lugo, & Dunn, 1986).

Eight children in this study were assessed using the TVIP. Trained staff conducting the parent interview and child assessments made the judgment of whether the child was to be tested in English or Spanish. Judgment was based on language spoken at home and language in which the child was considered to be more proficient in. That is, if the child appeared to show higher proficiency in Spanish, he or she would be tested in Spanish. Otherwise, he or she would be tested using the English version of the test.

The TVIP is the Spanish version adaptation of the parallel forms (L&M) of the PPVT-R (Dunn & Dunn, 1981). It follows roughly the same format and is administered in the same way. The main difference resides in that items were chosen based on their appropriateness for Spanish speaking children and adolescents. The internal consistency reliability (split-half reliability) for TVIP for children between 5 and 5.11 years of age is .93. Correlations between TVIP and the Kaufmann-ABC Global Scales ranged from .25 to .59. Correlations between TVIP scores and the Kaufman-ABC Achievement Scale Subtests among children ages 3 to 6 was.28 to .69. Correlation between the TVIP and Habilidad General Ability test was .44. The latter was administered among children that attended an urban private school in Puerto Rico (Dunn, Padilla, Lugo, & Dunn, 1986).

TVIP and the assessment of culturally and linguistically diverse populations: Test translation issues.

The TVIP was normed with a monolingual Spanish-speaking population from Mexico and Puerto Rico. In the sample for this study, 8 children were administered the TVIP. Of those, 6 were children of immigrant mothers from El Salvador, one child was born to an immigrant mother from Nicaragua, and one child was born to an immigrant mother from Guatemala. Thus, all subjects in this study tested with the TVIP derived from the norming sample in the sense that their language background was neither Mexican nor Puerto Rican. In both the TVIP and the PPVT, the order of difficulty of items is critical to performance. A ceiling is established when the child misses 6 items. Fernandez, Pearson, Umbel, Oller, and Molinet-Molina (1992) found that the order of difficulty of the TVIP items was "substantially different for Miami Hispanics from that derived from the norming sample".

Umbel, Pearson, Fernández and Oller (1992) advice caution in the interpretation of translated tests such as the PPVT/TVIP given that "single-language scores give only part of the picture". In this regard, Tomayo (1987) indicated that there is a difference between translating a meaning and reflecting the relative frequency of that translated word. In other words, the frequency of word use is not exactly the same in all languages. Consequently, a word may be correctly translated but may not be a common word in the translated language.

Peña (2007) raises another psychometric issue for consideration. As it is the case with the PPVT, the TVIP omits the use of articles. However, in the Spanish language,

nouns are typically preceded by an article. Peña concludes that "[O]mitting the article could result in a functional difference unintentionally affecting test performance".

Lastly, Umbel et al (1992) argue that the presence of *singlets* (words lexicalized in only one language) in the translated tests may curtail children's performance, and these translations, do not "fully assess the knowledge of bilingual children".

In sum, based on current research and taking into account the considerations regarding the assessment of culturally and linguistically diverse populations; the author of this dissertation considers both PPVT-III and TVIP as appropriate, valid and reliable measures for the assessment of receptive vocabulary.

Boehm Test of Basic Concepts-3, Preschool (Boehm, 2001)

Boehm-3 Preschool individually evaluates children between the ages of 3-0 and 5-11 years old in their understanding of basic relational concepts (i.e. words use to describe characteristics of people/objects, spatial relationships, time, and quantity). Examples of basic relational concepts measured in this test are size (*tallest*), direction (*in front*), position in space (*nearest*), time (*before*), quantity (*some, but not many*), classification (*all*), general (*another*). The understanding of basic relational concepts is also considered a relevant feature of emergent literacy (Boehm, 2001). Thus, this test evaluates skills important for language and cognitive development, as well as school success (Boehm, 2001). In this study, Boehm-3 is considered complementary to the PPVT-III. Understanding basic concepts such as *both, another* and *before*, enable children to follow

directions and classroom routines because it helps them understand what is being communicated in the classroom (Boehm, 2001).

Boehm provides raw scores, performance ranges, and percentile scores. A raw score "is the total number of items the child answered correctly" (Boehm, 2001, p.58). According to the test developer (Boehm, 2001, p.60) performance range refers to the child's performance as classified in one of three ranges. A performance range of 1 (upper third), means that the child knows most of the basic concepts, compared to age-level peers. A performance range of 2 (middle third), means that the child knows many of the basic concepts compared to age-level peers, but lacks understanding of some key concepts. A performance range of 3 (lower third) "means that the child's knowledge of the basic concepts is extremely low when compared to age-level peers. Therapist/teacher and parent help is needed for the child to develop successful language skills" (Boehm, 2001, p.60).

All Boehm-3 scores are computed by children's age bands. In this study, mean raw scores, standard deviations, percentiles, and performance range were computed according to children's age bands. The highest raw score for ages 4-0 to 5-11 is 52. Coefficient alphas for Boehm 3-Preschool (English version) ranged from .85 to .92 (Boehm, 2001). Boehm 3-Preschool (English version) correlation with Boehm-Preschool was .84. Correlation with Bracken Basic Concepts Scale-Revised was .80 (for 3 years old) and .73 (for 5 years old) (Boehm, 2001).

In this study, 8 children were assessed using the Spanish version of the Boehm-3 based on language proficiency. The English and Spanish versions of the test were

developed in conjunction. Wording and items in Spanish that represented problems were adapted to "ensure that the Spanish test items were appropriate and familiar to Spanish-speaking children" (Boehm, 2001; p.71). More than 400 Spanish-speaking children, ages 3-0 to 5-11 years old, in the United States took part in the standardization and related reliability and validity studies of the Boehm-3 Preschool Spanish Edition (Boehm, 2001). The Cronbach alpha coefficient for the Spanish edition is .85 for the 4-6 to 4-11 age band; .88 for the 5-0 to 5-5 age band, and .80 for the 5-6 to 5-11 age band. The Boehm examiner's manual present evidence of validity based on test content (Boehm, 2001).

The author of this dissertation considers the Boehm-3 as an appropriate, valid and reliable measure for the assessment of the understanding of relational concepts.

Letter-Word Identification Test from Woodcock-Johnson Psycho-Educational Battery - Revised (WJ-R) (Woodcock & Mather, 1989, 1990), and Batería Woodcock-Muñoz Pruebas de Aprovechamiento-Revisada (Batería -R) (Woodcock & Muñoz-Sandoval, 1996a)

WJ-R and Batería-R, subtest 22, were the selected measures of letter-word identification skills for this study (English and Spanish respectively). Standardized scores for both measures were used and are reported as one measure. This is common practice in the field. Below there is a brief explanation for both measures. There is also information regarding the number of children who were assessed in Spanish and the criteria used to make that decision.

The WJ-R and Batería -R, is a test battery designed to measure intellectual and academic development. The present study used the Letter-Word Identification subtest from the Woodcock-Johnson Test of Achievement ([WJ-22], Woodcock, & Johnson, 1989b), to measure children's ability to recognize and pronounce letters and words. Spanish speaking children were tested with the Spanish version of the subtest (i.e., Batería -R subtest 22, Identificación de letras y palabras). The population being tested is preschool children between the ages of 4 and 5 years old. Raw scores can be converted to age-adjusted, standardized scores with a mean of 100 and a standard deviation of 15.

Letter-Word Identification Test from Woodcock-Johnson Psycho-Educational Battery - Revised (WJ-22) (Woodcock & Mather, 1989, 1990).

The battery is designed to be individually administered to individuals between the ages 2 and 90+ years old. The WJ-R battery consists of 41 subtests, and each requires approximately 5 minutes completing. The subtests can be administered independently or in combination with other subtests.

The Letter-Word Identification subtest measures the ability to recognize and pronounce letters and words. It consists of 57 items, where the first five items involve the ability to match a word with a picture of the object. The remaining 52 items measure the respondent's reading skills to identify isolated letters and words that appear in large type. Testing should take no more than 5 to 10 minutes for this subtest.

The Letter-Word Identification internal consistency has a Cronbach's Alpha of .92 on average for preschool children (Woodcock, & Johnson, 1989c). The Letter-Word

Identification subtest was used in the Head Start FACES study, which involved preschool age children of the same ages that the present study will assess. In the FACES study, validity analyses revealed that the Letter-Word Identification subtest had a correlation of .55 with the ECLS-K Reading scale scores, and r =.40 with ECLS-K General Knowledge scale scores. Multivariate regression analyses with the scale scores from entire FACES battery at the end of Head Start year predicting ECLS-K Reading scores at end of kindergarten year, Letter-Word Identification task was the best predictor in the model (beta = .32) (Sorongon, Kim, & Zill, n.d.). Webster (1994) reports content, criterion and construct validity with Boehm Test of Basic Concepts, the Bracken Basic Concepts Scale, the Kaufman Assessment Battery for Children, the McCarthy Scales of Children's Abilities, the PPVT-R, the Stanford Binet Intelligence Scale – 4th edition, the Weschsler Intelligence Scale for Children-Revised, and the Peabody Individual Achievement Test.

Batería Woodcock-Muñoz Pruebas de Aprovechamiento-Revisada (Woodcock & Muñoz-Sandoval, 1996a)

The *Batería Woodcock-Muñoz: Pruebas de aprovechamiento-Revisada* ([Báteria-R]; Woodcock & Muñoz-Sandoval, 1996a) is the Spanish version of the *Woodcock Johnson Tests of Achievement-Revised* ([WJ-R]; Woodcock & Johnson, 1989) and is targeted to Native Spanish speakers ages 2-90. Báteria-R follows the same format and is administered in the same way as WJ-R. In this study's sample, Spanish speaking children were administered Báteria-R subtest 22, Identificación de letras y palabras (letter-word identification, henceforth, WM-22).

Some item contents and task requirements in Báteria-R are exact translations of the English version, while others were adapted based on their appropriateness for Spanish speaking population. New items were calibrated and scores were equated to the WJ-R norms (Woodcock & Muñoz-Sandoval, 1996a, 1996b). The measure was normed on monolingual ("or nearly so") Spanish speakers in Arizona, California, Florida, New York, and Texas as well as in Mexico, Puerto Rico, Costa Rica, Spain, Argentina, and Peru.

There is no information from the publisher regarding reliability and validity of the measure.

Eight children in this study were assessed using the WM-22. Trained staff conducting the parent interview and child assessment made the judgment of whether the child was to be tested in English or Spanish. Judgment was based on language spoken at home and language in which the child was considered to be more proficient in. That is, if the child appeared to show higher proficiency in Spanish, he or she would be tested in Spanish. Otherwise, he or she would be tested using the English version of the test.

Batería Woodcock-Muñoz: Pruebas de aprovechamiento-Revisada, and the assessment of culturally and linguistically diverse populations: Test translation issues.

As is the case with other Spanish versions of vocabulary measures (e.g. PPVT/TVIP), critics caution regarding the differences in Spanish language throughout the Spanish-speaking regions. However, Woodcock, and Muñoz-Sandoval (2001)

disregard this as a myth. The authors argue that there are less language differences among Spanish-speaking regions than there are among English-speaking regions in the United States. The authors do acknowledge that there might be a difference from one part of the Spanish-speaking world to another regarding the use of common words. In order to respond to the cultural and linguistic differences among the norming sample, the test developers of Báteria-R "Rasch-calibrated item difficulty for each of the national regions and eliminated items when the regional-sample difficulty level of those items differed significantly from the total sample difficulty" (as explained in Schrauf & Navarro, 2005; p.383).

In sum, based on current research and taking into account the considerations regarding the assessment of culturally and linguistically diverse populations; the author of this dissertation considers both WJ-22 and WM-22 letter-word identification subtests as an appropriate, valid and reliable measure for the assessment of children's ability to recognize and pronounce letters and words.

Measures Summary

Table 1 below provides a summary of measures used in this study.

Table 1. Summary of instrumentation

Measure	Variable	Construct Measured	Procedure
EC-HOME, EHS PI	Predictor	Home Support for Language and Literacy	Parent answers questions in an interview with examiner, and /or Interviewer observes the behavior during the visit
CUA local baseline interview, EHS PI	Predictor	Maternal Characteristics	Parent answers questions in an interview with examiner
PPVT-III/TVIP	Outcome (Dependent Variable)	Receptive Vocabulary and verbal ability	Completed by child during child assessment.
Boehm-3	Outcome (Dependent Variable)	Understanding of basic relational concepts	Completed by child during child assessment.
WJ/WM	Outcome (Dependent Variable)	Children's ability to recognize and pronounce letters and words	Completed by child during child assessment

Data Analysis

This study used quantitative methods to:

a) Describe the demographic characteristics of mothers in the sample (i.e. educational attainment, and birth status [US born vs. Immigrant]).
b) Describe children's language and emergent literacy development at kindergarten entry
c) Examine the relationships between home support for language and emergent literacy, maternal characteristics and children's language and emergent literacy development at kindergarten entry.

Hypotheses and Data Analysis

The purpose of this study was to understand the relationships between home support for language and emergent literacy (HSLEL) in low-income families, maternal characteristics, and children's language and emergent literacy development at kindergarten entry. Therefore, the research questions for this study are as follow: Within low-income families, this study's hypothesized that

1. There is a significant, positive relationship between HSLEL and children's language and emergent literacy development,
2. The homes of mothers with more education provide significantly greater HSLEL for the language and emergent literacy development of children than the homes of mothers with less education,
3. US born mothers' homes provide significantly greater HSLEL than the homes of Immigrant mothers,

4. Children whose mothers have more education score significantly higher in language and emergent literacy development than children whose mothers have less education,
5. Children with US born mothers score significantly higher in language and emergent literacy development than children of Immigrant mothers.

Data Analysis

Below there is a description of the statistical techniques used to examine group comparisons and explore the relationships between groups. For group comparison analyses, since there are three dependent variables being studied, the significance level was established at .017 (i.e., α=.05/3). This correction, known as Bonferroni adjustment, is made to ensure that the set of dependent variables do not exceed a critical value (i.e., α=.05), and to reduce the possibility of incurring in Type I error (i.e., reject the null hypothesis, when the null hypothesis is true). Results with a significance level of .05 will be acknowledged. Based on the Bonferroni adjustment described above, however, these results must be considered with caution. For all other analyses (i.e., correlations, multiple regression analysis), the significance level was set at .05 (i.e., α=.05).

Where it pertains, effect size was calculated. Effect size refers to the "amount of total variance in the dependent variable that is predictable from knowledge of the levels of the independent variable" (Tabachnick & Fidell, 2001; p.52). Following Cohen's (1988) guidelines, eta square value of .01 will be considered a small effect, η^2= .06, moderate effect; and η^2= .14 large effect. Tabachnick and Fidell (2001) suggest that

partial η^2 is a better measure of strength of association because it overcomes the flaws associated with η^2. Thus, this study uses the partial η^2. In addition, partial η^2 is the statistic calculated by SPSS (the statistical package used to run the analyses in this study).

One way ANOVA is a procedure that allows the comparison between groups by determining if there is a statistically significant difference in the mean scores on the dependent variable across pre-established groups. The only information we get from ANOVA is whether or not there is a difference in the mean scores of the different groups but not where the differences reside. For that purpose, we need to run Post-hoc tests. Thus, for purposes of this study, post-hoc tests were conducted as needed.

Pearson correlation coefficients (r) were used to explore the relationships between the variables. Coefficients values range from -1 to +1. The absolute value indicates the strength of the relationship, while the (+) or (-) signs indicate positive or negative correlations respectively. Cohen (1988) provides the following guidelines:

r=.10 to .29	or	r=-.10 to -.29	Small
r=.30 to .49	or	r=-.30 to -.49	Medium
r= .50 to .1.0	or	r= -.50 to -.1.0	Large

Multiple Regression Analysis (MRA) is a statistical technique that can aid in determining how much of the variance in the dependent variable (DV) can be explained by the independent variables (IVs). In addition, this technique provides an indication of the relative contribution of each of the IVs in the study (Pallant, 2005). MRA allows the

researcher to compare competing sets of IVs to predict a DV, and to explore the relationship between IVs and DV when the effect of other IVs is statistically eliminated (Tabachnick & Fidell, 2001). In other words, MRA is well suited for "analyzing collective and separate effects of two or more independent variables on a dependent variable" (Pedhazur, 1997; p.3). Preliminary analyses were conducted for data screening purposes. Major assumptions of multiple regression were checked. In this study, stepwise regression was used to determine the variables that made significant unique contributions to the variance in the dependent variables, and to identify the strongest predictor for each language and emergent literacy skill.

CHAPTER 4 – RESULTS

This chapter provides a description of the results of the statistical analyses. The first section describes the characteristics of the sample. The second section presents the results of the statistical procedures used to address the study's hypotheses.

The statistical package SPSS Version 16.0 was used to run the statistical analyses. For group comparison analyses, the significance level was established at .017 (i.e., α=.05/3). Results with a significance level of .05 will be acknowledged, but must be considered with caution (see Chapter 3). For all other analyses (i.e., correlations, multiple regression analysis), the significance level was established at .05 (i.e., α=.05). Where it pertains, effect size was calculated.

Participants

The participants for this study were 76 low-income mothers and 76 children. Forty seven percent of the mothers were US born and 53% were Immigrant. Mothers' age ranged from 20 to 47 years old, with an average age of 31. US born mothers were slightly younger (*M*=28.6) compared to Immigrant mothers (*M*=33.0).

Maternal educational attainment was divided into three groups: less than high school education, high school education, and high school education with further training. Twenty seven percent of the mothers had less than a high school education, 25% had a high school education, and 48% had a high school education plus further training. Based on birth status, Immigrant born mothers were significantly more likely to lack a high

school diploma (40%) compared to US born mothers (14%). US born mothers were significantly more likely to have a high school education plus further training (58%) compared to Immigrant mothers (36%) (Table 2).

Table 2.

Association between Maternal Educational Attainment with Maternal Birth Status

	Birth Status		Total
Maternal Education	US born	Immigrant	
Less than High School	5 (14%)	16 (40%)	21 (28%)
High School	10 (28%)	9 (22%)	19 (25%)
High School plus further training	21 (58%)	15 (38%)	36 (47%)
Total	36 (100%)	40 (100%)	76 (100%)

$\chi^2 = (2, N=76) = 6.62, p=.04, Phi=.30$.

Fifty nine percent of US born mothers were African American, 26% Caucasian, 6% of Hispanic heritage, 6% Native American (Cherokee), and 3% from Puerto Rico. Seventy six percent of the Immigrant mothers were Hispanic, 14% from West Africa, one mother from Grenada and another from Bosnia. Within the Immigrant born mothers, 40% were from El Salvador. Other countries of origin included Guatemala (3%), Honduras (10%), Bolivia (5%), Perú (8%), Mexico (8%), Nicaragua (3%), Pakistan (3%), Afghanistan (3%), Ghana (8%), and Sierra Leone (8%).

Fifty eight percent of the children were male, and 42% were female. Their ages ranged from 4.08 to 5.10 years of age with a mean of 4.9 (*SD*=.32) years.

Measures

This study included 4 measures. One was related to maternal behaviors in support of child's emergent literacy, while the other three measures were related to children's language outcomes in receptive vocabulary, understanding of relational concepts, and their ability to recognize and pronounce letters and words.

(1) Mothers' Measure

The Home Support for Language and Emergent Literacy (HSLEL) Scale

The HSLEL scale (see Appendix A) was completed by the primary caregiver, either in English or Spanish (depending on respondents' language of choice). Seventy percent of the respondents completed the scale in English, and 30% in Spanish.

The range of possible scores was 0 to 33. The obtained range for this sample was 19, from to the lowest score of 13 to the highest score of 32. The mean was 23.34 (*SD*=4.66). The internal consistency of this scale was adequate as the Cronbach alpha coefficient for this scale was .72.

The HSLEL is composed of 22 items. Items 1 through 9 are 3-point items; items 10 through 21 are dichotomous items (Yes/No); and Item 22 is a 4-point item. The percentages of responses for each value of the variable are presented in detail in Appendix B. T-tests and ANOVAs were conducted to explore the difference between group means with educational attainment and birth status as grouping variables. Detailed

interpretation of the results of these analyses is presented in Appendix B. Below there is a summary of the most relevant findings.

In analyses of responses on each of the individual items, T-tests indicated that there was no statistically significant difference in scores for US born mothers and Immigrant mothers, except for Item #22, Book Ownership. US born mothers were significantly more likely than Immigrant mothers to own a greater number of children's books. In a second set of analyses by items, ANOVAs revealed that mothers with higher levels of educational attainment were significantly more likely to teach the child letters, words, and numbers (Item #3), to play with toys or games indoors (Item #6), to take the child to a museum (Item #10), to teach the alphabet (Item #12), and to own a greater number of children's books (Item #22). When birth status was controlled for, birth status remained the strongest predictor of book ownership.

(2) Child's Measures

Overall, children in this sample scored below national levels (Tables 3a and 3b) leading to a restricted range of scores. Boehm percentile ranks are presented separately because they are computed by child's age band. The obtained mean scores for children in this study were almost one standard deviation below the national means across measures. As a group, children of US born mothers (M= 91.67, SD= 12.57) were significantly more likely than children of Immigrant mothers to obtain higher scores on the PPVT/TVIP (M= 82.78, SD= 11.23; $t(74)$= 3.26, p= .002). Children of US born mothers (M= 39.80, SD= 8.27) were also significantly more likely than children of Immigrant mothers to

obtain higher scores on the Boehm-3 (*M*= 35.33, *SD*= 10.50; *t*(72)= 2.02, *p*= .047). There was not statistically significant difference on WJ/WM scores for children of US born mothers and children of Immigrant mothers.

Table 3a.

Percentile Ranks for Children's PPVT/TVIP and WJ/WM Scores.

Measures	N	Mean	SD	Percentile
PPVT/TVIP	76	86.99	12.62	19
WJ/WM	76	87.92	18.26	21

Table 3b.

Percentile Ranks for Children's Boehm-3 Scores

Age band	N	%	Mean	SD	Percentile
4-6 to 4-11	10	14	30.8	12.98	14
5-0 to 5-5	46	62	38.24	7.72	11
5-6 to 5-11	18	24	39.11	11.28	11

Although children in this sample as a group scored below national levels on all measures, some children scored at or above national levels. Inspection of the data revealed that when scores above the 50th percentile were examined, the children in this sample performed better on the WJ/WM than on the PPVT/TVIP and Boehm-3. Twenty eight percent of the children scored above the 50th percentile on the WJ/WM, compared to 19% on the Boehm-3 and 16% on the PPVT/TVIP (Tables 4a-c). Children of Immigrant mothers obtained higher scores on the WJ/WM than on the other measures.

Children of Immigrant mothers were more likely than children of US Born mothers to perform in the lowest percentile rank on all measures (Tables 4a-c).

Table 4a.

Children's PPVT/TVIP Scores by Percentile Ranks and Maternal Birth Status

	Percentage (%)		
Percentile Range	Total (N=76)	US Born (N=36)	Imm (N=40)
Above 50	15.79	75	25
16-50	42.11	59.37	40.63
3-15	35.53	25.93	74.07
<1-2	6.58	20	80

Note. N=76; Total= percentage of children regardless of maternal birth status; US born= children of US Born mothers; Imm= children of Immigrant mothers.

Table 4b.

Children's Boehm-3 Scores by Percentile Ranks and Maternal Birth Status

	Percentage (%)		
Percentile Range	Total (N=74)	US Born (N=35)	Imm (N=39)
Above 50	18.92	71.43	28.57
16-50	27.03	60	40
3-15	47.30	34.29	65.71
<1-2	6.76	20	80

Note. N=74; Total= percentage of children regardless of maternal immigrant status; US born= children of US born mothers; Imm= children of Immigrant mothers.

Table 4c.

Children's WJ/WM Scores by Percentile Ranks and Maternal Birth Status

	Percentage (%)		
Percentile Range	Total (N=76)	US Born (N=36)	Imm (N=40)
Above 50	27.63	57.38	47.62
16-50	40.79	54.84	45.16
3-15	22.37	35.29	64.71
<1-2	9.21	28.57	71.43

Note. N=76; Total= percentage of children regardless of maternal immigrant status; US born= children of US born mothers; Imm= children of Immigrant mothers.

Lastly, the language in which respondent answered the HSLEL scale was positively correlated with children's understanding of basic relational concepts (N= 74, r=.30, p=.007) and children's ability to recognize and pronounce letters and words (N=76, r=.292, p=.01). This means that children whose mothers answered the English version of the HSLEL had better understanding of basic relational concepts, and greater ability to recognize and pronounce letters and words than the children whose mothers answered the Spanish version of the scale.

Children's receptive vocabulary

Receptive vocabulary was measured by The Peabody Picture Vocabulary Test 3rd edition (PPVT), and Test de Vocabulario en Imágenes Peabody: Adaptación Hispanoamericana (TVIP).

PPVT/TVIP provides standardized scores with a mean of 100 and a standard deviation of 15. Children in the present study had receptive vocabulary standard scores that ranged from 48 to 111 with a mean standard score of 86.99 (*SD*= 12.62). This result means that the standard mean score of the children in this sample was in the 19th percentile of the national sample. That is, these children scored almost 1.0 standard deviation below the mean of the national sample.

Sixty eight children were assessed using the PPVT and 8 children were assessed using the TVIP. An independent-samples t-test was conducted to compare receptive vocabulary scores for PPVT (English) and TVIP (Spanish). There was no significant difference in score between group means for PPVT (*M*=87.34, *SD*=12.84) and TVIP [*M*=84, *SD*=10.84; *t*(74)=-.705, *p*=.483]. For purposes of hypothesis testing, PPVT and TVIP scores were combined.

Children's Understanding of Basic Relational Concepts

Children's understanding of basic relational concepts was measured by Boehm Test of Basic Concepts-3 Preschool (see Chapter 3 for a more detailed description of this measure). Sixty six children were assessed using the English version of the test, and 8 children were assessed using the Spanish version of the test.

The Spanish version of the test yields comparable results to the English version. Therefore, Boehm-3 English and Spanish version scores were combined. An independent-samples t-test was conducted to compare Boehm scores for the Spanish and English versions of the test. There was no significant difference in score between group

raw score means for the Spanish version (*M*=33.75, *SD*=8.084) and English versions [*M*=37.89, *SD*=9.85; *t*(72)=-1.143, *p*=.257].

All Boehm-3 scores are computed by children's age bands. In this study, mean raw scores, standard deviations, percentiles, and performance range were computed according to children's age bands (Table 5). The highest raw score for each age band is 52.

Table 5.

Characteristics of Boehm Performance by Age Band (N=74)

Age band	N	Mean	SD	Percentile	Performance Range
4-6 to 4-11	10 (13.16%)	30.8	12.98	14	3 (lowest third)
5-0 to 5-5	46 (60.53%)	38.24	7.72	11	3 (lowest third)
5-6 to 5-11	18 (23.68%)	39.11	11.28	11	3 (lowest third)

Thirteen percent of the children in this sample were in the 4-6 to 4-11 age band. They obtained a mean raw score of 30.8 (*SD*=12.98) by answering correctly 59% of the items. Children in this age band performed as well as or better than 14% of their age level peers when compared to the children in the national sample. According to the test developer, this result would be an indicator that "therapist/teacher and parent help is needed for the child to develop successful language skills" (Boehm, 2001, p.60).

Sixty one percent of the children in this sample were in the 5-0 to 5-5 age band. They obtained a mean raw score of 38.24 (*SD*=7.72) by answering correctly 73% of the items. Children in this age band performed as well as or better than 11% of their age level

peers when compared to the children in the national sample, showing a very low knowledge of basic concepts.

Twenty four percent of the children in this sample were in the 5-6 to 5-11 age band. They obtained a mean raw score of 39.11 (*SD*=11.28) by answering correctly 75% of the items. Children in this age band performed as well as or better than 11% of their age level peers when compared to the children in the national sample, also showing a very low knowledge of basic concepts.

Considering children in all three age bands combined, 31% (n=23) had a performance range of 1 (top third), indicating knowledge of most of the basic concepts when compared to age-level peers. Twenty two percent (n=16) had a performance range of 2 (middle third), evidence of knowledge of many of the basic concepts when compared to age-level peers, but lack of understanding on some key concepts. Forty seven percent of the children had a performance range of 3 (bottom third), indicating that "therapist/teacher and parent help is needed for the child to develop successful language skills" (Boehm, 2001, p.60).

Children's Ability to Recognize and Pronounce Letters and Words

Children's ability to recognize and pronounce letters and words was measured using the Letter-Word Identification subtest from Woodcock-Johnson Psycho-Educational Battery Revised (WJ), and subtest 22, Identificación de Letras y Palabras, from Batería Woodcock-Muñoz Pruebas de Aprovechamiento Revisada (WM).

WJ and WM yield comparable scores, therefore, in this study WJ and WM standards scores were combined and reported as one measure. Sixty eight children were assessed using WJ and eight using WM. An independent-samples t-test was conducted to compare WJ/WM standard scores for the Spanish (WM) and English (WJ) versions of the test. There was no significant difference in scores between group standard score means for the Spanish version (M=83.75, SD=7.851) and English version [M=88.41, SD=19.1; $t(64)$=-.680, p=.498].

WJ/WM provides standardized scores with a mean of 100 and a standard deviation of 15. Children in the present study had WJ/WM standardized scores that ranged from 9 to 116, with a mean standard score of 87.92 (SD= 18.26). This means falls at the 21th percentile of the national sample, with children scoring almost 1.0 standard deviation below the national average.

Research Hypotheses

Research Hypothesis 1

This study hypothesized that within low-income families, there is a significant, positive relationship between Home Support for Language and Emergent Literacy (HSLEL) and children's language and emergent literacy skills at kindergarten entry.

Research Hypothesis 1 was partially supported. The relationship between HSLEL and children's language and emergent literacy scores (as measured by PPVT/TVIP, Boehm-3, and WJ/WM) was investigated using Pearson product-moment correlation coefficient. The results indicated that six specific HSLEL items from the scale were

statistically significantly correlated with child outcomes (See Table 6). Number of children's book at home (i.e., book ownership) was significantly and positively correlated with all three measures. There was no significant correlation between the total HSLEL scale score and children's language and emergent literacy outcomes on PPVT/TVIP, Boehm, or WJ/WM.

Table 6.

Correlations Between Individual Items of HSLEL and Child Outcomes

	PPVT/TVIP		*Boehm-3*		*WJ/WM*	
Activities	*r*	*P*	*r*	*P*	*r*	*P*
Using correct grammar.-			.406	.000**		
Teaching verbal manners.-	.309	.007**				
Working in arts/crafts.-					.278	.015*
Getting books from library.-			.256	.028*		
Teaching songs.-			-.252	.030*		
Book ownership.-	.243	.035*	.251	.031*	.232	.044*

*Note. N=76; *significant at the p<.05 level; ** significant at the p<.01 level*

The strongest statistically significant positive correlation was between parent using correct grammar and pronunciation and Boehm-3 scores. There was a moderate, positive significant correlation between parent using correct grammar and pronunciation, and children's Boehm scores [r=.41, n=76, p=.00], with high scores on this item

correlated with high Boehm scores. Parents' use of correct grammar and pronunciation explains 16.5% of the variance in children's understanding of basic relational concepts.

There was a moderate, positive statistically significant correlation between parent teaching simple verbal manners and children's PPVT/TVIP scores [r=.31, n=76, p=.01], with high scores on this item correlated with high PPVT/TVIP scores. Teaching simple verbal manners helps explain 9.5% of the variance in children's receptive vocabulary.

There was a small, positive, statistically significant correlation between parent working on arts/crafts with child and children's WJ/WM scores [r=.29, n=76, p=.02], with high levels of engaging in this activity associated with high WJ/WM scores. Working on arts and crafts with child explains 7.7% of the variance in children's ability to pronounce and recognize letters and words.

There was a small, positive, statistically significant correlation between parent getting books from the library and children's Boehm scores [r=.26, n=74, p=.03], with high scores on this item correlated with high Boehm scores. Borrowing books from the library helps explain 6.6% of the variance in children's understanding of basic relational concepts.

There was a small, negative, statistically significant correlation between parent teaching songs/music to child and children's Boehm-3 scores [r=-.25, n=74, p=.03], with low levels of engaging in this activity correlated with higher Boehm scores. Teaching child songs or music helps explain nearly 6% of the variance in children's understanding of basic relational concepts.

There was a small, positive, statistically significant correlation between book ownership and children's Boehm scores [r=.25, n=74, p=.03], with high scores on this item correlated with high Boehm scores. Book ownership helps explain 6.3% of the variance in children's understanding of basic relational concepts.

There was a small, positive significant correlation between the number of books owned and children's PPVT/TVIP scores [r=.24, n=76, p=.04], with high scores on this item associated with high PPVT/TVIP scores. Book ownership helps explain 5.9% of the variance in PPVT/TVIP scores.

There was a small, positive significant correlation between book ownership and children's WJ/WM [r=.23, n=76, p=.04], with high scores on this item associated with high WJ/WM scores. Book ownership helps explain 5.4% of the variance in WJ/WM scores.

The following items from the HSLEL scale, "frequency of reading", "getting books from library", and "book ownership", have been extensively researched. Most studies identify these factors as predictors of language and emergent literacy skills. The author of this dissertation wanted to examine whether and to want extent this correlation existed in a low-income sample with a high percentage of children of Immigrant mothers. Consequently, these three items were combined to explore their relationship with child outcomes. This short version of the HSLEL Scale was moderately and significantly correlated with children's understanding of basic relational concepts [r=.293, n=74, p=.01], and modestly correlated with receptive vocabulary [r=.240, n=76, p=.03], and children's ability to recognize and pronounce letters and words [r=.240, n=76, p=.036].

In sum, Research Hypothesis 1 was partially supported. There were significant correlations between specific items of HSLEL and child outcomes (See Table 5). There was no significant correlation between the HSLEL scale as a whole and child outcomes.

Based on prior literature review, this study also investigated the relationships between maternal birth status, maternal educational attainment, and individual items on HSLEL.

To further investigate the relationship between maternal immigrant status, maternal educational attainment, and individual items on the HSLEL scale, the study examined the Pearson product-moment correlation coefficients. Only significant correlations at the p<.05 level are reported here (Table 7).

Table 7.

Correlations Between Item on HSLEL and Maternal Characteristics

	Birth Status		*Education*	
Activity	*R*	*p*	*r*	*p*
Going to the museum			.328	.004**
Book ownership	-.324	.004**	.314	.006**
Playing games indoors			.275	.016*
Teaching verbal manners			.275	.016*
Teaching letters/words			.267	.020*
Taking time to listen			.229	.046*

Note. N=76; *significant at the p<.05 level; ** significant at the p<.01 level; Birth Status: Immigrant=1, US born= 0; Educational Attainment: less than high school= 1, high school= 2, high school plus further training= 3.

There was a moderate, significant negative correlation between immigrant status and book ownership [*r*=-.32, *n*=76, *p*=.00], with Immigrant mothers owning fewer children's books than US born mothers. Maternal birth status helps explain 10.5% of the variance in book ownership.

There were a moderate, significant positive correlations between maternal educational attainment and taking child to a museum [*r*=.328, *n*=76, *p*=.004], and maternal educational attainment and book ownership [*r*=.314, *n*=76, *p*=.006], with educational attainment associated with higher item scores on both categories of parent-child activities.

Maternal educational attainment was modestly and significantly correlated with playing with toys or games indoors with child [*r*=.275, *n*=76, *p*=.016], teaching simple verbal manners [*r*=.275, *n*=76, *p*=.016], teaching child letters, words or numbers [*r*=.267, *n*=76, *p*=.20], and encouraging child to talk and taking time to listen [r=.229, n=76, *p*=.046]. Higher educational attainment was associated with higher scores on these parent-child activities.

Maternal Birth Status, Maternal Educational Attainment and Children's Language and Emergent Literacy Skills

Pearson product-moment correlation coefficients were conducted to understand the relationships between maternal birth status, maternal educational attainment, and child outcomes. Only significant correlations at the p<.05 level are reported here (Table 8).

Table 8.

Correlations between Maternal Characteristics and Child Outcomes

				Birth Status		*Education*	
Measure	*n*	*M*	*SD*	*R*	*p*	*R*	*p*
PPVT/TVIP	76	86.99	12.62	-.354	.002**	.311	.006**
Boehm-3	74	37.45	9.71	-.231	.047*	.278	.016*
WJ/WM	76	87.92	18.26	-.149	.198	.198	.086

Note. N=76; *significant at the p<.05 level; ** significant at the p<.01 level; Birth Status: Immigrant=1, US born= 0; Educational Attainment: less than high school= 1, high school= 2, high school plus further training= 3.

There was a moderate, significant negative correlation between maternal birth status and PPVT/TVIP scores [r=-.354, n=76, p=.002], and a small, significant positive correlation between maternal educational attainment and PPVT/TVIP scores [r=.278, n=76, p=.016]. Being the child of a US Born mother and/or of a mother with a higher educational attainment is associated with higher PPVT/TVIP scores.

There was a small, significant negative correlation between maternal Birth Status and Boehm scores [r=-.231, n=74, p=.047], and a small, significant positive correlation between maternal educational attainment and Boehm scores [r=.278, n=74, p=.016]. Being the child of a US Born mother and/or of a mother with a higher educational attainment is associated with higher Boehm scores.

There was no significant correlation between maternal Birth Status, and WJ/WM scores or between maternal educational attainment, and WJ/WM scores.

Follow-up Questions and Multiple Regression Analyses

The next three follow-up analyses were conducted to control for the possible effects of maternal characteristics on child outcomes, and to determine the strongest predictor for each child outcome measure.

Analysis 1

Stepwise regression analysis (MRA) was used to address the following follow-up question regarding PPVT/TVIP: What is the strongest predictor of children's receptive vocabulary?

Analysis was performed using SPSS Regression (Stepwise) and SPSS Frequencies for evaluation of assumptions. No assumptions were violated.

Table 9 shows that after all the variables have been included, Model 2 as a whole explains 22% of the variance in PPVT/TVIP scores (Ajusted $R^2 = .19$). In this model, maternal birth status and Teaching child verbal manners are significant predictors of children's receptive vocabulary. Maternal Birth Status makes the strongest unique contribution (Beta=-.35, p=.001). No other items made statistically significant contributions to the regression model.

Table 9.

Summary of Stepwise Regression Analysis for Variables Predicting Children's PPVT/TVIP Scores (N=76)

	B	Std. Error	B
Model 1			
Birth Status	-8.89	2.73	-.35**
Model 2			
Birth Status	-8.87	2.60	-.35**
Verbal manners	9.27	3.11	.31**

Note. R^2 = .22 for Model 2; Adj. R^2 = .20 for Model 2; * significant at the p<.05 level; **significant at the p<.01 level

Analysis 2

Stepwise regression analysis (MRA) was used to address the following follow-up question regarding Boehm-3: What is the strongest predictor of children's understanding of basic relational concepts?

Analysis was performed using SPSS Regression (Stepwise) and SPSS Frequencies for evaluation of assumptions. No assumptions were violated.

Table 10 shows that after all the variables have been included, Model 3 as a whole explains 30% of the variance in Boehm scores (Adjusted R^2= .27) . In Model 3, "using correct grammar/pronunciation", "teaching child songs/music", and maternal educational

attainment, are significant predictors of children's understanding of basic relational concepts. Using correct grammar and pronunciation makes the strongest unique contribution (Beta=.38, p=.000). No other items made statistically significant contributions to the regression model.

Table 10.

Summary of Stepwise Regression Analysis for Variables Predicting Children's Boehm-3 Scores (N=74)

	B	Std. Error	B
Model 1			
Caregiver uses correct grammar and pronunciation	34.36	9.12	.41**
Model 2			
Caregiver uses correct grammar and pronunciation	35.38	8.78	.42**
Teaching child songs or music	-3.64	1.39	-.27**
Model 3			
Caregiver uses correct grammar and pronunciation	32.04	8.60	.38**
Teaching child songs or music	-3.96	1.35	.005**
Maternal Educational Attainment	2.83	1.17	.02*

Note. R^2 = .30 for Model 3; Adj. R^2 = .27 for Model 3; * significant at the p<.05 level; **significant at the p<.01 level

Analysis 3.

Stepwise regression analysis (MRA) was used to address the following follow-up question regarding WJ/WM: What is the strongest predictor of children's ability to pronounce and recognize letters and words?

Analysis was performed using SPSS Regression (Stepwise) and SPSS Frequencies for evaluation of assumptions. No assumptions were violated.

Table 11 shows that after all the variables have been included, the model as a whole explains 8% of the variance in WJ/WM scores (Adjusted R^2= .07). In the model, working with child on arts and crafts is the only significant predictor of children's ability to recognize and pronounce letters and words (Beta=.28, p=.015). No other items made statistically significant contributions to the regression model.

Table 11.

Summary of Stepwise Regression Analysis for Variables Predicting Children's WJ/WM Scores (N=76)

	B	Std. Error	B
Model 1			
Worked with child on arts and crafts	6.71	2.69	.28*

Note. R^2 = .08; Adj. R^2 = .07 for Model 3; * significant at the p<.05 level

Research Hypothesis 2

This study hypothesized that within low-income families, the homes of mothers with more education provide significantly greater Home Support for the language and emergent literacy development of children than the homes of mothers with less education

A one-way between-groups analysis of variance (ANOVA) was conducted to explore the impact of maternal educational attainment on home support for language and emergent literacy development, as measured by the HSLEL scale. There was a statistically significant difference at the p<.017 level in HSLEL scores for the three educational attainment groups [$F(2,73)=7.09$, $p=.002$]. The magnitude of the difference in the means was large (eta square =.16). That is, 16% of the variance in HSLEL is explained by maternal educational attainment. The overall difference is attributable to significant differences in two of the three groups. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for mothers with less that high school education ($n=21$, $M=21.43$, $SD=4.80$) was significantly lower than the mean score of mothers with a high school education plus further training ($n=36$, $M=25.31$, $SD=3.54$). Mean scores of mothers with high school education only ($n=19$, $M=21.74$, $SD=5.06$) was also significantly lower from the mean score of mothers with a high school education plus further training. There was no significant difference between mean scores of mothers with less than high school education and mothers with high school education.

Therefore, the research hypothesis is supported. The homes of mothers with a higher educational attainment provide significantly greater Home Support for the

language and emergent literacy development of children than the homes of mothers with a lower educational attainment.

Research Hypothesis 3

This study hypothesized that within low-income families, US born mothers' homes provide significantly greater Home Support than the homes of Immigrant mothers.

An independent-samples t-test was conducted to compare the HSLEL scores for US Born mothers and Immigrant mothers. There was no significant difference in score for US Born mothers and Immigrant mothers.

Therefore, the research hypothesis is rejected. The homes of US born mothers do not provide higher support for language and emergent literacy compared to the homes of Immigrant mothers.

Research Hypothesis 4

This study hypothesized that within low-income families, children whose mothers have more education score significantly higher in language and emergent literacy development than children whose mothers have less education.

Three separate one-way between-groups analysis of variance (ANOVA) were conducted to explore the impact of maternal educational attainment on children's language and emergent literacy development, as measured by PPVT, Boehm-3, and WJ. There was a statistically significant difference at the $p<.017$ level in PPVT scores for the three educational attainment groups [$F(2,73)=5.65$, $p=.005$]. There was no statistically significant difference between group means in Boehm-3 and WJ/WM scores (See table

12). The magnitude of the difference in the means for PPVT/TVIP was moderate to large (eta square =.13). That is, 13% of the variance in PPVT scores is explained by maternal educational attainment.

Table 12.

Children's Language and Emergent Literacy Scores by Maternal Educational Attainment

	Less than HS			HS			HS+			ANOVA	
	n	*M*	*SD*	*n*	*M*	*SD*	*N*	*M*	*SD*	*F*	*Df*
PPVT	21	79.57	10.47	19	90.21	9.26	36	89.61	13.74	5.65	75**
Boehm	20	33.55	13.46	19	36.89	7.26	35	39.97	7.59	2.41	73
WJ	21	80.71	12.87	19	91.74	9.79	36	90.11	22.95	2.39	75

Note. ** Significant at the p< .017 level

Post-hoc comparisons using the Tukey HSD test were used to identify where the differences among the groups occurred. Post-hoc comparisons for PPVT scores indicated that the mean score for mothers with less than high school education (*n*=21, *M*=79.57, *SD*=10.47) was significantly lower than the mean scores of mothers with high school education only (*n*=19, *M*=90.21, *SD*=9.26), and from mothers with a high school education plus further training (*n*=36, *M*=89.61, *SD*=13.74). Mean scores of mothers with high school education only was statistically significantly higher than mothers with less than high school education but was not significantly different from mothers with high school education plus further training.

Therefore, the research hypothesis is partially supported. Children whose mothers have a higher educational attainment obtain significantly higher PPVT/TVIP scores compared to the score of children whose mothers have a lower educational attainment. There was no statistically significant difference between group means in Boehm-3 scores, and WJ/WM scores.

Research Hypothesis 5

This study hypothesized that within low-income families, children of US born mothers score significantly higher in language and emergent literacy development than children of Immigrant mothers.

An independent-samples t-test was conducted to compare children's language and emergent literacy scores (as measured by PPVT/TVIP, Boehm-3, and WJ/WM) for children of US Born mothers and children of Immigrant mothers. There was a statistically significant difference at the $p<.017$ level between PPVT/TVIP scores for children of US Born mothers (M=91.67, SD=12.57) and children of Immigrant mothers [M=82.78, SD=11.23; $t(74)=3.26$, p=.002]. The magnitude of the difference in the means is moderate to large (eta square =.13). That is, 13% of the variance in children's PPVT/TVIP scores is explained by maternal birth status. There was also a statistically significant difference at the $p<.05$ level between Boehm-3 scores for children of US Born mothers (M=39.80, SD=8.27) and children of Immigrant mothers [M=35.33, SD=10.50; $t(72)=2.02$, p=.047]. The magnitude of the difference in the means is small to moderate (eta square =.05). That is, 5% of the variance in children's Boehm-3 scores is explained by maternal immigrant status. There was no statistically significant difference between

WJ/WM scores for children of US Born mothers and children of Immigrant mothers (see Table 13).

Table 13.

Comparison of Means between Child's Outcomes by Maternal Birth Status

	US Born			Immigrant			T-test	
Measure	*n*	*M*	*SD*	*n*	*M*	*SD*	*T*	*Df*
PPVT-III or TVIP	36	91.67	12.57	40	82.78	11.23	3.26**	74
Boehm-3	35	39.80	8.27	39	35.33	10.50	2.02*	72
WJ or WM	36	90.78	18	40	85.35	18.35	1.30	74

Note. * Significant at the p<.05 level; **Significant at the p<.017 level

In conclusion, research hypothesis 5 was partially supported. The children of US Born mothers obtain significantly higher PPVT/TVIP and Boehm scores than the children of Immigrant mothers. The children of US Born mothers did not achieve significantly higher scores in the WJ/WM measure.

CHAPTER 5 – DISCUSSION

The following chapter begins with a brief summary of this research, and a list of the study's limitations. The overview is followed by a discussion about each of the hypotheses in light of the current findings, and concludes with contributions, needs for research, and implications for applied research and practice.

Summary of this Study

Within a low–income sample, the present research examined the relationships between home support for language and emergent literacy (henceforth, HSLEL), maternal characteristics (i.e., birth status, and educational attainment), and three specific language and emergent literacy skills at kindergarten entry: (1) receptive vocabulary, (2) understanding of basic relational concepts, and (3) ability to recognize and pronounce letters and words. In addition, the study explored how HSLEL and children's outcomes varied as a function of maternal characteristics.

The theoretical framework for this study is based on Bronfenbrenner's (1979, 1986) ecological theory of human development, which conceptualizes behavior as embedded and expressed in a specific environmental context (Bronfenbrenner, 1979). The theory suggests that the developmental changes that result from adult-child interactions in the most proximal setting of the home environment have consequences and impact children's functioning in more distal settings. Bronfenbrenner and Morris (2005) define proximal processes as enduring forms of interaction in the immediate

environment. The nature and extent of adult-child interactions are influenced by sociocultural background. In sum, Bronfenbrenner's ecological model allows the examination of how contextual factors (i.e. maternal characteristics) within proximal processes (i.e. HSLEL) impact the school readiness of preschool age children from low-income families.

This study hypothesized that within a low-income sample, (1) There is a significant, positive relationship between HSLEL and children's language and emergent literacy development, (2) The homes of mothers with more education provide significantly greater HSLEL for the language and emergent literacy development of children than the homes of mothers with less education, (3) US born mothers' homes provide significantly greater HSLEL than the homes of Immigrant mothers, (4) Children whose mothers have more education score significantly higher in language and emergent literacy development than children whose mothers have less education, (5) Children with US born mothers score significantly higher in language and emergent literacy development than children with Immigrant mothers.

The present study is primarily a correlational study. Through quantitative methods, whether and to what extent relationships existed between the study's variables was determined. The sample consisted of 76 mothers and 76 children. The study used existing coded data from CUA's Early Head Start Research Project for secondary analysis. All measures, procedures, and data analyses were approved by CUA's Institutional Review Board.

This study has two independent variables: Home Support for Language and Emergent Literacy (HSLEL), and Maternal Characteristics (i.e., birth status and educational attainment); and three dependent variables: (1) Children's receptive vocabulary; (2) Children's understanding of basic relational concepts, and (3) Children's ability to recognize and pronounce letters and words.

Data analyses included descriptive statistics, t-tests, ANOVA, Pearson correlation, and multiple regression analysis. Results revealed that as a group the children in this sample, especially children of Immigrant mothers, performed below national levels in all measures. Results also indicated that even within this low-income sample, maternal educational attainment was positively correlated with children's language and early literacy skills. In addition, maternal birth status was the strongest predictor of children's receptive vocabulary. Lastly, six specific HSLEL items from the scale were statistically significantly correlated with child outcomes.

The main conclusions of this study are that more study is needed to deepen our understanding of (1) the interplay between maternal characteristics (i.e., mother's education and birth status), and their children's language and emergent literacy skills; and (2) the interplay between maternal characteristics, home support for language and emergent literacy development, and children's language and emergent literacy skills. Finally, findings from this study underscore the need to consider the use of alternative measures to accurately evaluate the skills that children with this sample's characteristics possess prior entry to kindergarten.

The main contribution of this study is the identification of factors that help explain the variability of children's kindergarten entry skills within a low income sample. In addition, this study's sample characteristics highlight the fact that a low-income immigrant sample can be very diverse. This is valuable information for future research since we can no longer consider "immigrants" as a monolithic group, but rather as a heterogeneous group. This implies that it is necessary to explore in greater detail the variations within a low-income immigrant sample to be able to determine "what works for whom".

Study's Limitations

1. This study used preexisting data; therefore, research questions were conceptualized based on the measures available.
2. Home support for language and emergent literacy was identified by mothers' self-report. The possible influence of social desirability on their answers should be considered.
3. Variables such as maternal depression and stress, strong predictors of maternal engagement in home activities with their children, are beyond the scope of this study.
4. Maternal birth status (i.e. being US born or Immigrant) was reported by parents at baseline and does not address acculturation level. Future studies should include an acculturation measure to better understand the effect that acculturation has over maternal behavior, and whether or not mothers have been "Americanized"

through contact with the American culture and/or participation in programs such as Head Start and Early Head Start.

5. The dependent variables of this study, identified as language and emergent literacy related school readiness, represent only a few of the many components of school readiness.

Discussion of Research Hypotheses

In this section, each research hypothesis will be discussed based on the findings presented in the previous chapter. Major conclusions are also included.

Research Hypothesis 1

Research hypothesis 1 was partially supported. There were statistically significant correlations between individual items of HSLEL and child outcomes (see Table 6, previous chapter). There was no significant correlation between the total HSLEL scale and children's language and emergent literacy scores.

The most significant correlations will be discussed first, followed by plausible explanations for the lack of correlation between the total HSLEL scale and child outcomes. The latter discussion includes problems with assumptions, design, sample characteristics, procedures, and the dearth of previous research.

Significant Correlations between Individual HSLEL Items and Child Outcomes

Teaching the child verbal manners (Item #13), and owning children's books (Item #22) was statistically significantly and positively correlated with receptive vocabulary. Teaching child songs and music (Item #4), was negatively correlated with children's understanding of basic relational concepts. Parent using correct grammar and pronunciation (Item #14), getting books from the library (Item #19) and book ownership were positively correlated with children's understanding of basic relational concepts. Lastly, engaging in arts and crafts activities (Item #5), as well as owning children's books, were significantly and positively correlated with children's ability to pronounce and recognize letters and words.

A short version of the HSLEL Scale (i.e., "frequency of reading", "getting books from library", and "book ownership") was significantly correlated with children's language and emergent literacy skills. The correlation between this short version of the HSLEL scale and child outcomes is relevant because research indicates that accessibility to reading material (i.e. children's books) is usually associated with bookreading frequency (Raikes et al. 2006), and book reading is associated with children's language and emergent literacy skills. However studies have not focused exclusively on a low-income sample with a large percentage of children of Immigrant mothers. Therefore, the findings of the present study support previous research, and contributes to the field by demonstrating that within a low-income sample, book ownership, book reading, and children's language and emergent literacy skills are correlated. A large number of low-income families in this study reportedly owned children's books, and read to the child.

Books were reportedly available in all of the families in the sample (regardless of maternal birth status), and reading also occurred frequently. Sixty six percent of the parents (or someone else in the family) had read to the child within the past week, and fifty nine percent of the families reported having more than 26 children's book available at home. In addition, 65% have read something other than books to the child (e.g., Bible, children's magazines, newspaper). This finding indicates that even under the stresses of poverty, low-income families make an effort to have children's books at home and to read to their children.

Book ownership and book reading does not suffice, however. The challenge is to ensure that low-income families acquire reading material that is age appropriate, and that the joint reading process is meaningful. The latter point is made clear in the findings of this study. The HSLEL item "reading frequency" was correlated with child outcomes only when combined with other items (i.e., "getting books from library", "book ownership"). When "reading frequency" was examined in isolation, the item was not statistically significantly correlated with any child outcomes. This finding supports previous research. In their exhaustive literature review, Scarborough and Dobrich (1994) concluded that only about 8% of the variance in emergent literacy (or literacy outcomes) in children is explained by preschool children's access to books and book reading. Others do not share this pessimistic view, and maintain that even small effects of reading to preschoolers may have long-term consequences on children's reading skills (e.g. Lonigan, 1994). The present study provides evidence that when analyzed in isolation, access to books and book reading are not always correlated with language and literacy

outcomes. This finding is an indication that the development of language and emergent literacy skills is a complex process and cannot be understood based on isolated factors. Future research should consider exploring what kind of children's books is available at home, as well as the nature and quality of bookreading behavior.

Lastly, this study identified a series of items correlated with language and emergent literacy skills that haven't been addressed by previous research. Parent teaching verbal manners to child was significantly correlated with receptive vocabulary, and parent using correct grammar and pronunciation was significantly correlated with children's understanding of basic relational concepts. Caldwell and Bradley (2003) place these two items within the Language Stimulation subscale (or factor) of the Early Childhood HOME Inventory. The Language Stimulation factor "describes overt attempts by the parents to encourage language development through conversation, modeling, and direct teaching" (p.39). However, there is a dearth of research from other sources linking these items and children's language skills. The present study presents evidence of this link. Future research should explore why correct language use, and teaching child verbal manners may have an impact over children's receptive vocabulary.

The present study found an unexpected negative correlation between parent teaching child songs and music, and children's understanding of basic relational concepts. In other words, the more the parent taught songs and music to the child, the lower was the child's understanding of basic relational concepts. Future research should examine if similar negative correlations are found within a sample of this study's characteristics. If this negative correlation recurs, it would be indicative of a need to

study in-depth the relationship between teaching songs and music, and children's understanding of basic relational concepts.

Lastly, the present study found that engaging in arts and crafts activities was positively correlated with children's ability to pronounce and recognize letters and words. The relationship between working on arts and crafts activities and the development of written and oral language is not well studied. The positive correlation between teaching arts and crafts, and children's ability to recognize and pronounce letters and words suggest two different needs for research. First, there is a need to explore the possibility of a link between arts and crafts activities, and children's letter-word recognition skills. Second, future studies should examine in detail the role that structured activities at home (and possibly at child care settings) play over some children's language and emergent literacy skills.

Lack of Correlation between HSLEL Scale and Child Outcomes

In the following sub-section, the lack of correlation between the HSLEL scale and child outcomes will be discussed based on problems with assumptions, design, sample characteristics, procedures, and dearth of previous research

Assumptions

The literature reviewed (see Chapter 2) suggested a positive relationship between individual items of the HSLEL and child outcomes. This study's findings demonstrate that. Nevertheless, these individual items have not been combined to form a scale before.

One assumption of this study was that when combined, the items would still be correlated with child outcomes. This was not the case.

Bronfenbrenner's (1979, 1986) ecological theory of human development conceptualizes behavior as embedded and expressed in a specific environmental context (Bronfenbrenner, 1979). The theory suggests that the developmental changes that result from adult-child interactions in the most proximal setting of the home environment have consequences and impact children's functioning in more distal settings. Bronfenbrenner and Morris (2005) define proximal processes as enduring forms of interaction in the immediate environment. Another assumption of this study was that the frequency of adult-child interaction measured by the HSLEL was enduring. It is possible, however, that adult-child dyads had engaged in a certain activity in the past seven days, but that it was not a common occurrence in the household. In order for an activity to produce enduring effects and constitute enduring patterns of interaction, it has to occur frequently, not sporadically. Future studies should employ additional qualitative research methodologies (e.g., participant observation, video-taping, journal keeping) to better capture the frequencies of certain activities. Furthermore, the scope of activities evaluated by the HSLEL may be too narrow; therefore, the nature and extent of HSLEL activities that support and enhances the development of language and emergent literacy may not have been accurately captured.

Design and Sample Characteristics

This study's sample was small. Small sample sizes are sometimes unable to capture statistically significant results. Some authors (e.g. Keppel, 1991) recommend a larger sample size when conducting empirical research.

The child measures used in this study are very resistant to change. In order for an activity to have a real impact over child outcome, it has to occur frequently and consistently for a prolonged period of time. Future studies may consider a longitudinal design to capture the cumulative effect that a certain activity or activities have over an extended period of time.

This study used existing data, thus relied on the measures available. A variable that was not included because there was no instrument to measure it was social desirability of answers. Future research may want to include a measure to control for the possible effect of this variable.

Another variable to include in future research is the child's own interest in reading. Scarborough and Dobrich (1994) found that children's perceived interest was correlated with language and literacy outcomes, and that it even had a stronger relationship with child outcomes than frequency and quality of book reading. Similar findings have been reported by others (e.g., Fritjers et al., 2000; Payne et al., 1994; Senechal et al., 1996, 1998).

Procedures

A limitation of this study is the use of existing data derived from measures employed in the larger original EHS investigation. HSLEL scale items were taken from the EHS Parent Interview. This collection of items failed to form conceptually meaningful subscales. This finding may be suggestive that the scale as a whole combines too many and varied behaviors. Future researchers should consider constructing a shorter scale and/or examining specific behaviors in greater detail.

As noted before, the instrument used to measure home support for language and emergent literacy may have not been able to capture the real frequency of certain activities. In addition, the range of options may have been too narrow (e.g., Yes/No; Zero times, one to two times, three or more times) leading to lack of variability in the responses. A greater range of options may have helped increase variability. Since responses rely on self-report, social desirability may have contributed to a lack of variability. Future studies may add additional measures to triangulate data reported by self-report. Some of the measures could include the Marlowe-Crowne Social Desirability Scale (MCSDS) (Marlowe & Crowne, 1960) to test for socially-desirable responding. Individuals showing a high tendency to respond in a socially-desirable way may be eliminated from statistical analysis. Another option is trying to minimize socially-desirable responding by increasing the sense of anonymity and confidentiality of answers. This is more likely to happen if the interview is not conducted face-to-face.

Dearth of research

There are few studies focusing exclusively on the steps taken by low-income mothers to provide a home environment that supports language and emergent literacy development, and the language and emergent literacy skills of their children at kindergarten entry. There are even fewer studies in which half of the sample was immigrant. Results of a small body of research are likely to be tentative. Due to a lack of research, the hypotheses of this dissertation were based on a small number of early studies in this field. This may have led to inaccurate predictions.

In sum, the study's Research Hypothesis 1 was partially supported. The contributions of this finding are two-fold. On one hand, the fact that some individual indicators of HSLEL do correlate significantly with child outcomes present further evidence that book ownership, getting books from the library, and reading to children are important markers to consider when examining HSLEL. In addition, less researched indicators such as "working on arts and crafts", "teaching verbal manners", and "parent using correct grammar and pronunciation" suggest that there are other elements in the home environment that promote and support HSLEL. Future research should examine further these less common indicators to evaluate the ways in which they impact the development of language and emergent literacy skills. On the other hand, the HSLEL scale as a whole did not correlate significantly with child outcomes. This finding suggests the use of different methodological approaches to address and examine the nature and extent of HSLEL.

Research Hypothesis 2

Results indicate that the homes of mothers with a higher educational attainment provide significantly greater HSLEL than the homes of mothers with a lower educational attainment. Therefore the research hypothesis is supported. This finding is consistent with previous research in the field. More importantly, this finding contributes to the field by indicating that even within a low-income sample, maternal educational attainment makes a statistically significant difference in their children's language and emergent literacy skills.

Research indicates that mothers with a higher educational attainment are more likely to engage in language development activities such as frequent reading (Federal Interagency Forum on Child and Family Statistics, 2008), compared to mothers with lower educational attainment. Bracken and Fischel (2008) created a 10-item survey divided into three dimensions, which measured family reading behavior of over 200 preschool children from a low-income background. One of the dimensions was Parent–Child Reading Interaction (child's age at which the parent began reading to the child, the frequency with which the parent reads to the child, the duration of reading sessions with the child, the frequency of visits to the library, and the number of books in the home for the child's use). The authors found that overall, "parent education showed the strongest relationship with family reading behavior. Higher levels of parent education were associated with greater parent interest in reading, greater child interest in reading, and greater parent–child reading interactions" (Bracken & Fischel, 2008; p.57).

Parent's higher educational attainment is associated with better employment and earnings (Card, 1999). This was also observable in this study. Mothers with higher educational attainment had greater family incomes. Therefore, even in a low-income sample as this one, there is a relationship between education and income. However, all families in this study's sample were low-income families living at or below the Federal Poverty Level. The present study's finding is relevant because it indicates that in the absence of higher earnings and broader access to resources, compared to families not living in poverty, in this study better educated parents engaged more in home activities that supported the development of language and emergent literacy skills. In this study's case, these home activities were frequent and varied reading, visits to the library, teaching the alphabet, words, letters, numbers, and songs. Parents with a higher educational attainment were also more likely to use complex words and sentences when conversing, and to respond verbally to children's requests. Therefore, the fact that mothers with a higher educational attainment in this study scored higher in the HSLEL scale is consistent with other studies.

In sum, the present study extends previous research because the sample for this study presented unique characteristics. The sample consisted of low-income mothers only, and almost half of the sample was immigrant. When the effect of birth status was controlled for, educational attainment remained the strongest predictor of HSLEL. More research is needed to understand if there is a cause-effect relationship between specific aspects of higher maternal educational attainment, within a low-income sample, and HSLEL.

Research Hypothesis 3

Results from this study indicate that the homes of US born mothers do not provide higher support for language and emergent literacy compared to the homes of Immigrant mothers. This result is somewhat unexpected. This study's theoretical framework suggests that the child's immediate environment and the interactions within and across it are mediated by culture, socioeconomic status, race/ethnicity and historical times (Bronfenbrenner, 1979, 1986). One assumption of this study was that Immigrant mothers may have different belief systems and lifestyles when compared to US born mothers as a result of their cultural, ethnic, racial, and linguistic backgrounds. This assumption is based on past research. For example, Wasik and Hendrickson (2004) found that literacy practices "vary from one family to another, from one culture to another, and within cultures" (p.169). Others (e.g. Bornstein & Cote, 2001; Fulgini, 1998) have found that the behavior patterns of immigrant families adhere more to their cultural background than to the American society. In the context of literacy practices, in particular, there are studies that document strong family influences in literacy (Rosolova, 2007). That is, old literacy practices, such as those practiced in the country of origin, "intersect with new environments" (Rosovola, 2007). All these suggested that the support for language and emergent literacy that Immigrant mothers would provide would be different than that provided by US born mothers.

From a procedures point of view, it is possible that the HSLEL scale wasn't able to capture the diverse patterns of behavior between Immigrant and non-Immigrant

households. In addition, response to HSLEL scale items is based on self-report; therefore social desirability of answers may have also led to lack of variability.

If Immigrant mothers and US born mothers engaged with similar frequency in the activities measured by the HSLEL scale, then it is possible that the kind of activities measured by the HSLEL are also common in other cultures, or at least in the countries of origin from this sample. Future studies may want to delve into this possibility and add a follow-up question such as, "if you were you back in your homeland, would you engage in this kind of activity with the same frequency you do here in the US?" If most Immigrant mothers from a certain region or country answer "no" to this question, it would indicate a need to examine the impact of acculturation over maternal behavior. As mentioned in the Study's Limitations section, maternal birth status (i.e. being US born or Immigrant) was reported by parents at baseline and does not address acculturation level. Future studies should include an acculturation measure to better understand the effect that acculturation has over maternal behavior, and whether or not mothers have been "Americanized" through contact with the American culture and/or participation in programs such as Head Start and Early Head Start.

Research Hypothesis 4

Results from this study indicate that children whose mothers have higher educational attainment have significantly greater receptive vocabulary skills compared to children whose mothers have a lower educational attainment. Children of better educated mothers did not have significantly greater understanding of basic relational concepts, nor

greater ability to pronounce and recognize letters and words, compared to the children of less educated mothers; therefore, the research hypothesis is partially supported. This finding is consistent with the finding that better educated mothers provide greater HSLEL (Research Hypothesis 2).

Parental educational attainment is a natural marker of human capital because it serves as an indicator of "the extent to which parents can provide the skills and abilities that children need to achieve in school settings and later in their own employment" (Fulgini & Yoshikawa, 2003). In order for parents to be able to provide enriching experiences for their children, parents need to possess the knowledge and skills they are trying to transmit, or in their absence, have access to resources that can provide these enriching experiences (Bronfenbrenner, 1999). Mothers with higher educational attainment are more likely to provide a home environment with the kind of complex and lexically rich speech needed to support the process of vocabulary building. Other studies have found a correlation between maternal educational attainment, receptive vocabulary (Pan, Rowe, Spier, & Tamis-Lamonda, 2004), and verbal skills (e.g. Britto, Brooks-Gunn & Griffin, 2006). Likewise, Chall, Jacobs and Baldwin (1990) found that mother's education, among other factors, was the strongest predictor of children's vocabulary knowledge. In the present study, children whose mothers had a higher educational attainment showed evidence of better receptive vocabulary skills. This finding is consistent with the research described above. Therefore, the present study not only supports previous research, but expands knowledge in the field by documenting that a relationship between maternal educational attainment and children's receptive vocabulary

skills is also observable within a low-income sample with a high percentage of children of Immigrant mothers. This finding is a clear example of a factor that helps to explain the variability in language and emergent literacy skills that children of low-income families bring to their first day of school.

Children's understanding of relational concepts and children's ability to pronounce and recognize letters and words did not differ significantly by maternal educational attainment. Future research needs to explore why and in what specific cases maternal educational attainment help explain certain language and emergent literacy outcomes but not others. It is possible that there is a third variable that underlies both maternal educational attainment and children's performance in language and emergent literacy measures, that can help explain the relationship between these variables. Future research should aim at identifying the existence and possible effect of extraneous variables.

In sum, findings from Research Hypothesis 4 indicate that children of mothers with a higher educational attainment have significantly greater receptive vocabulary skills, compared to the children of mothers with a lower educational attainment. Future research needs to examine in greater detail the relationships between maternal educational attainment and receptive vocabulary skills in children from low-income backgrounds. In addition, more study is needed to understand why maternal educational attainment helps explain some of their children's language and emergent literacy outcomes (i.e., receptive vocabulary), but not others (i.e., children's understanding of relational concepts, children's ability to pronounce and recognize letters).

Research Hypothesis 5

The children of US born mothers had significantly better receptive vocabulary skills than the children of Immigrant mothers. Children of US born mothers also had a better understanding of basic relational concepts compared to the children of Immigrant mothers. When put into a regression equation, maternal birth status was the strongest predictor of children's receptive vocabulary skills. More study is needed to deepen our understanding of the interplay between maternal birth status and child outcomes. Children of US Born mothers did not have a significantly greater ability to recognize and pronounce letters and words, compared to the children of Immigrant mothers.

For both the PPVT/TVIP and Boehm-3 (i.e., receptive vocabulary, and ability to recognize letters and words, respectively) young children provide their answers by selecting one illustration from among choices. Anderson (2002) and others (e.g. Peña, Quinn, & Iglesias, 1992), have argued that children of Hispanic background may not be familiar with labeling or pointing to objects or actions, as required in the PPVT-III and Boehm-3. In this regard, Laing and Khami (2003), argue that errors in the PPVT-III may be a combination or a result of a deficit in receptive vocabulary, lack of familiarity with the task of pointing to pictures, and/or a lack of familiarity with English vocabulary. In this sample, other immigrant backgrounds include Asian (Pakistan and Afghanistan), West African (Ghana and Sierra Leone), and Eastern European (Bosnia). It is possible that as in the case of children of Hispanic background, children of Immigrant mothers from other parts of the world are also unfamiliar with the task of pointing and labeling objects. Therefore, findings from this study underscore the need to consider the use of

alternative measures to accurately evaluate the skills that children with this sample's characteristics possess prior to entry to kindergarten.

The finding discussed above indicates the need for a shift in the way that literacy is traditionally understood and measured. Street (1984) was among the first scholars to challenge the old conception of literacy (i.e., singular and autonomous) and suggest the existence of multiple literacies. Literacy conceptualized the "old way" is understood as the only kind of literacy, stable, based on mastering reading and writing text through a specific set of rules, and independent of social context. The concept of multiple literacies, on the other hand, goes beyond language alone and takes into account other modes of representation (e.g., visual, oral, digital), that "differ according to culture and context and have specific cognitive, cultural, and social effects" (Cope, & Kalantzis, 2000; p.5). Literacy, according to Street, "is always embedded within social institutions and, as such, is only knowable as it is defined and practiced by social and cultural groups. As such, literacy is best considered an ideological construct as opposed to an autonomous skill, separable from contexts of use" (Purcell-Gates, 2007; p.3). Therefore, there are not one, but multiple literacies that are shaped by and interpreted within very specific contexts and for different purposes. Purcell-Gates (2007), would argue that this study examines only one of many literacies, "academic literacy", in the old-fashioned way in which literacy was considered a singular, linear, acontextual, and autonomous skill. Academic literacy (or school literacy) refers to the literacy taught in schools, which is characterized as

> "a set of skills that can be applied across contexts. All students are taught the same skills in basically the same way, in the same order, and for the same purposes. Thus, literacy is

> taught in schools as if it were acontextual. Literacy is taught as if it – and by extension the skills of literacy – exists separately, outside of any social context, and can be simply inserted into, or applied to, different social contexts of use once it is acquired" (Purcell-Gates, Jacobson, & Degener, 2006; p.66).

According to Purcell-Gates, Jacobson, & Degener (2006), academic literacy is the literacy privileged (taught and measured) in school and valued by "the dominant mainstream social group". The result of this approach is that the persistent measurement of academic literacy disassociated of context and of the literacy practices of people of diverse sociocultural and sociolinguistic backgrounds perpetuates "the academic underachievement of students marginalized by language, gender, ethnicity, and race" (Purcell-Gates, 2007; p.6). In the context of this study, children with diverse sociocultural and sociolinguistic backgrounds (i.e., children of Immigrant mothers) may be outperformed by children of US born mothers in some language and emergent literacy measures because there is a better match between the latter's out-of-school literacies and academic literacy. In the same line, there may exist a mismatch between the children of Immigrant mothers out-of-school literacies and academic literacy. Under this conception, multiple literacies is perhaps a better theoretical framework to study the language and emergent literacy skills of a sample with a large number of diverse sociocultural and sociolinguistic backgrounds than the framework used in this study.

There was no significant difference between children's ability to recognize and pronounce letters and words by maternal birth status. Children in the present study had a mean standard score of 87.92 (*SD*= 18.26) in the WJ/WM. This mean falls at the 21th

percentile of the national sample, with children scoring almost 1.0 standard deviation below the national average. In other words, the average child in this sample, regardless of maternal birth status, had low letter-word identification skills. One reason why children lack good letter-word identification skills is because these skills may have not been taught to them. In this sample, however, sixty two percent of the mothers reported teaching letters and words three or more times a week to their children. Ninety five percent of the mothers reported teaching the alphabet. It is unexpected then, that children's ability to recognize and pronounce letters and words fell almost a standard deviation below the mean if the overwhelming majority of mothers in this study engaged in home activities that promoted children's letter-word recognition abilities. This inconsistency between child outcomes and maternal self-report about the activities they engage in with the child at home needs to be explored further.

In sum, findings discussed in this section identified another factor – maternal birth status - that explains, if only in part, the variability in children's language and emergent literacy skills at kindergarten entry. More study is needed to deepen our understanding of the interplay between the Immigrant experience and child outcomes. This information will allow for the creation of more individualized early childhood programs, and can potentially help increase the effectiveness of such programs. In addition, findings of the present study suggest that there is a need to use alternative measures to evaluate the langue and emergent literacy skills that children with this sample's characteristics possess prior to entry to kindergarten.

Exemplary cases

Although children in this sample as a group scored below national levels in all measures, some children scored at or above national levels (see Chapter 4). Within the group of children who scored at or above national levels, there are two cases worth highlighting. Research that has addressed variability in children's scores within a low-income sample usually present a deficit interpretation of the results. This trend may be explained in part by the low number of cases, within a low-income sample, that achieve scores as high as, or higher than children of more affluent backgrounds. Too few cases make quantitative statistical analyses more difficult, which could explain why these exemplary cases of success are underrepresented in the literature. The following two cases are presented in an effort to bring attention to those instances in which children from low-income samples do acquire and demonstrate proficiency in language and emergent literacy skills necessary for kindergarten entry. Future research should explore with greater detail why some children of low-income backgrounds succeed where others fail, and start focusing on what works for whom from strengths, not deficit, perspective.

Case 1. Child 1 was born to an Immigrant mother from South America with limited English proficiency. The child didn't attend any form of daycare prior entry to Kindergarten. Spanish was identified as the primary language spoken at home, and the mother answered the parent interview in Spanish. The child, however, was assessed in English. Being immigrant within a low-income sample is considered to be a risk factor. This may also lead to the prediction that a child raised in poverty is more likely to score below national levels in language and emergent literacy measures. Child 1, however,

scored in the 75th percentile in the PPVT/TVIP and in the 94th percentile in the Boehm. This means, that at a national level, only 25% of the children scored higher in receptive vocabulary compared to Child 1. Only 6% of the children in a national sample scored above Child 1 in understanding of basic relational concepts. The case raises many questions. If the child was growing up in a Spanish-speaking household, and did not attend any form of daycare, how and where did the child acquire the English language skills necessary to perform well above national levels? What was the role of other family members or friends in Child 1 English language and emergent literacy acquisition? What was the role of the community? Did the mother reach out to a strong community to ensure her child acquired the necessary English language skills for Kindergarten entry? Was the mother resourceful to the extent to which even with limited English proficiency, she was able to instill in her child the necessary language and emergent literacy skills for Kindergarten entry? Is this evidence of the strengths that immigrant families bring?

Child 1 scored in the 94th percentile of the Boehm-3 measure. This means that the child "knows most of the basic concepts, compared to age-level peers" (Boehm, 2001; p.60). Child 1's mother had completed high school and had received further training. When put into a regression equation, maternal educational attainment remains the strongest predictor of Boehm-3 scores. This case may be indicative that a higher educational attainment may buffer the effects that growing up in poverty and belonging to a minority group has on a child's development. This case also underscores the need to select better methodologies that will allow an in-depth understanding of the interplay between maternal characteristics and child outcomes. In addition, this case stresses the

need to examine the relationships between family strengths, home environment and child development of language and emergent literacy skills.

Case 2. Child 2 was born to a US born African American mother who had completed high school education plus further training. Child 2 did participate in childcare. Compared to age-level peers from a national sample, Child 2 scored in 75th percentile in the PPVT/TVIP, 87th percentile in the Boehm-3, and 86th percentile in the WJ/WM. Despite growing up in poverty and belonging to a minority group, this child shows evidence that he developed the necessary language and emergent literacy skills necessary for school entry. In this case, maternal educational attainment also seems to have acted as a buffer against the stresses and risks that growing up in poverty mean for children's development.

In sum, these exemplary cases illustrate that children growing up in poverty are able to acquire the necessary skills for school entry, and their home environments are supportive of this process. More research is needed to identify specific factors that are conducive to the acquisition of critical school-entry skills. In addition, more research is needed to identify the specific child characteristics and behaviors that lead to better language and emergent literacy outcomes. Furthermore, it is necessary to examine the child characteristics and behaviors that encourage parental involvement in language and emergent literacy activities in the home.

Contributions, Recommendations, and Implications for Applied Research and Practice

The main conclusions of this study are that more study is needed to deepen our understanding of (1) the interplay between maternal characteristics (i.e., mother's education and birth status), and their children's language and emergent literacy skills; and (2) the interplay between maternal characteristics, home support for language and emergent literacy development, and children's language and emergent literacy skills. This information will allow for the creation of more individualized programs, and can potentially help increase the effectiveness of early childhood programs. Finally, findings from this study underscore the need to consider the use of alternative measures to accurately evaluate the skills that children with this sample's characteristics possess prior to entry to kindergarten.

In the mid 80's, Street (1984) challenged the concept of literacy as a singular and autonomous skill, and proposed the existence of multiple literacies. An increasing number of researchers are embarking in the task of documenting, identifying, and increasing our understanding of multiple literacies (e.g., Purcell-Gates, 2007), and in the task of proposing new theoretical frameworks and methodologies to examine multiple literacies (e.g., Luke, 2003; Purcell-Gates, Jacobson, & Degener, 2006). Ethnographic and case study research are among the qualitative research methodologies currently recommended to provide a more comprehensive and culturally sensitive picture of the "literacy-as-social-practice paradigm" (Purcell-Gates, 2007).

Qualitative research comes with a series of limitations, such as focusing in very small samples at the time, which does not allow for generalizations, and in turn makes the

move from theory to practice more complicated. The implications for practice and instruction derived from the study of multiple literacies are yet to be determined. As for now, “this research stands on its own as literacy studies research and is interesting and significant in its own right” (Purcell-Gates, 2007; p.15). Despite the lack of an immediate application to practice and instruction, this kind of research is needed to deepen our understanding of the out-of-school literacies that children of diverse socioeconomic and sociolinguistic backgrounds bring to school. The underachievement of these children will persist while we continue to privilege and measure “academic literacy” without taking into account children’s out-of-school literacies, and the context in which they are going to put into use the newly learned “academic literacy”.

This study provides further evidence that children from low-income families, especially children of low-income Immigrant families, are outperformed in language measures by children from less disadvantaged families. It should be made clear, however, that these findings do not indicate that there is something wrong with these children or their families, nor imply that that these children are not capable of performing at or above the mean scores nationally. As Whitehurst et al (1994) clearly puts it “The skills that are assessed are products of experiences that have been rare for many children, that reflect values that may not be part of the cultural tradition of some parents, and that depend on patterns of interaction that may be difficult in the context of the stresses of poverty” (p. 544). The real problem is that once children start their formal schooling, their school success – as measured by continuous standardized testing – relies heavily on these academic skills. Therefore, the gap between children from more economically and

socially advantaged backgrounds increases every step of the way as the children progress through their schooling. This gap does not necessarily reflect deficiencies in children's abilities. Children from low-income families, and especially children from low-income immigrant families, have unique strengths and capabilities that are not measured or captured by standardized testing and the school curriculum. We still need to discover how to identify these unique characteristics, and how to integrate them with the demands of American education.

The American student body is becoming increasingly and exponentially diverse. Like US born children and children born to US born mothers, immigrant children and children of immigrant parents will someday join the workforce of the country. It is of utmost importance that these children develop the necessary abilities to join a skilled workforce, which will ultimately propel the economy of the country. The United States is a rich tapestry of different cultures that have come together to build a powerful country. Scholars and students of the social sciences need to start conducting studies to identify the skills, strengths, and ideals that newcomers bring, how they transmit those to their children, and how and in which contexts (if at all) their children are able to put those strengths to work.

In addition, future research should examine ways to integrate the out-of-school literacies, skills and strengths of Immigrant children and children of Immigrant parents to the school curriculum. Schools are not failing because children are not able to learn. Schools are failing because we don't have in-depth understanding of how to create a school system that embraces the wide variety of skills children bring to the table. Future

research should strive to understand the out-of-school literacies, skills and strengths immigrant families bring; how to enhance these sets of skills and strengths; and how to incorporate them into the American educational system.

Lastly, in this study, maternal educational attainment was one of the factors identified that can help to explain the variability in children's language and emergent literacy skills at kindergarten entry. Even within a low-income sample, maternal education made a statistically significant difference not only in home support for language and emergent literacy, but also in some language and emergent literacy measures. As discussed previously, more research (both qualitative and quantitative) is needed to understand the interplay between maternal educational attainment, and children's language and emergent literacy skills.

Past research has demonstrated that children at greatest cognitive risk due to low maternal educational attainment benefit the most from intergenerational programs when there is a special emphasis on educating caregivers on how to provide a rich and stimulating environment (e.g., Ramey & Ramey, 1998). Programs such as Early Head Start (EHS) and Head Start (HS), have demonstrated positive program impact not only for children, but for families as well. For example, studies using EHS data, report that when compared to a control group, EHS parents "were more emotionally supportive, provided more language and learning stimulation, read to their children more, and spanked less" (Love et al, 2005; p. 885). The EHS Prekindergarten Follow-up study (U.S. DHHS, 2006b) provides evidence showing that two years after completing EHS, EHS parents were more likely to be supportive of children's learning (i.e., daily reading,

supportive home environment, and teaching activities). In addition, another benefit emerged for parents: reduced risk of depression (Chazan-Cohen, et al., 2007).

The present study presents evidence that mothers with a higher educational attainment provide greater HSLEL compared to mothers with lower educational attainment. Studies such as the EHS study described above suggest that intergenerational programs provide parents with effective tools to create a home environment for their children that promote and support children's learning. Future research should explore if teaching mothers specific skills that promote and support children's learning, compensate for low maternal educational attainment.

In this study, group comparison statistical techniques revealed that the homes of mothers with a higher educational attainment provided significantly greater HSLEL than the homes of mothers with a lower educational attainment. Results from this study also indicate that children whose mothers have higher educational attainment have significantly greater receptive vocabulary skills compared to children whose mothers have a lower educational attainment. More research is needed to understand why the differences in HSLEL and receptive vocabulary occur. Future research should consider, for example, the use of qualitative research methods to better understand "how" and "what" type of questions (in contrast to "why" questions usually found in quantitative research).

Case study research allows for the "exploration of a bounded system or a case (or multiple cases) over time through detailed, in-depth data collection involving multiple sources of information rich in context" (Creswell, 1998; p.61). A case study can answer

questions such as: What are the characteristics of low-income, highly educated mothers? What are the characteristics of the learning activities they engage in with their children in the home setting? What is the meaning of the way in which low-income, highly educated mothers interact with their children in the home setting? What are the characteristics of the children of low-income, highly educated mothers? What are their attitudes toward language and emergent literacy activities at home? The same questions can be asked about mothers with less than high school education. The answers to these questions may provide an in-depth understanding of what exactly is happening in the home setting of mothers with different educational attainment. At the same time, it can potentially lead to the identification of extraneous variables. In the case of this study, the relationship between maternal educational attainment and HSLEL may be explained due to the existence of other cofounding variable that wasn't considered or was unknown.

One variable that wasn't explored in this study is the child's attitudes, motivation, and own interest in language and emergent literacy related activities. Are the children of better educated mothers more receptive to mother-initiated language and emergent literacy activities? Why? Do they initiate language and emergent literacy activities more often than the children of less educated mothers? How? In what ways? What is the meaning of the way in which children of low-income, highly educated mothers respond to language and emergent literacy activities in the home setting?

In this study, the children of US born mothers had significantly better receptive vocabulary skills, and better understanding of basic relational concepts compared to the children of Immigrant mothers. However, this information only indicates that a difference

exists. It does not provide an in-depth understanding of why this is as it is. Future research should consider qualitative research, in particular ethnography, to obtain detailed information about a specific cultural or social group. Ethnography can allow for the examination of the "meanings of behavior, language, and interactions of the culture-sharing group" (Creswell, 1998; p.58). An ethnographer observes people's behaviors and patterns of interactions in their day-to-day settings for a prolonged period of time. This allows the researcher to identify "pervasive patterns such as life-cycles, events, and cultural themes" (Creswell, 1998; p.59). Ethnography would allow to explore questions such as: What are the cultural patterns and perspectives of low-income Centro-American mothers in their home setting? Using the home setting as a cultural system, in what roles do Western African mothers and their children participate? What are the differences/similarities among low-income Immigrant mothers? What are the differences/similarities in their behaviors, beliefs, and attitudes in relation to HSLEL? The answers to these types of questions provide a better understanding of the context in which children of Immigrant mothers are raised, and consequently, can lead to the further exploration of the kind of activities mothers from different cultural groups engage in with their children in the home setting.

Research that stems from answers to the questions posed by the research methods described above may lead to studies that explore if the activities Immigrant mothers engage in with their children promote and support the kind of language and emergent literacy skills needed for kindergarten entry in the U.S., what kind of skills- related to language and emergent literacy- do Immigrant mothers transmit to their children, and

whether or not these skills can be incorporated to and strengthened by the school curriculum.

Studies using qualitative research methodologies, such as case studies and ethnographies, and conceptual frameworks such as the ones proposed by Luke (2003), and Purcell-Gates, Jacobson, and Degener (2004), for example, may provide detailed information on the kind of curriculum and instructional approaches that work best for a specific group of families. This kind of research may help to create more effective intergenerational programs, because they provide specific information of "what works for whom".

Early childhood programs aimed at servicing low-income families are and will continue to see an exponential increase in the cultural and linguistic diversity of the population they serve. These programs can no longer work under the idea that they serve a homogeneous group of people, or that one curriculum and instructional approach is effective for all. The present study shows evidence that there is great diversity within a low-income sample, even within a low-income immigrant sample. When there is a miss-match between out-of-school literacies, and academic literacy, it becomes even more important to target primary caregivers in tandem with children in early childhood programs. Early childhood programs will need to start building a stronger bridge between children's early experiences and the skills these children are expected to have mastered before kindergarten entry. One way to strengthen that bridge is to help parents provide the kind of environmental support that is conducive to the development of the necessary language and emergent literacy skills needed for kindergarten entry.

APPENDIX A

Home Support for Language and Emergent Literacy (HSLEL) Scale

1	0-3	In the past week, have you or someone in your family read to (CHILD)?
2	0-3	In the last week, have you or someone else in the family told child a story?
3	0-3	In the last week, have you or someone else in the family taught child letters, words or numbers?
4	0-3	In the last week, have you or someone else in the family taught child songs or music?
5	0-3	In the last week, have your or someone else in the family worked on arts and crafts with child?
6	0-3	In the last week, have you or someone else in the family played with toys or games indoors with child?
7	0-3	In the last week, have you or someone else in the family played a game, sports, or exercised together with child?
8	0-3	In the last week, have you or someone else in the family took child along while doing errands (e.g. post office, bank, store)?
9	Yes/No	In the last week, have you or someone else in the family involved child in household chores (e.g. cooking, cleaning, setting table, caring for pet)
10	Yes/No	In the last week, have you or someone else in the family taken or arranged to take (CHILD) to any type of a museum such as a children's museum, science, art, or history museum?
11	Yes/No	In the last week, have you or someone else in the family read anything other than books with your child?
12	Yes/No	Now that (CHILD) is about to go to kindergarten, have you (or another adult or older child) started teaching (him/her) letters in the alphabet?
13	Yes/No	Parent teaches child simple verbal manners
14	Yes/No	Caregiver uses correct grammar and pronunciation
15	Yes/No	Parent encourages child to talk and takes time to listen
16	Yes/No	When speaking of child, caregiver's voice conveys positive feeling
17	Yes/No	Is the child allowed to decide what foods (he/she) eats at breakfast and lunch?
18	Yes/No	Caregiver uses complex sentence structure and some long words in conversing
19	Yes/No	Do you get books from the library?
20	Yes/No	Do you get books from the bookstore?
21	Yes/No	Do you get books from other places?
22	0-4	How many books do you own? (1-10, 11-25, 26-50, 50+)

APPENDIX B

An independent-samples t-test was conducted to compare items #1 through #9 scores for US Born mothers and Immigrant mothers. There was no significant difference in scores for US Born mothers and Immigrant mothers (Table 1a).

Table 1.

Percentage of Cases for Each Value of the variable, and Group comparison with Birth Status and Maternal Educational Attainment as Grouping Variables. Items 1 through 9 from the HSLEL Scale (3-point items only).

		Percentage of respondents			Group Comparison	
		Frequency per week			Sig. ≠	Sig. ≠
Item #	Activity	Zero	1 to 2	3+	Birth_St	Edu
1	read to child	3.95	30.26	65.79	NS	NS
2	told story	17.1	57.9	25	NS	NS
3	taught letters	7.9	30.3	61.8	NS	.004*
4	songs/music	15.8	40.8	43.4	NS	NS
5	arts/crafts	34.2	42.1	23.7	NS	NS
6	games indoors	6.6	14.5	78.9	NS	.003*
7	exercise/sports	15.8	39.5	44.7	NS	NS
8	Errands	5.3	31.6	63.2	NS	NS
9	Chores	7.9	25	67.1	NS	NS

*significant at the p<.017 level; NS= non-significant result; N=76; values of the variable: Zero=0, 1 to 2=1, 3+=2; Birth_St= Birth Status (US Born=0, Immigrant =1), Edu= Educational Attainment (<High School= 1, High School=2, High School+=3)

A one-way between-groups analysis of variance (ANOVA) was conducted to explore the impact of maternal educational attainment on items 1 through 9 from the HSLEL scale (Table 1). Primary caregivers were divided into three groups according to their level of educational attainment (Group 1: less than high school education; Group 2: high school education; Group 3: high education plus further training). There was a statistically significant difference at the p<.05 level in items #3 (taught letters) scores for the three educational attainment groups [$F(2,73)=6.47$, $p=.004$]. The magnitude of the difference in the means was large (eta square =.14). That is, 14% of the variance in item 3 (taught letters) is explained by maternal educational attainment. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for mothers with high school education only ($n=19$, $M=1.21$, $SD=.63$) was significantly lower than those with more education ($n=36$, $M=1.78$, $SD=.49$).

There was a statistically significant difference at the p<.05 level in item #6 (games indoors) scores for the three educational attainment groups [$F(2,73)=6.06$, $p=.007$]. The magnitude of the difference in the means was large (eta square =.17). That is, 17% of the variance in item 6 (games indoor) is explained by maternal educational attainment. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for mothers with high school education only ($n=19$, $M=1.42$, $SD=.77$) was significantly lower than those with more education ($n=36$, $M=1.94$, $SD=.23$).

Items 10 through 21 (Yes/No items) N=76

An independent-samples t-test was conducted to compare scores on items #10 through #21 for US Born mothers and Immigrant mothers. There was no significant

difference in scores for US Born mothers and Immigrant mothers (Table 2).

Table 2.

Percentage of Cases for Each Value of the Variable, and Group Comparison with Birth Status and Maternal Educational Attainment as Grouping Variables. Items 10 through 21 from the HSLEL Scale (Yes/No items only)

		Engaged in Activity		Group Comparison	
Item #	Activity	% Yes	% No	Sig. ≠ Birth_St	Sig. ≠ Edu
10	Museum	50	50	NS	.014**
11	other than books	64.5	35.5	NS	NS
12	Taught ABC	94.7	5.3	NS	.044*
13	verbal manners	77.6	22.4	NS	NS
14	correct grammar	98.7	1.3	NS	NS
15	talk/listen	85.5	14.5	NS	NS
16	positive feeling	96.1	3.9	NS	NS
17	Choice foods	78.9	21.1	NS	NS
18	Complex structure	94.7	5.3	NS	NS
19	books library	39.5	60.5	NS	NS
20	books bookstore	63.2	36.8	NS	NS
21	books other	60.5	39.5	NS	NS

** significant at the p<.017 level, *significant at the p<.05 level; %= percentage of respondents; N=76; NS= non-significant result; values of the variable: Yes=1, No=0; Birth_St= Birth status (US Born=0, Immigrant =1), Edu= Educational Attainment (<High School= 1, High School=2, High School+=3)

A one-way between-groups analysis of variance (ANOVA) was conducted to explore the impact of maternal educational attainment on items #10 through #21 from the HSLEL scale (Table 2). There was a statistically significant difference at the p<.017 level in item #10 (museum) scores for the three educational attainment groups

[$F(2,73)=4.50$, $p=.014$]. The magnitude of the difference in the means was moderate (eta square =.12). That is, 12% of the variance in item #10 (museum) is explained by maternal educational attainment. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for mothers with high school education only ($n=19$, $M=.42$, $SD=.51$) was significantly lower than those with more education ($n=36$, $M=.67$, $SD=.48$). The mean scores of mothers with less that high school education ($n=21$, $M=.29$, $SD=.46$) did not differ significantly from either mothers with high school education only or mothers with high school education plus further training.

There was a statistically significant difference at the $p<.05$ level in item #12 (taught alphabet) scores for the three educational attainment groups [$F(2,73)=3.26$, $p=.044$]. The magnitude of the difference in the means was moderate (eta square =.09). That is, 9% of the variance in item #12 (taught alphabet) is explained by maternal educational attainment. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for mothers with high school education only ($n=19$, $M=.84$, $SD=.38$) was significantly lower than mothers with higher educational level ($n=36$, $M=1$, $SD=.00$). The mean scores of mothers with less than high school education ($n=21$, $M=.95$, $SD=.22$) did not differ significantly from either mothers with high school education only or mothers with high school education plus further training.

Item #22 (book ownership), 4-point item, N=76

An independent-samples t-test was conducted to compare item #22 (book ownership) scores for US Born mothers and Immigrant mothers. There was a significant

difference in scores for US Born mothers (*n*=36, *M*=2.06, *SD*=.96) and Immigrant mothers [*n*=40, *M*=1.40, *SD*=.98; *t*(74)=2.95, *p*=.004 (Table 3). The magnitude of the difference in the means was moderate (eta square =.10). That is, 10% of the variance in item #22 (book ownership) is explained by maternal immigrant status.

Table 3.

Percentage of Cases for Each Value of the Variable, and Group Comparison with Birth Status and Maternal Educational Attainment as Grouping variables. Item #22 (book ownership) from the HSLEL Scale, 4-point item.

		Percentage of Respondents				Group Comparison	
		Number of books in the home				Sig. ≠	Sig. ≠
Item #	Activity	1-10	11-25	26-50	50+	Birth_St	Edu
22	Book ownership	14.5	26.3	32.90	26.30	.004**	.022*

** significant at the p<.017 level, *significant at the p<.05 level; N=76; NS= non-significant result; values of the variable: 1 to 10 books=0, 11 to 25 books= 1, 26 to 50 books=2, 50+ books=3; Birth_St= Birth status (US Born=0, Immigrant =1), Edu= Educational Attainment (<High School= 1, High School=2, High School+=3)

A one-way between-groups analysis of variance (ANOVA) was conducted to explore the impact of maternal educational attainment on item #22 (book ownership) from the HSLEL scale (Table 3). There was a statistically significant difference at the p<.05 level in item #22 (book ownership) scores for the three educational attainment groups [*F*(2,73)=4.04, *p*=.02]. The magnitude of the difference in the means was

moderate (eta square =.11). That is, 11% of the variance in item #22 (book ownership) is explained by maternal educational attainment. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for mothers with less than high school education (*n*=21, *M*=.1.29, *SD*=.96) was significantly lower than the mean scores of mothers with high school education plus further training (*n*=36, *M*=2.03, *SD*=.97). The mean scores of mothers with high school education only (*n*=19, *M*=1.58, *SD*=1.02) did not differ significantly from either mothers with less than high school education or mothers with high school education plus further training.

REFERENCES

Administration for Children and Families. (2002). *Making a difference in the lives of infants and toddlers and their families: The impacts of Early Head Start*. Washington, DC: U.S. Department of Health and Human Services.

Alexander, K. L. & D. R. Entwisle (1993). First-grade classroom behavior: Its short- and long-term consequences for school performance. *Child Development 64*(3), 801-814.

Anderson, R. (2002). Practical assessment strategies with Hispanic students. In A. E. Brice (Ed.), *The Hispanic child* (pp. 143-184). Boston: Allyn & Bacon.

Anderson-Yockel, J., & Haynes, W. (1994). Joint picture-book reading strategies in working-class African American and white mother-toddler dyads. *Journal of Speech, Language, and Hearing Research, 37*, 583-593.

Aron, A., & Aron, E.N. (1997). *Statistics for the behavioral sciences: A brief course*. Upper Saddle River, NJ: Prentice Hall.

Bartlett, M.S. (1954). A note on the multiplying factors for various chi square approximations. *Journal of the Royal Statistical Society, 16* (Series B), 296-298.

Biemiller, A. (2001). Teaching Vocabulary: Early, direct, and sequential. *The American Educator, 25*(1), 24-28.

Boehm, A. (2000). *Boehm Test of Basic Concepts – Third Edition.* New York: The Psychological Corporation.

Boehm, A. (2001). *Boehm-3 Preschool 1. Boehm Test of Basic Concepts – Third Edition. Examiner's Manual*. New York: The Psychological Corporation.

Bornstein, M.H. & Cote, L.R. (2001). Mother-infant interaction and acculturation: I. Behavioural comparisons in Japanese American and South American families International *Journal of Behavioral Development, 25*(6), 549–563.

Bornstein, M.H., Deater-Deckard, K. & Lansford, J.E. (2007). Immigrant families in contemporary society. In J. E. Lansford, K. Deater-Deckard, & M. H. Bornstein (Eds.), *Immigrant families in contemporary society* (pp. 1-6). New York: Guilford Press.

Bradley, R. H. (2000). Deceived by omission: The difficulty of matching measurement and theory when assessing the home environment. *Journal of Research on Adolescence, 10*, 307-314.

Britto, P. R., Brooks-Gunn, J., & Griffin, T. (2006). Story readers and story tellers: Stylistic differences in low income, young, African-American mothers' reading styles. *Reading Research Quarterly, 41*, 68-89.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: research perspectives. *Developmental Psychology, 22*(6), 723-742.

Bronfenbrenner, U. (1988). Interacting systems in human development. Research paradigms: present and future. In N. Bolger, A. Caspi, G. Downey, & M. Moorehouse (Eds.), *Persons in Context: Developmental Processes*. Cambridge: Cambridge University Press.

Bronfenbrenner, U. (1993). The ecology of cognitive development: Research models and fugitive findings. In R.H. Wozniak, & K.W. Fischer (Eds.). *Development in context: Acting and thinking in specific environments* (pp. 3-44). Hillsdale, NY: Lawrence Erlbaum Associates.

Bronfenbrenner, U. (1999). Environments in developmental perspective: Theoretical and operational models. In S. L. Friedman & T. Wachs (Eds.), *Measuring environments across the lifespan: Emerging methods and concepts* (pp. 3–28). American Psychological Association: Washington DC.

Bronfenbrenner, U. & Crouter, A.C. (1983). The evolution of environmental models in developmental research. In W. Kessen (Series Ed.) & P.H. Mussen (Vol. Ed.), *Handbook of child psychology: Vol. 1. History, theory, and methods* (4th ed., pp. 357-414). New York: Wiley.

Bronfenbrenner, U. & Morris, P.A. (2005) The Bioecological Model of Human Development. In W. Damon & R.M. Lerner (Eds.-in-Chief) & R.M. Lerner (Vol. Ed.), *Handbook of child psychology: Vol. 1. Theoretical Models of Human Development* (6th Ed., pp. 793-828). New York: Wiley.

Brooks-Gunn, J., & G. J. Duncan (1997). The effects of poverty on children. *The Future of Children, 7*(2), 55-71.

Brooks-Gunn, J., & Markman, L. B. (2005). The contribution of parenting to ethnic and racial gaps in school readiness. *The Future of Children, 15*(1), 139–168.

Bruner, C., Floyd, S., & Copeman, A. (2005). *Seven things policy makers need to know about school readiness*. Des Moines, IA: State Early Childhood Policy Technical Assistance Network.

Bush, G. W. (2002, April 3). *President and Mrs. Bush promote early childhood education initiative.* Speech posted by the Office of the Press Secretary. Retrieved July 6, 2008, from http://www.whitehouse.gov/news/releases/2002/04/20020403-6.html

Caldwell, B. M., &Bradley, R. H. (1984). *Home observation for measurement of the environment*. Little Rock: University of Arkansas at Little Rock, Center for Child Development and Education.

Caldwell, B. M., & Bradley, R. H. (2001). *HOME Inventory administration manual. learning to use the HOME.* University of Arkansas at Little Rock, Little Rock, AR.

Caldwell, B. M., & Bradley, R. H. (2003). *Administration manual: Home Observation for Measurement of the Environment*. Little Rock, AR: University of Arkansas at Little Rock.

Card, D. (1999). The causal effect of education on earnings. In O. Ashenfelter and D. Card (Eds.), *Handbook of Labor Economics (Vol. 3, pp.1801-1863)* Elsevier Science.

Chall, J.S., Jacobs, V.A., & Baldwin, L.E. (1990). *The Reading Crisis: Why Poor Children Fall Behind*. Cambridge, MA: Harvard University Press.

Champion, T. B., Hyter, Y. D., McCabe, A., & Bland-Stewart, L. M. (2003). ‘‘A matter of vocabulary’’: Performance of low-income African American Head Start children on the Peabody Picture Vocabulary Test-III. *Communication Disorders Quarterly, 24*(3), 121–127.

Chase-Lansdale, P. L., Mott, F. L., Brooks-Gunn, J., & Phillips, D. A. (1991). Children of the national longitudinal survey of youth: A unique research opportunity. Special section: Secondary data analyses in developmental psychology. *Developmental Psychology, 27*(6), 918-931.

Chase-Lansdale, P.L., Valdovinos D’Angelo, A., & Palacios, P. (2007). A multidisciplinary perspective on the development of young children in Mexican American immigrant families. In J. E. Lansford, K. Deater-Deckard, & M. H. Bornstein (Eds.), *Immigrant families in contemporary society* (pp. 137-156). New York: Guilford Press.

Chazan-Cohen, R., Ayoub, C., Alexander Pan, B., Roggman, L., Raikes, H., Mckelvey, et al. (2007). It takes time: impacts of early head start that lead to reductions in maternal depression two years later. *Infant Mental Health Journal, 28*(2), 151–170.

Clay, M.M. (1979). *The early detection of reading difficulties: A diagnostic survey with Reading Recovery procedures* (2nd ed.). Auckland: Heinemann.

Cohen, J.W. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed). Hillsdale, NJ: Lawrence Erlbaum Associates.

Cope, B., & Kalantzis, M. (Eds.) (2000). *Multiliteracies: Literacy learning and the design of social futures*. New York, NY: Routledge.

Crowne, D.P. & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24*(4), 349-354.

Diamond, K. E., Reagan, A J., & Bandyk, J. E. (2000). Parents' conceptions of kindergarten readiness: Relationships with race, ethnicity, and development. *The Journal of Educational Research, 94*(2), 93-100.

Dickinson, D.K., McCabe, A., & Essex, M.J. (2006). A window of opportunity we must open to all: The case for preschool with high-quality support for language and literacy. In Dickinson, D.K., & Neuman, S.B. (Eds.), *Handbook of Early Literacy Research* (Vol. 2, pp. 11-28). New York: The Guilford Press.

Duncan, G. J., Dowsett, C. J., Claessens, A., Magnuson, K., Huston, A. C., Klebanov, P., et al. (2007). School readiness and later achievement. *Developmental Psychology, 43*(6), 1447-1459.

Dunn, L., & Dunn, L. (1981). *Peabody Picture Vocabulary Test—Revised*. Circle Pines, MN: American Guidance Service.

Dunn, L., Padilla, E., Lugo, D., & Dunn, L. (1986). *Test de Vocabulario en Imágenes Peabody—Adaptación Hispanoamericana* [Peabody Picture Vocabulary Test—Latin American adaptation]. Circle Pines, MN: American Guidance Service.

Dunn, L. M., & Dunn, L. M. (1997). *Peabody Picture Vocabulary Test-Third Edition.* Circle Pines, MN: American Guidance Service.

Earls, F., & Buka, S. L. (1997). *Project on human development in Chicago neighborhoods: Technical report*. Rockville, MD: National Institute of Justice.

Farah, M.J., Betancourt, L., Shera, D.M., Savage, J.H., Giannetta, J.M., Brodsky, N.L., et al. (2008). Environmental stimulation, parental nurturance and cognitive development in humans. *Developmental Science, 11*(5), 793-801.

Farkas, G. & Hibel, J. (2008). Being unready for school: Factors affecting risk and resilience. In A. Booth, & A. C. Crouter (Eds.), *Disparities in School Readiness: How Families Contribute to Transitions into School* (pp. 3-30). New York: Lawrence Erlbaum Associates.

Fernandez, M. C., Pearson, B. Z., Umbel, V. M., Oller, D. K., & Molinet-Molina, M. (1992). Bilingual receptive vocabulary in Hispanic preschool children. *Hispanic Journal of the Behavioral Sciences, 14*, 268-276,

Freeman, R. (1996). Why do so many young American men commit crimes and what might we do about it? *Journal of Economic Perspectives, 10*(1), 25–42.

Fritjers, J.C., Barron, R.W. & Brunello, M. (2000). Direct and mediated influences of home literacy and literacy interest on pre-readers' oral vocabulary and early written language skill. *Journal of Educational Psychology, 92*, 466-477.

Fuligni, A.J. (1998). The adjustment of children from immigrant families. *Current Directions in Psychological Science, 7*(4), 99-103.

Fuligni, A.J., & Yoshikawa, H. (2003). Socioeconomic resources, parenting, and child development among immigrant families. In Bornstein, M.H., & Bradley, R.H. (Eds.), *socioeconomic status, parenting, and child development* (pp.107-124). Mahwah, NJ: Lawrence Erlbaum Associates.

Gee, J.P. (2001). A sociocultural perspective on early literacy development. In S. B. Neuman & D.K. Dickinson (Eds.), *Handbook of Early Literacy Research (30-42)*. New York, NY: The Guilford Press.

Graue, E. (2006). The answer is readiness - now what is the question? *Early Education and Development, 17*(1), 43–56.

Greenfield, P.M., & Cocking, R.C. (1994). *Cross-cultural roots of minority child development*. Hillsdale, NJ: Erlbaum.

Harradine, C. C., & Clifford, R. M. (1996, April). *When are children ready for kindergarten? Views of families, kindergarten teachers, and child care providers*. Paper presented at the annual meeting of the American Educational Research Association, New York, NY. (ERIC Document Reproduction Service No. ED 399 044)

Harris, K., & Knudsen-Lindauer, S. L. (1988). Parental and teacher priorities for kindergarten preparation. *Child Study Journal, 18* (2), 61-73.

Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children.* Baltimore, MD: Paul H. Brookes Publishing Co.

Hart, B., &. Risley, T.R. (1999). T*he Social World of Children Learning to Talk*. Baltimore, MD: Paul H. Brookes Publishing Co.

Hernandez, D.J, Denton, N.A., & Macartney, S.E. (2007). Family circumstances of children in immigrant families: looking to the future of America. In J. E. Lansford, K.D. Deater-Deckard, & M.H. Bornstein (Eds.), *Immigrant Families in Contemporary Society* (pp. 9-29) New York: Guilford Press.

Hill, S. L. (2000). Language, behavior, and neurodevelopmental delay in children of adolescent mothers. Unpublished Dissertation, University of Washington, Seattle, WA.

Hoff, E. (2006). Environmental supports for language acquisition. In D.K. Dickinson & S.B. Neuman (Eds.), *Handbook of Early Literacy Research* (Vol. 2, pp. 163-172). New York: The Guilford Press.

Hofferth, S. L., Davis-Kean, P., Davis, J., & Finkelstein, J. (1997). *The child development supplement to the panel study of income dynamics 1997 user guide*. Survey Research Center Institute for Social Research, The University of Michigan. Ann Arbor: MI. Retrieved August 14, 2008 Available at http://psidonline.isr.umich.edu/CDS/

Huaqing Qi, C., Kaiser, A.P., Milan, S., & Hancock, T. (2006). Language performance of low-income African American and European American preschool children on the PPVT–III. *Language, Speech, and Hearing Services in Schools, 37*, 5–16.

Infant Health and Development Program. (1990). Enhancing the outcomes of low birthweight, premature infants: A multisite, randomized trial. *Journal of the American Medical Association, 263*, 3035-304.

Federal Interagency Forum on Child and Family Statistics (2008). *America's children: Key national indicators of well-being 2007*. Washington, DC: U.S. Government Printing Office. Retrieved August 13, 2008, from http://www.childstats.gov/pdf/ac2007/ac_07.pdf

Jacobson Chernoff, J., Flanagan, K.D., McPhee, C., and Park, J. (2007). *Preschool: First Findings from the Third Follow-up of the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B)*. (NCES 2008-025). Washington, DC: National Center for Education Statistics.

Kagan, S.L. (1990) Readiness 2000: rethinking rhetoric and responsibility, *Phi Delta Kappan, 72*, 272-279.

Kagan, S.L. (1992) Readiness past, present and future: Shaping the agenda. *Young Children, 48*(1), 48–53.

Kagan, S. L. (1994). Readying schools for young children. *Phi Delta Kappan, 76*(3), 226-238.

Kagan, S.L., Moore, E., & Bredekamp, S. (Eds.) (1995). *Reconsidering children's early learning and development: Toward shared beliefs and vocabulary*. Washington, DC: National Education Goals Panel.

Kaiser, H. (1970). *A second generation Little Jiffy. Psychometrika, 35*, 401-415.

Kaiser, H. (1974). *An index of factorial simplicity. Psychometrika, 39*, 31-36.

Karmiloff, K. & Karmiloff-Smith, A. (2001). *Pathways to Language: From Fetus to Adolescent*. Cambridge, MA: Harvard University Press.

Keppel, G. (1991). *Design and Analysis: A Researcher's Handbook* (3rd ed). Englewood Cliffs: Prentice Hall.

Kim, J., Murdock, T. B., & Choi, D. (2005). Investigation of parents' beliefs about readiness for kindergarten: An examination of National Household Education Survey (NHES: 93*). Educational Research Quarterly, 29*, 3-17.

Knudsen-Lindauer, S.L. & Harris, K. (1989) Priorities for Kindergarten Curricula: views of parents and teachers. *Journal of Research in Child Education, 4*, 51-61.

Laing, S., & Khami, A. (2003). Alternative assessment of language and literacy in culturally and linguistically diverse populations. *Language, Speech, and Hearing Services in Schools, 34*, 44-55.

Laird, J., Lew, S., DeBell, M., and Chapman, C. (2006). *Dropout Rates in the United States: 2002 and 2003 (NCES 2006-062)*. U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved August 8, 2008 from http://nces.ed.gov/pubs2006/2006062.pdf

Landry, S.H., & Smith, K.E. (2006). The influence of parenting on emerging literacy skills. In D.K. Dickinson & S.B. Neuman (Eds.), *Handbook of Early Literacy Research* (Vol. 2, pp. 135-148). New York: The Guilford Press.

Landry, S.H., Smith, K.E., & Swank, P.R. (2006). Responsive parenting: establishing early foundations for social, communication, and independent problem-solving skills. *Developmental Psychology, 42*(4), 627–642.

Landry, S.H. & Smith, K.E. (2008). Family processes that support school readiness: Specific behaviors and contextual conditions that set this process in motion. In A.Booth, & A. C. Crouter (Eds.), *Disparities in School Readiness: How Families Contribute to Transitions into School* (pp.85-107). New York: Lawrence Erlbaum.

Lansford, J.E., Deater-Deckard, K.D., & Bornstein, M.H. (2007). *Immigrant Families in Contemporary Society*. New York: Guilford Press.

Lareau, A. (2003). *Unequal Childhoods: Class, Race, and Family Life*. Berkeley and Los Angeles, CA: University of California Press.

Lee, V. E., & Burkam, D.T. (2002). *Inequality at the Starting Gate: Social Background Differences in Achievement as Children Begin School*. Washington, DC: Economic Policy Institute.

Leventhal, T., Martin, A., & Brooks-Gunn, J. (2004). The EC-HOME across five national data sets in the 3rd to 5th year of life. *Parenting: Science and Practice, 4*(2-3), 161-188.

Lewit, E. M., & Baker, L. S. (1995). School readiness. *Future of Children, 5*(2), 128-139.

Linver, M.R., Brooks-Gunn, J. & Cabrera, N. (2004). The Home Observation for Measurement of the Environment (HOME) Inventory: The derivation of conceptually designed subscales. *Parenting: Science and Practice, 4*(2-3), 99-114.

Lochner, L., & Moretti, E. (2004). The effect of education on crime: evidence from prison inmates, arrests, and self-reports. *American Economic Review, 94*(1), 155-189.

Lollock, L. (2001). *The foreign born population in the United States: March 2000, Current Population Reports, P20-534*. U.S. Census Bureau, Washington, D.C. Retrieved August 8, 2008 from http://www.census.gov/prod/2000pubs/p20-534.pdf

Lonigan, C.J. (1994). Reading to preschoolers exposed: Is the Emperor really naked? *Developmental Review 14*, 303-323.

Love, J., et al (1996-2001). *National Early Head Start Parent Interview for Parents of Pre-K Children*. National Early Head Start Research and Evaluation Project (EHSRE) Parent Interviews and Child Assessments, 1996 – 2001. Mathematica Policy Research, Inc.

Love, J.M., Kisker, E.E., Ross, C., Raikes, H., Constantine, J., Boller, K., et al (2005). The effectiveness of early head start for 3-year-old children and their parents: Lessons for policy and programs. *Developmental psychology, 41*(6), 885-901.

Luke, A. (2003). Literacy and the other: A sociological approach to literacy research and policy in multilingual societies. *Reading Research Quarterly, 38*(1), 132-141.

Maxwell, K., & R.M. Clifford. 2004. Research in review: School readiness assessment. *Young Children, 59*(1): 42–46.

McGuinness, D. (2005). *Language development and learning to read: The scientific study of how language development affects reading skill*. Cambridge, MA: The MIT Press.

McNaughton, S. (1996). Ways of parenting and cultural identity. *Culture and Psychology, 2*(2), 173-201.

Meisels, S. J. (1996). Performance in context: Assessing children's achievement at the outset of school. In A. J. Sameroff & M. M. Haith (Eds.), *The five to seven year shift: The age of reason and responsibility* (pp. 410–431). Chicago: University of Chicago Press.

Meisels, S. J. (1999). Assessing readiness. In R. C. Pianta & M. J. Cox (Eds.), *The transition to kindergarten* (pp. 39-66). Baltimore, MD: Paul H. Brookes Publishing Co.

National Center for Education Statistics (1998). *Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K), fall 1998, unpublished tabulations*. U.S. Department of Education. Retrieved April 11, 2006 from http://nces.ed.gov/programs/digest/d05/tables/dt05_048.asp

National Education Goals Panel (1997). *Getting a good start in school.* Washington, DC: U.S. Government Printing Office. Retrieved May 21, 2007 from www.negp.gov/reports/good-sta.htm

Neuman, S.B., Hagedorn, T., Celano, D., & Daly, P. (1995). Toward a collaborative approach to parent involvement in early education: A study of African-American teenage mothers. *American Educational Research Journal, 32*, 801-827.

Neuman, S.B. & Celano, D. (2001). Access to print in low- and middle-income communities: An ecological study of 4 neighborhoods. *Reading Research Quarterly, 36,* 8-26.

NICHD Early Child Care Research Network. (2000). The relation of child care to cognitive and language development. *Child Development, 71*, 960-980.

NICHD Early Child Care Research Network (2005). Pathways to reading: The role of oral language in the transition to reading. *Developmental Psychology, 41*, 428–442.

Nord, C.W., Lennon, J., Liu, B., & Chandler, K. (1999). *Home literacy activities and signs of children's emerging literacy, 1993 and 1999*. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement. NCES 2000-026.

Oxford, M. & Spieker, S (2006). Preschool language development among children born to adolescent mothers. *Journal of Applied Developmental Psychology, 27*, 165-182.

Pallant, J. (2005). *SPSS survival manual* (2nd ed.). New York: Open University Press.

Pan, B. A., Rowe, M. L., Spier, E., & LeMonda, C. (2004). Measuring productive vocabulary of toddlers in low-income families: Concurrent and predictive validity of three sources of data. *Journal of Child Language, 31*, 587-608.

Payne, A.C., Whitehurst, G.J. & Angell, A.L. (1994). The role of literacy environment in the language development of children from low-income families. *Early Childhood Research Quarterly, 9*, 427-440.

Pedhazur, A.J. (1997). *Multiple regression in behavioral research: Explanation and prediction* (3rd ed.). Orlando, FL: Harcourt Brace College Publishers.

Pence, K.L., & Justice, L.M. (2008). *Language development from theory to practice.* Upper Saddle River, NJ: Pearson Education

Peña, E.D., Quinn, R., & Iglesias, A. (1992). The application of dynamic methods to language assessment: A nonbiased procedure. *The Journal of Special Education, 26*(3), 269-280.

Peña, E.D. (2007). Lost in translation: Methodological considerations in cross-cultural research. *Child Development, 78*(4), 1255–1264.

Purcell-Gates, V., Jacobson, E., & Degener, S. (2006). *Print literacy development: Uniting the cognitive and social practice theories*. Cambridge, MA: Harvard University Press.

Purcell-Gates, V. (Ed.) (2007). *Cultural Practices of Literacy: Case Studies of Language, Literacy, Social Practice, and Power*. Mahwah, New Jersey: Lawrence Erlbaum Associates.

Raikes, H., Pan, B. A., Luze, G., Tamis-LeMonda, C., Brooks-Gunn, J., Constantine, J., et al. (2006). Mother-child bookreading in low-income families: Correlates and outcomes during the first 3 years of life. *Child Development, 77*, 924-953.

Ramey, C.T. & Ramey, S.L. (1998) Prevention of intellectual disabilities: Early interventions to improve cognitive development. *Preventive Medicine, 27*(2), 224-232.

Restrepo, M.A., Schwanenflugel, P.J., Blake, J., Neuharth-Pritchett, S., Cramer, S.E., & Ruston, H.P. (2006). Performance on the PPVT–III and the EVT: Applicability of the measures with African American and European American preschool children. *Language, Speech, and Hearing Services in Schools, 37*, 17-27.

Rhode Island KIDS COUNT (2005). *Getting Ready: Findings from the National School Readiness Indicators Initiative - A 17 State Partnership*. Providence, Rhode Island: Rhode Island KIDS COUNT.

Rimm-Kaufman, S. E., & Pianta, R. C. (2000). An ecological perspective on children's transition to kindergarten: A theoretical framework to guide empirical research. *Journal of Applied Developmental Psychology, 21*, 491-511.

Rosolova, K. (2007). Literacy practices in a foreign language: Two Cuban immigrants. In V. Purcell-Gates (Ed.), *Cultural Practices of Literacy: Case Studies of Language, Literacy, Social Practice, and Power (pp. 99-113)*. Mahwah, New Jersey: Lawrence Erlbaum Associates.

Sanford DeRousie, R.M., & Durham, R.E. (2008). Processes and factors influencing family contributions to school readiness. In A.Booth, & A. C. Crouter (Eds.), *Disparities in School Readiness: How Families Contribute to Transitions into School* (pp.299-317). New York: Lawrence Erlbaum.

Santrock, J. W. (2004). Life-Span Development (9th ed.). New York: Mc Graw Hill

Scarborough, H.S. & Dobrich, W. (1994) On the efficacy of reading to preschoolers. *Developmental Review, 14*, 245-302.

Schmitz, M.F. (2005). Cultural and acculturation differences in trajectories of HOME environment inventory scores for Latino children and families. *Journal of Family Issues, 26*(5), 568-583.

Schrauf, R.W., & Navarro, E. (2005). *Using existing tests and scales in the field. Field Methods*, *17*(4), 373-393.

Senechal, M., LeFevre, J.A., Hudson, E. & Lawson, E.P. (1996) Knowledge of Storybooks as a Predictor of Young Children's Vocabulary. *Journal of Educational Psychology, 88*(3), 520-536

Senechal, M., LeFevre, J., Thomas, E., & Daley, K. (1998). Differential effects of home literacy experiences on the development of oral and written language. *Reading Research Quarterly, 32*, 96-116.

Senechal, M., Ouellette, G., & Rodney, D. (2006). The misunderstood giant: On the predictive role of vocabulary to reading. In S.B. Neuman & D. Dickinson (Eds.), *Handbook of Early Literacy Research* (Vol. 2., pp. 173-182). New York, NY: Guilford Press.

Shields, M.K. & Behrman, R.E. (2004). Children of immigrant families: Analysis and recommendations. *The Future of Children, 14*(2), 4-15.

Shonkoff, J., & Phillips, D. (Eds.). (2002). *From neurons to neighborhoods: The science of early childhood development*. Washington, DC: National Academies Press.

Snow, C. E., Burns, M. S., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children.* Washington DC: National Research Council, National Academy Press.

Stipek, D. J., & Ryan, R. H. (1997). Economically disadvantaged preschoolers: Ready to learn but further to go. *Developmental Psychology, 33*, 711-723.

Storch Bracken, S.S. & Fischel, J.E. (2008) Family reading behavior and early literacy skills in preschool children from low-income backgrounds. *Early Education and Development, 19*(1), 45–67

Storch, S. A., & Whitehurst, G. J. (2002). Oral language and code-related precursors to reading: Evidence from a longitudinal structural model. *Developmental Psychology, 38*, 934-947.

St.Pierre, R. G., Ricciuti, A.E., & Rimdzius, T. A. (2005). Effects of a family literacy program on low-literate children and their parents: findings from an evaluation of the Even Start family literacy program. *Developmental Psychology, 41*(6), 953-970.

Street, B.V. (1984). *Literacy in theory and practice*. London: Cambridge University Press.

Tabachnick, B.G. & Fidell, L.S. (2001). *Using multivariate statistics* (4th ed.). Boston: Allyn and Bacon.

Tabors, P., Roach, K., & Snow, C. (2001). Home language and literacy environment: Final results. In D. Dickinson, & P. Tabors (Eds.), *Beginning literacy with language: Young children learning at home and school* (pp. 111-138). Baltimore, MD: Paul H. Brookes Publishing.

Tamis-LeMonda, C. S., Bornstein, M. H., & Baumwell, L. (2001). Maternal Responsiveness and Children's Achievement of Language Milestones. *Child Development, 72*(3), 748-767.

Thompson, R. (2001). Development in the First Years. *The Future of Children, 11*(1), 20-33.

Tomayo, J. M. (1987). Frequency of use as a measure of word difficulty in bilingual vocabulary test construction and translation. *Educational and Psychological Measurement, 47*, 893-902.

Tudge, J.R.H., Odero, D.A., Hogan, D.M., & Etz, K.E. (2003). Relations between the everyday activities of preschoolers and their teachers' perceptions of their competence in the first years of school. *Early Childhood Research Quarterly 18*(), 42–64.

Tunmer, W.E., Herriman, M.L., & Nesdale, A.R. (1988). Metalinguistic abilities and beginning reading. *Reading Research Quarterly, 23*, 134-158.

Umbel, V.M., Pearson, B.Z., Fernández, M.C., & Oller, D.K. (1992). Measuring Bilingual Children's Receptive Vocabularies. *Child Development, 63*, 1012-1020.

U.S. Census Bureau (2004). *U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin*. Retrieved April 27, 2007 from http://www.census.gov/population/www/projections/usinterimproj/natprojtab01a.pdf

U.S. Census Bureau (2005). *School Enrollment--Social and Economic Characteristics of Students: October 2005, Detailed Tables*. U.S. Census Bureau, Population Division,
Education & Social Stratification Branch. Retrieved August 8, 2008, from http://www.census.gov/population/www/socdemo/school/cps2005.html

U.S. Department of Education. *Even Start*. Retrieved July 21, 2009 from http://www.ed.gov/programs/evenstartformula/index.html

U.S. Department of Health and Human Services, Administration for Children and Families (2005, May). *Head Start Impact Study: First Year Findings*. Washington, DC. Retrieved August 13, 2008 from http://www.acf.hhs.gov/programs/opre/hs/impact_study/reports/first_yr_finds/first_yr_finds.pdf

U.S. Department of Health and Human Services, Administration for Children and Families (2006a, February). *Head Start Performance Measures Center Family and Child Experiences Survey (FACES 2000) Technical Report*. Washington, DC. Retrieved April 15, 2008 from http://www.acf.hhs.gov/programs/opre/hs/faces/reports/technical_2000_rpt/tech2k_final2.pdf

U.S. Department of Health and Human Services, Administration for Children and Families (2006b, April). *Research to Practice: Preliminary Findings from the Early Head Start Prekindergarten Follow-up.* Retrieved August 4, 2009 from http://www.earlychildhoodrc.org/events/presentations/raikes_followup.pdf

U.S. Department of Health and Human Services, Administration for Children and Families (2006c, December). *FACES Findings: New Research on Head Start Outcomes and Program Quality*. Washington, DC. Retrieved April 15, 2008 from http://www.acf.hhs.gov/programs/opre/hs/faces/reports/faces_findings_06/faces_findings_bw.pdf

Vernon-Feagans, L., Odom,E., Pancsofar, N., & Kainz, K. (2008). Farkas and Hibel and a Transactional/Ecological Model of Readiness and Inequality. In A.Booth, & A. C. Crouter (Eds.), *Disparities in School Readiness: How Families Contribute to Transitions into School* (pp. 61-78). New York: Lawrence Erlbaum.

Wall, S. Taylor, N. E., Liebow, H., Timberlake, E. M., & Farber, M. Z. (2002*). The inclusion of infants and toddlers with disabilities in Early Head Start programs. Final report of the Catholic University Early Head Start Research Project.* Administration for Children and Families, U.S. Department of Health and Human Services.

Wall, S. M., Timberlake, E. M., Farber, M. Z., Sabatino, C. A., Liebow, H., Smith, N. M., et al. (2000). Needs and Aspirations of the Working Poor: Early Head Start Program Applicants. *Families in Society: The Journal of Contemporary Human Services, 81*, 412-421.

Wall, S., Timberlake, E., Taylor, N., Farber, M., Liebow, H.;,Riggs, T., et al. (2006, June). *A longitudinal study of pathways to the kindergarten readiness of Early Head Start research children with and without disabilities.* Final Report of The Catholic University of America Early Head Start Research Project. Washington, DC.

Wasik, B.H. & Hendrickson, J.S. (2004). Family Literacy Practices. In C. Adisson Stone, E.R. Silliman, B.J. Ehren, & K. Apel (Eds.), *Handbook of Language and Literacy: Development and Disorders (pp. 154-174)*. New York, NY: The Guilford Press.

Webster, R.E. (1994). Woodcock-Johnson Psycho-Educational Test Battery-Revised. In D.J. Keyser & R.C. Sweetland (Ed.S.), *Test Critiques: Vol. 10*, 804-815.

West, J., Denton, K., & Germino-Hausken, E. (2000). America's Kindergartners. Washington, DC: National Center for Educational Statistics. Retrieved August 13, 2008, from http://nces.ed.gov/pubs2000/2000070.pdf

Whitehurst, G. J. (1997). Language processes in context: Language learning in children reared in poverty. In L. B. Adamson & M. S. Pomski (Eds), *Research on communication and language disorders: Contribution to theories on language development* (pp. 233–266). Baltimore, MD: Brookes.

Whitehurst, G.J., Epstein, J.N., Angell, A.L., Payne, A.C., Crone, D.A. & Fischel, J.E. (1994). Outcomes of an emergent literacy intervention in Head Start. *Journal of Educational Psychology, 86*(4), 542-555.

Whitehurst, G.J., & Lonigan, C.J. (1998). Child development and Emergent Literacy. *Child Development, 69*(3), 848-872.

Whitehurst, G.J. & Lonigan, C.J. (2002). Emergent Literacy: Development from prereaders to readers. In S.B. Neuman, & D.K. Dickinson (Eds.), *Handbook of Early Literacy Research* (Vol. 1, pp. 11-29). New York: The Guilford Press.

Williams, K.T., & Wang, J.J. (1997). *Technical References to the Peabody Picture Vocabulary Test-Third Edition (PPVT-III).* Bloomington, MN: Pearson Assessments

Woodcock, R. W., & Mather, N. (1989). WJ–R–R Tests of Cognitive Ability Standard Battery: Examiner's manual. In R. W. Woodcock & M. B. Johnson, *Woodcock–Johnson Psycho-Educational Battery—Revised.* Allen, TX: DLM Teaching Resources.

Woodcock, R. W., & Mather, N. (1989–1990). WJ–R–R Tests of Achievement: Examiner's manual. In R. W. Woodcock & M. B. Johnson, *Woodcock–Johnson Psycho-Educational Battery—Revised.* Allen, TX: DLM Teaching Resources.

Woodcock, R.W., & Johnson, M. B. (1989a). *Woodcock-Johnson–Revised Tests of Achievement.* Itasca, IL: Riverside Publishing.

Woodcock, R.W., & Johnson, M. B. (1989b). *Woodcock-Johnson–Revised Tests of Cognitive Ability.* Itasca, IL: Riverside Publishing.

Woodcock, R. W., & Johnson, M.B. (1989). *Woodcock–Johnson Psycho-Educational Battery—Revised.* Allen, TX: DLM Teaching Resources.

Woodcock, R. W., & Muñoz, A. F. (1996). Bateria Woodcock–Muñoz Pruebas de Habilidad Cognoscitiva- Revisada. Chicago7 Riverside Publishing.

Woodcock, R. W., & Muñoz-Sandoval, A.F. (1996a). Bateria Woodcock-Muñoz: Pruebas de aprovechamiento–revisada. Itasca, IL: Riverside Publishing.

Woodcock, R. W., & Muñoz-Sandoval, A.F. (1996b). Bateria Woodcock-Muñoz: Pruebas de habilidad cognitiva–revisada. Itasca, IL: Riverside Publishing.

Woodcock, R. W., & Muñoz-Sandoval, A.F. (1996c). Pruebas de habilidad cognitiva–revisada: Supplemental manual. Itasca, IL: Riverside Publishing.

Woodcock, R. W., & Muñoz-Sandoval, A. F. (2001). *Woodcock-Muñoz Language Survey: Spanish Form—Normative Update*. Itasca, IL: Riverside Publishing.

Wright, C., Diener, M., & Kay, S. (2000). School readiness of low-income children at risk for school failure. *Journal of Children and Poverty, 6*, 99-117.

Zill, N. & Resnick, G. (2006). Emergent literacy of low-income children in Head Start: relationships with child and family characteristics, program factors, and classroom quality. In *D.K. Dickinson and S.B. Neuman (Eds.), Handbook of Early Literacy Research* (Vol. 2, pp. 347-371). New York: The Guilford Press.