

**A Home-Based Language Intervention with Mexican Immigrant  
Mothers and Their Children**

BY

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THESIS

Submitted as partial fulfillment of the requirements  
for the degree of Doctor of Philosophy in Special Education  
in the Graduate College of the  
University of Illinois at Chicago, 2019

Chicago, Illinois

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I would like to dedicate this thesis to my family and friends. Thank you to my husband Cory for your support and laughter as we have gone through this adventure together. It has been nothing but surprises as we have embarked on this journey together the past few years. Thank you to my children, Christian, Gabrielle, and Frances. Your flexibility, laughter, curiosity, and understanding have made this worthwhile. I also want to thank the rest of my family who have cheered me on throughout this process, especially my parents. To my dad, who has always encouraged me to see the beauty in my identity as a *Mexicana* and to be proud of my roots. For my mom, who has always motivated me to never stop dreaming. To my friends, thank you for your words of wisdom, patience, and advice, you have all helped me achieve my ultimate goal. Thank you!

## ACKNOWLEDGEMENTS

I would like to thank everyone who has helped me achieve my goal through their advice, reassurance, and patience. To my advisor and committee chair, Dr. Marie Tejero Hughes, thank you for your unconditional support, advice, and patience throughout my years in the program. I am grateful for the opportunities and advice as I started and completed my program. To my committee members, Dr. Michelle Parker-Katz, Dr. Elizabeth Talbott, Dr. Arthi Rao, and Dr. Sandy Magaña, thank you for your support and feedback on my work.

Thank you to my doctoral cohort-Wendy Gonzales, Molly Buren, Maria Soria, Michael Scaletta, Doug Fowler, and Eryn Van Acker. You have all provided support throughout the years, whether it was a class project, presenting at a conference or enjoying time together. Thank you for your support, wisdom, and encouragement. To Wendy and Molly, thank you so much for your advice, help and assistance throughout this project. You have truly made this process smoother and your unconditional patience has been more than I could have even imagined. I am so grateful to have you in my life.

I must also acknowledge Geraldo Tobon, my graduate student who effortlessly along with Wendy helped with data coding. I want to thank you for your time and support. I also want to thank the mothers and their children who participated in this study. Thank you for opening your doors and experience while working with you in your homes. It has been an amazing experience learning with you and in turn you have helped to support the practice of home-based interventions.

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**LIST OF ABBREVIATIONS**

CLD	Culturally and Linguistically Diverse
EI	Early Intervention
EL	English Learners
IEP	Individual Education Plan
L1	Native Language
L2	Second Language
MLU	Mean Length of Utterance
OT	Occupational Therapy
SALT	Systematic Analysis of Language Transcripts
SES	Socio-Economic Status
SLP	Speech-Language Pathologist
TPBA-2	Transdisciplinary Play-based Assessment-2
US	United States

## SUMMARY

A reality for a child's academic future is that his or her language abilities are an essential component to academic success (Hammer et al., 2017). Children with language delays can present with academic difficulties as they begin their academic trajectories, but when identified early and provided with appropriate speech and language services, their needs can be met and many of their difficulties can be overcome. The same can be said for Latino children with language delays raised in Spanish-speaking home environments, as long as their unique language needs are met in a culturally appropriate manner. When providing speech and language services to this population, several factors should be considered, such as home language use and the family's goals for their children. Besides considering a child's academic needs, the parent-child relationship with the native language requires careful consideration when providing interventions (Durán, Hartzheim, Lund, Simonsmeier, & Kohlmeier, 2016). As a result, it is important to examine how to best meet the speech and language needs of the growing Latino population within the United States.

The current investigation examines the changes in Mexican immigrant mothers' language when a Spanish language-based intervention was provided in their homes. The study was designed to answer three research questions that focused on the changes of the quality and quantity of the mother's language, the mother's use of the taught language strategies, and the mother's perceptions of the intervention. Three dyads, that consisted of Mexican immigrant mothers and their respective preschool-aged children, in a large urban Midwestern city participated in the study. The eight intervention sessions were focused on using home-based routines and materials to address language goals that the mothers identified at the start of the investigation.

### SUMMARY (continued)

Throughout the intervention, the mothers were provided with specific language strategies with which to address the language needs of their children during play-based activity.

Three case studies were developed one for each dyad based on interviews, observations, documentary analysis, and conversational analysis. In order to analyze the mothers' use of language strategies, play-based assessments were completed at the start and end of the intervention. Throughout the language intervention sessions, language samples from the mothers were both video and audio recorded and analyzed to determine changes and use of the language-based strategies. The interviews provided an understanding of the language needs of each child and of the mothers' perceptions and understanding of home-based language interventions. A cross-case analysis, or a comparison of each case, was also conducted to provide a deeper understanding of the mothers' experiences with the intervention.

Findings from the investigation indicated that the mothers demonstrated changes in their overall language behaviors from the initial to the final intervention session. Specific changes were seen in the ways the mothers interacted with their child, specifically in how they asked questions and used directive speech. In addition, the mothers demonstrated changes in their use of language strategies throughout the intervention. One change noted was how the mothers interacted with their child during play, and the second was how they reported feeling using the strategies. Based on the interviews with each mother of their perspective of the intervention, they provided examples of how they implemented the language strategies at home. In addition, four factors—collaboration, respect, role, and confidence—were important aspects of the mothers' experiences. The findings from this study continue the research on ways to develop home-based language interventions that are culturally appropriate for this population.

## **CHAPTER I**

### **INTRODUCTION**

Latinos comprise one of the largest growing populations in the United States (U.S.) today. While the Latino population reached 58 million in 2016 (Flores, 2017), it is notable that 35 million are aged 35 and younger and account for 25% of school-aged children in the US (Lopez, Krogstad, & Flores, 2018). As the Latino population continues to increase in the US, it is also expected that the number of Latino children receiving speech and language services will also increase. Many of these Latino children will be exposed to Spanish at home and will be Spanish speakers (Cycyk, Bitetti, & Hammer, 2015). As a result, it is predicted that the demographics of the students served by speech language pathologists (SLPs) will become more culturally and linguistically diverse (CLD) (Caesar, 2013). Therefore, it is important to examine how to best meet the speech and language needs of this growing Latino population and to develop home-based language interventions that are culturally appropriate.

There were more Latino children living in poverty than any other racial or ethnic group of children in the US (Lopez & Velasco, 2011), with the current poverty rate of Latino children under the age of 18 at 32% (Stepler & Brown, 2016). Since the population of Latinos is predicted to increase, there is a concern, if the poverty rates remain the same, there will be an even larger number of Latino children in poverty in the future. There are many complex effects of poverty that impact the development of infants and toddlers and include significant stressors on families, which in turn can influence education and employment opportunities (Corr, Santos, & Fowler, 2016). Not only does living in poverty impact families, but the education level of Latinos also influences their earning potential; it is estimated that 62% of Latinos in the US have a high school degree or less compared to 14% who have a bachelor's degree or higher (Stepler &

Brown, 2016). This educational level also affects the types of higher paying and professional jobs that can be obtained (Cycyk et al., 2015), as well as the academic and social resources to which families have access (Terry, Connor, Thomas-Tate, & Love, 2010). For example, preschool-aged children whose parents have higher levels of education are exposed to and use a higher-level vocabulary before starting their education careers (van Kleeck, 2014). As a result, special attention should be directed towards Latino children who live in poverty as their academic, social, and health outcomes are more vulnerable (Roseberry-McKibbin, 2015) compared to children from a higher socio-economic status (Terry et al., 2010). Compounding this issue is the access to and quality of health care, often due to a family's lack of English proficiency or insurance, that Latino children have compared to White children who present with developmental delays or autism (Parish, Magaña, Rose, Timberlake, & Swaine, 2012).

Although Latinos have origins from a variety of backgrounds, which include Mexican, Puerto Rican, Cuban, Dominican, as well as Central and South American, in the US, the largest Latino population are from Mexico (Flores, 2017). In addition, the family's acculturation, or the ability to incorporate their own practices or cultures with that of the new culture and the family's child-interactions vary within families (Zungia, 2011). For example, some families value a collectivist cultural orientation (focused on child interdependence or group harmony) compared to other families who value an individualist cultural orientation (focused on child independence), and this will vary based on the family's level of education and acculturation (van Kleeck, 2013).

As the population of Latinos in the US continues to increase, the statistics also include immigrant families and first- and second-generation families whose home language is Spanish (Wood, Diehm, & Callender, 2016). While statistics report that over the past 13 years, English proficiency among Latinos continues to grow while the use of Spanish at home declines, there

are still over 40 million Latinos who speak Spanish at home (U.S. Census Bureau, 2017). Thus, children who present with limited English skills, or from homes where Spanish is the primary language spoken, may have some challenges in their English literacy and academic achievement (August & Shanahan, 2006; Cycyk et al., 2015; García & Miller, 2008; Jackson, Schatschneider, & Leacox, 2014), as schools may not support the child's native language skills or their cultural background and environment (Roseberry-McKibben, 2015). In addition, dual language learners have unique sociolinguistic experiences that impact their vocabulary learning, such as their exposure to their native and second language (Méndez, Crais, & Kainz, 2018). Complicating this issue is that children who are English Learners (EL), may come from communities with limited resources. This may mean that students begin their academic careers with limited English skills, which in turn can significantly impact their literacy achievement, and the student may require academic interventions (Kieffer, 2008; Roseberry-McKibben, 2015).

#### **A. Language and Literacy Skills**

As has been reported in the literature, a key factor in a child's emergent and early reading skills in preschool and elementary school is related to his or her oral language skills (Hammer, Farkas, & Maczuga, 2010; National Early Literacy Panel, 2008) and is described as an important building block for literacy skills (Restrepo & Towle-Harmon, 2008). Therefore, children's language experiences from birth throughout the preschool years have an impact on the elementary school years, and children who start their academic experiences with decreased verbal skills, such as phonological awareness abilities, are at risk of experiencing difficulty with literacy skills (Roth, Paul, & Pierotti, 2006). In fact, preschoolers' oral language skills often predict reading outcomes in kindergarten and first grade (Hammer et al., 2010).

Children who demonstrate delays in their language skills can also have poorer academic



outcomes when compared to their peers, which can impact their ability to complete high school or attend college (Johnson, Beitchman, & Brownlie, 2010). Therefore, it is vital that language delays and/or disorders be addressed with children while they are young (Nippold, 2012) and that these services are intense and frequent, deliberate, and provide immediate feedback (Gillam & Loeb, 2010). Given the influences language skills can have on children's academic careers, the role of the SLP in addressing delays in young children's language skills can have significant impacts on their future academic careers.

### **B. The Influence of Family and Language Skill Development**

Children whose families have been responsive to their communication attempts have demonstrated an increased growth in their language skills (Kaiser & Roberts, 2013a; Roberts & Kaiser, 2015). The quality and quantity of language input has been examined in various studies. Hart and Risley's (1995) seminal study examined the frequency of interactions and number of words used among families of different socioeconomic backgrounds, and their findings indicated that the size of the child's vocabulary and size of IQ were associated with the frequency of vocabulary when considering the context of the parent-child interaction. In a similar study, Rowe (2008) found a relationship between parental socioeconomic levels, their knowledge of child development, and in their communication styles with their children. The findings from this study replicated the ones from Hart and Risley (1995) in that the higher the family socioeconomic status (SES), the more caregivers talked to their children using more complex vocabulary and sentences. These findings show that caregivers are a child's first teacher, and they need to ensure that they are using explicit language in order to build upon the child's vocabulary and language skills.

While Rowe's (2008) and Hart and Risley's (1995) studies have implications for

children's language development skills, specifically in the context of caregiver-child interactions, there is a lack of research in this area of Latino children and parent-child interactions. Currently, research has indicated that the language learning skills of Latino children are based on the norms of children who speak English as a first language (Cycyk & Iglesias, 2015; Pérez, 2000). As a result, the research that exists is limited when considering the needs of bilingual children or those who speak Spanish. Additionally, Latino family practices and values are often subjected to a cultural deficit model (Yosso, 2005). This implies that Latino children and their families have practices that are not as valued in comparison to that of the values and norms of White middle-class Americans. Moreover, parental literacy activities tend to be drawn from academic frameworks based on middle income White families, such as the cultural resources that are in one's home (e.g. the number of books available) (Duránd, 2010). This suggests that Latino families may draw from language-interaction experiences that are less focused on activities such as book reading. In addition, Latino parents may not view themselves as a playmate to their children, as may be expected during home-based language interventions (Peña & Fiestas, 2009). Therefore, there is a need to examine how to best support Latino mother-child interactions using culturally relevant methods when addressing the language development of their children.

### **C. Supporting Latino Families**

In order to engage Latino families in language development practices, there is a need for professionals to understand that CLD families may have a different understanding and value system for defining academic involvement. For example, a family's definition of literacy may change depending on social or economic factors; however, families should be able to involve themselves using personal and culturally relevant techniques that are socially based interactions within the home and community (Ortiz & Ordoñez-Jasis, 2005). If these practices are not

examined, professionals may overlook the valuable contributions families can make toward their children's education (O'Donnell & Kirkner, 2014), and educators may not be aware of how families are supporting their children at home (Calzada et al., 2014).

In order to support the language development needs of Latino children, it is important that professionals working with families establish a positive and trusting relationship between both themselves and the families (Kummerer, 2012; Núñez & Hughes, 2018). For this to occur, the relationship must be grounded in the fact that families are important in the development of their children (Corr et al., 2016). Another tenet is the importance of positive family and professional collaboration between families and their children (Blue-Banning, Summers, Frankland, Nelson, & Beegle, 2004). This includes respecting families when communicating with them, supporting the needs of the families, and implementing ways that they can support their child's development (Núñez & Hughes, 2018). Additional positive factors include respect, honesty, mutual trust, listening, and flexibility (Epley, Summers, & Turnbull, 2010). One way to develop family-professional collaborations is to build on cultural reciprocity, which allows for families and professionals to engage in dialogues during which they can learn about each other (Kalyanpur & Harry, 2012). In addition, the professional can learn about the families in the community and identify parents as the experts regarding their children (Kummerer, 2012), as well as develop an awareness of power structures that may impact the family's ability to make informed decisions (Lynch & Hanson, 2011). Most importantly, when working with families, a difference in cultural, socioeconomic, or linguistic backgrounds between the professional and family may exist (Franca & Harten, 2016); regardless, the aspects of the family's culture need to be considered. This also includes empowering families through acknowledging their strengths in order to bolster the families' competencies (Roberts, Hensle, & Brooks, 2016).

When working with families, it is best to ensure that the activities that are suggested to them are meaningful and incorporated into the family's routine (Hanson, 2011; Howat, 2006; Ortiz & Ordoñez-Jasis, 2005; Peredo, 2016). One way to ensure that families' needs are being met is to involve them with goals and interventions for their family and children (Hanson, 2011; Peredo, 2016). For example, if the family has concerns with the child's limited verbal output, gathering examples the child's frustration as well as goals (i.e. toilet training) are helpful when planning the intervention. Another way is to directly model or demonstrate specific ways that families can increase literacy skills at home through routines or using materials within the home (Gonzales, Núñez, Hughes, & Soria, 2018). In doing this, the family's needs, as well as the family's concerns and priorities, can be directly addressed (Lynch & Hanson, 2011). Additionally, it is vital that the family's culture and goals are discussed with the professional and family and that the family's needs are considered when implementing interventions or suggesting ways to augment the child's language skills (Lynch & Hanson, 2011). Specific ways to collaborate efforts with the family include using materials that are available to the family (Howat, 2006) and to avoid making assumptions about the communication practices of a family, for example, determining if taking turns during conversations are appropriate and necessary to address (van Kleeck, 2013).

#### **D. Speech Language Pathologists' Roles**

SLPs are professionals trained to work with individuals who have difficulty with speech production, voice, language, swallowing, and cognition and are responsible for assessing, diagnosing, and providing treatment to children and adults with communication and swallowing disorders (Bureau of Labor Statistics, 2015). However, despite the increase in the number of Latino families in the US, there is a lack of diversity within the field that services CLD families

(Guiberson & Atkins, 2012). Currently, 8% of practicing SLPs in the US report being members of a racial/ethnic minority group (ASHA, 2017a), and of these members, 11,200 (6%) identify themselves as bilingual providers with 64% being Spanish bilingual service providers (ASHA, 2018).

Within the field of speech language pathology, research has addressed the lack of confidence and of the academic training of clinicians who work with CLD and/or Latino families (Franca & Harten, 2016; Guiberson & Atkins, 2012; Kummerer, 2012; Preis, 2013). Even as research has identified the lack of cultural competency in academic-based programs, research that examines the perceptions of families that are serviced by SLPs has been limited, specifically in regards to SLPs who are found to lack cultural sensitivity to a family's needs (Kummerer & Lopez-Reyna, 2006; Pérez, 2000; Rodriguez & Olswang, 2003). Additionally, there are limited studies that examine how faculty in higher education are addressing the needs of CLD families within the curriculum or a student's preparation to work with CLD populations during and after they graduate from programs (Ebert, 2013; Franca & Harten, 2016; Preis, 2013). Compounding the issue is that much of the research within the field of speech language pathology excludes CLD individuals, specifically, if the individuals are bilingual or exposed to more than a single language (Goldstein, 2012).

There are consequences that arise out of SLPs who are not adequately prepared to work with CLD families, such as inappropriately assessing children with methods that are not normed on CLD children (e.g. Peterson, Chanthongthip, Ukrainetz, Spencer, & Steeve, 2017), which can lead to the inappropriate placement of CLD children in special education programs (Artiles, 2013). As a result, these practices lead to both under and overrepresentation of CLD students in special education programs (e.g. Hasson, Camilleri, Jones, Smith, & Dodd, 2012). Furthermore,

SLPs can negatively impact their relationship while working with CLD families based on preconceived biases, and this can present different challenges if the SLP is working with clients less typically presented in the research (e.g., Franca & Harten, 2016).

### **E. Naturalistic Language-Based Interventions**

Parental involvement in home-based routines during language-based interventions have been successful during parent-implemented language interventions (e.g. Kashinath, Woods, & Goldstein, 2006). This is important to note given that many language interventions are provided without involving the children's families (Ronski et al., 2011). In addition, increases in children's language skills have been reported when parents are included in the intervention (e.g. Pennington, Thomson, James, Martin, & McNally, 2009). When the language interventions are shared with the family, the skills can be generalized to other settings (Ronski et al., 2011), specifically if the interventions are provided within the home and not an artificially created situation that typically occurs in a center (Kashinath et al., 2006).

Features that describe naturalistic language-based interventions include child centered, use of the natural environment, embedded learning opportunities, and a responsive interaction (Harjusola-Webb & Robbins, 2012). While the importance of naturalistic-based interventions has been examined in the literature, it is important to note that most research studies that have focused on language interventions for children are focused on the children's outcomes and have not considered the parents' roles or their reactions (Ronski et al., 2011). Naturalistic interventions have historically been encouraged during early intervention practices in order to identify learning opportunities that can be embedded within the children's naturalistic environment (Individuals with Disabilities Education Act [IDEA], 1997). Their use has also been encouraged in inclusive early education practices (Walsh, Rous, & Lutzer, 2000), as the use of

these strategies encourages adult-child interactions during routines (Harjusola-Webb & Robbins, 2012).

#### **F. Statement of the Problem**

The problem is complex: Latino children with language delays who are raised in Spanish-speaking home environments and come from under-resourced schools and communities can face many obstacles. On one hand, children who present difficulties with developing language skills may have difficulty with vocabulary skills, specifically with academic language skills, as they have less exposure to this kind of language at home before starting school (van Kleeck, 2014). There are also concerns with language of exposure and poverty levels that impact first- and second-generation students. There is a strong possibility that most of these children are fluent in Spanish rather than English, with half that have parents who graduated from high school, and more than a third of first-generation families who live in poverty (Peña & Fiestas, 2009). While some families are told to speak English to their children during the development of language skills, even if it is not the native language spoken at home, other families are not being trained on how to embed language strategies in the native language (Peredo, 2016). This issue is compounded if the training for SLPs is not adequately addressing the needs of working with CLD families, and if the professional experiences of the SLP are provided without cultural guidance or mentoring. In addition, the development of strong expressive language skills is key to the academic success of young Latino children; however, Latino children continue to struggle academically in these language skills (Lesaux, Kieffer, Faller, & Kelley, 2010; Restrepo, Morgan, & Thompson, 2013). Although families are essential in developing these language skills with their children (Kaiser & Roberts, 2013a; Roberts & Kaiser, 2015), Latino families may require support in how to best address these needs. While SLPs are trained to work with families,

many are trained to work with White middle-class families and may not recognize the best ways to work with CLD families (van Kleeck, 2013). Therefore, this case study was designed to investigate the qualitative changes that occur, if any, in Mexican immigrant mothers' interactions with their children when a language-based intervention is provided in Spanish in the home. It also examines the mothers' perspectives of the intervention. This study will contribute to the field by examining the various ways that immigrant Mexican mothers use language when interacting with their children during home-based routines and using materials from home when provided with language-based strategies. In addition, the study can help guide decision-making skills for SLPs when working with CLD families.

#### **G. Research Questions**

The study is designed to answer the following research questions:

- 1) Do Mexican immigrant mothers of preschool aged children who have language difficulties increase the quantity and quality of their language with the child when provided with a language-based intervention in Spanish in a naturalistic and authentic setting?
- 2) To what extent and in what ways do Mexican immigrant mothers of preschool aged children who have language difficulties change their use of language interactions with their children during a language-based intervention within the home?
- 3) What are Mexican immigrant mothers' perceptions of participating in a language-based intervention in a naturalistic and authentic setting?



## **CHAPTER II**

### **REVIEW OF THE LITERATURE**

The purpose of this study was to investigate the impact of a home-based naturalistic intervention for Mexican immigrant mothers whose children present with expressive language delays. In this chapter, research will be explored in order to have a better understanding of what is known about language delays in children and ways to work with Latino families. The chapter begins with an overview of social-cultural theory and language systems. Then the literature review is organized into several areas including a study of language delays, language development in bilingual youth and vocabulary skills. The chapter continues with a review of literature that focuses on language interventions and the use of home-based language interventions. The chapter ends with a review of the literature on home-based language interventions and on the implementation of home-based language interventions with families, specifically in developing family trust and collaboration. The literature review extends beyond the mother-child dyad to include families.

#### **A. Socio-Cultural Theory**

This research study is grounded in socio-cultural theory in that both culture and cognition of the child will be linked with situational tasks and events that address the children as a part of their own culture or community (Panhwar, Ansari, & Ansari, 2016). The sociocultural theory was identified by Vygotsky, who articulated that children learn from interactions with other people, and in turn the child will internalize and process the information and knowledge gained from the interactions (Vygotsky, 1978; 1986). This study uses the socio-cultural theory to acknowledge that children benefit from the exposure in their native language at home, as well as learning language from interactions with the mother and that children are not only learning from

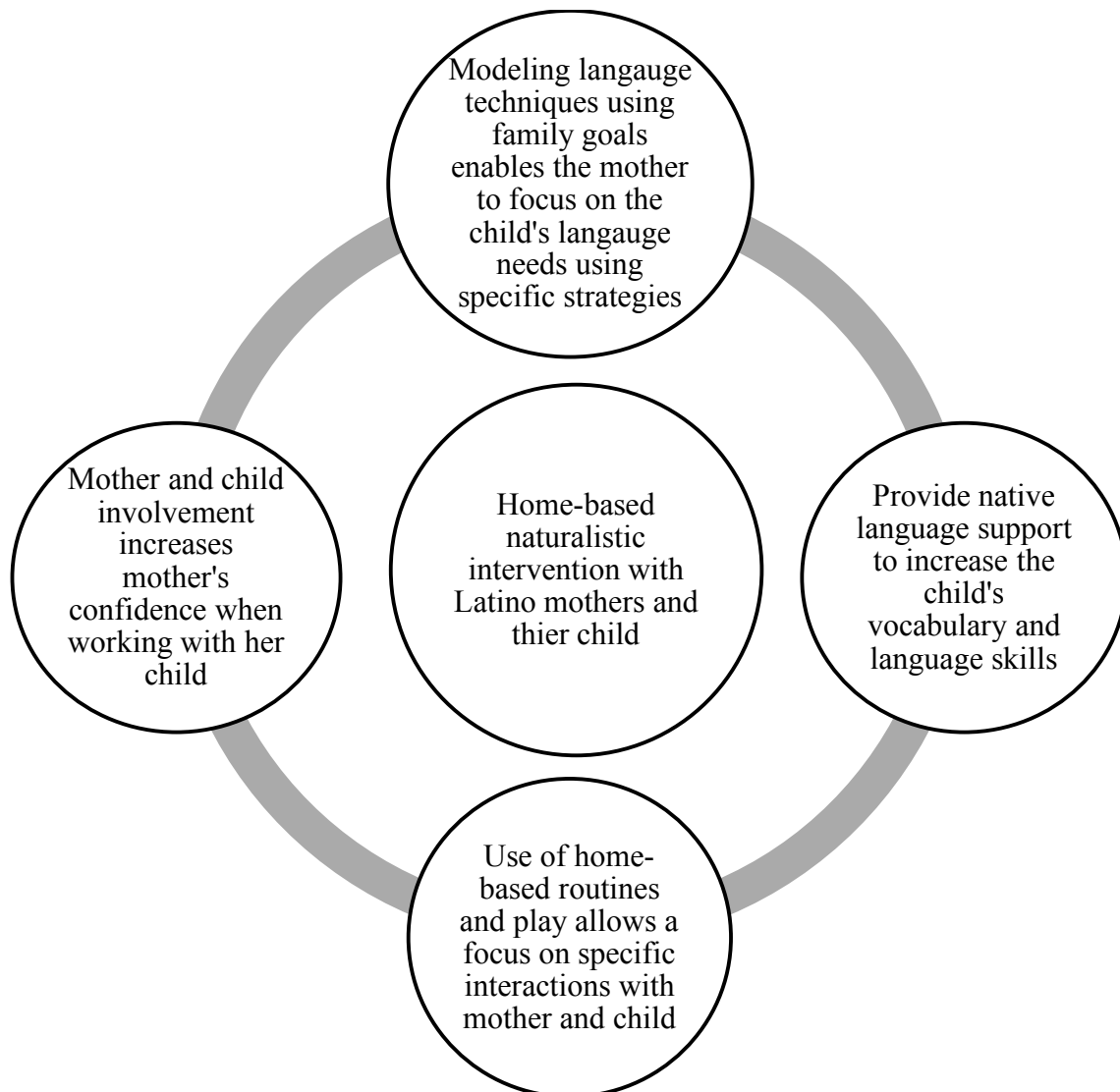
interacting with these two factors but are able to use this knowledge during everyday tasks and activities.

## **B. Language Systems**

Language development is a complex process and an intricate system of many factors working together. It involves the comprehension and use of a spoken, written, and symbol system (AHSA, n.d.). It is a dynamic system that is used for communication and thought and is viewed as a rule governed system, one that requires human interaction, has evolved within historical, cultural, and social contexts, and involves the interaction of biological, cognitive, and environmental factors (ASHA, 1982). In short, language can be viewed as the most efficient and valuable communication tool (Kohnert, 2013).

Environmental factors, such as the quantity and quality of input of language, and individual factors, such as an individual's cognitive skills, also emerge and interact with language domains (Kohnert, 2013). As a result, when examining the intricacies of language, it can be overwhelming to consider how each individual factor can be fostered and how families can support the developing language of their children.

Refer to Figure I to understand the context of the study. The chart provides a concept model that describes the four separate components that influenced the purpose of the study. The goal of the concept model is to show how the four factors demonstrate the background and needs to support a home-based intervention in Spanish with Latina mothers and their language delayed children using specific strategies.



**Figure I**

*Concept Model of Purpose of Study*

Children with language delays can present with them in their receptive language, grammar skills, pragmatic language, vocabulary, units of word meaning, or sound production (Shetty, 2012). While some children may present with only receptive language delays, some present with both receptive and expressive language delays, and those with an expressive language delay may also present with depressed vocabulary skills (Desmarais, Sylvestre, Meyer, Bairati, & Rouleau, 2008).

### **C. Language Delays**

Language delays in young children can be identified through several measures. One way is for parents to report on their child's language skills, specifically with a child having a repertoire of less than 70 words and a lack of word combinations (Rice, Taylor, & Zubrick, 2008), decreased use of understanding gestures and symbolic comprehension (O'Neill & Chiat, 2015), and receptive language delays (Shetty, 2012). Another way is through the use of standardized tests, parent questionnaires, screening tools, and language scales (Shetty, 2012). Children with a history of language delays suffer long-term impacts on their cognitive, communication, academic, and occupational skills into adulthood compared to children who only had a speech impairment (Johnson et al., 2010). This is evident in that the second highest number of children with disabilities in the US are children with speech and language impairments, followed by specific learning disabilities (U.S. Department of Education, 2016).

The following studies examine the predictors of children identified as late talkers (Berkman et al., 2015; Fisher, 2017; Olswang, Rodriguez, & Timler, 1998; Rudolph, 2017), as well as the implications of being diagnosed with a language delay (Desmarais et al., 2008; Kelly, 1998) (see Table I for study characteristics). Late talkers are children under the age of three who are described as having smaller than average vocabulary skills, normal hearing, and no developmental disabilities (Fisher, 2017).

Clinical syntheses of the literature by Berkman and colleagues (2015), Fisher (2017), Desmarais and colleagues (2008), Kelly (1998), Olswang and colleagues (1998), and Rudolph (2017) identified predictors for speech and language services for children. Desmarais and colleagues (2008), Kelly (1998), and Olswang and colleagues (1998) indicated that late talkers have difficulty with symbolic play and with the use of specific communicative intents, such as

using comments and in their use of gestures (e.g. nonverbal, representational). Other areas of consideration included a history of ear infections and a family history of speech delays, delays in both receptive and expressive language skills, the age of the child, and the size and variety of the child's vocabulary skills (Berkman et al. 2015; Desmarais et al., 2008; Fisher, 2017; Kelly, 1998; Olswang et al., 1998). However, Fisher (2017) identified that the receptive language skills of a toddler identified as a late talker may be a better predictor than how much they say. In addition, Kelly (1998) identified that late talkers have more behavioral problems and higher levels of activity and demonstrate a lack of an initiation of sequential thematic scripts with toys, even with their caregivers present. Berkman et al. (2015), Desmarais and colleagues (2008), and Fisher (2017) identified a child's SES as a risk factor, and Berkman and colleagues (2015) and Desmarais and colleagues (2008) identified parental stress and the mother's educational level as risk factors. The risk factors in non-English speaking children included being male, prematurity, low birth weight, parental educational level, and family factors (Berkman et al., 2015). In addition, Olswang and colleagues (1998) and Desmarais and colleagues (2008) included children with limited phonetic inventories or a large number of sound errors, children who demonstrate difficulty with socialization, and family concerns. Other studies identified race as a possible risk factor (Berkman et al., 2015; Rudolph, 2017). Rudolph (2017) identified four factors, maternal education level, 5-minute Apgar score, birth order, and biological sex to be clinically significant.

Of significant concern is the future of late talkers. Kelly (1998) indicated that, in a follow-up of three studies (Paul, 1991; Paul & Riback, 1993; Rescorla & Schwartz, 1990) of the child's linguistic skills, very few of the children identified as late talkers had similar expressive language skills compared to their typically developing peers. In addition, a very small number of children were able to catch up to their typically developing peers' language skills; however, a

larger number of children scored within the mean or above on some measures of language skills but demonstrated difficulty with grammar and narrative skills. In addition, a sizable number of children in the study demonstrated difficulty in various areas of their language skills, and had difficulty catching up to the language skills of their typically developing peers.

While the reviews helped to provide vital information regarding risk factors and predictors, the authors did not address the needs of CLD children or children who are raised in dual language households, children with receptive language delays, or the use of standardized assessments, which have the potential to be biased and do not provide context or history of a child's language needs or ways to increase a young child's language skills. The reviews did not stress which factors should be considered as an area of immediate need. In addition, the majority of the children presented in the reviews were 24 months and older and from middle class, higher educated, and White homes (e.g., Kelly, 1998); a follow-up of the child's language skills were not assessed, which did not address whether or not interventions were needed to assist the children or families.

In a recent study, Morgan and colleagues (2016) identified predictive factors of early childhood aged children receiving speech and language services by the age of five. A multivariate logistic regression analysis of 9,600 children, using the Early Childhood Longitudinal Study-Birth Cohort, was completed. Children who demonstrated expressive vocabulary language delays by 24 months of age were likely to receive services, as were children with very low birth weights, as well as those who demonstrated externalizing problem behaviors by 24 months. A family history of learning disabilities and a history of maternal depression also impacted a child's need for speech and language services. In addition, Black and Latino children

**Table I**  
*Study Characteristics of Meta-Analyses and Literature Reviews of Late Talkers*

Author/Year	Years Reviewed	Participants <sup>a</sup>	Number of Articles	Findings	Focus of Measures
Berkman et al. (2015)	1989-2014	LT, 18-34 month olds	38	Risk factors: males, family history of speech and language concerns, and parental educational achievement	Risk Factors
Desmarais et al. (2008)	1991-2005	LT, 2 year olds	25	Identified characteristics of TD children with EVD: family history of language delays, quality and quantity of language stimulation by caregivers, parental stress, mother's level of education, and child's SES	Characteristics of language delays in young children
Fisher (2017)	1989-2015	LT, 18-28 month olds	20	Predictors: vocabulary sizes of toddlers, receptive language skills, and family SES	Predictors of outcomes
Kelly (1998)	1990-1996	LT, 1.5-4 year olds	7	LT have difficulty catching up with TD peers	Linguistic outcomes and profiles of late talkers
Olswang et al. (1998)	*	LT, SLI, TD, LD, Toddlers	*	Predictors: delay in language production, receptive and expressive delays of six months, limited phonetic inventories, children with difficulties imitating word combinations, and lack of play, gestures	Predictors for services
Rudolph (2017)	1997-2014	Toddlers	8	Risk factors: maternal education level, family history, birth order, biological sex, prematurity, presence of a newborn/pregnancy condition, perinatal event, 5-min Apgar score, maternal smoking, and maternal alcohol consumption during pregnancy	Risk Factors

\*Not reported, *Note:* <sup>a</sup> EVD=expressive vocabulary delay; LD=language delays; LT=late talkers; SLI=specific language impairment; TD=typically developing

were less likely to receive services than White children. While the findings help to explore predictive factors for children who may require services, the study did not explore whether receptive or expressive vocabulary delays (or both) would impact a child. The study was also limited in its consideration that eligibility for services varies per age group (e.g. Early Intervention versus school based), location (e.g. school versus private clinic), and state, and did not discuss the quality of the services that were provided to the children.

### **1. Summary of the Literature**

The review of the literature thus far has indicated that children who are considered late talkers are at risk for additional speech and language delays; however, specific factors, such as identifying whether a child is a late talker and determining whether the child's communication intents, phonetic inventory, gestures, and play are age appropriate should be considered when determining if a child requires services. Based on the literature, children who present with specific risk factors should receive services to target their language skills; however, the factors that require immediate attention have not been identified. Other factors, such as the child's strengths or skills (e.g. imaginative play), home-based factors (e.g. what the parents are doing to help increase the child's language skills), or the access that families have to resources in their communities, were not addressed. While the literature is clear that children identified as late talkers can have difficulty catching up with their language skills, there is a lack of research focused on CLD children. In addition, the use of biased assessments, specifically when working with families that are considered low SES or CLD, is a problematic area, as these assessments can over- or under-identify children if used incorrectly. Another consideration is how receptive language delays can have a direct impact on a child's expressive language skills and how this can impact specific areas of a child's language development.



#### **D. Language Development of Bilingual Children**

The language development of a bilingual child takes into account the role of usage-based theories, which are reflective of the quality and quantity of the language exposure of the adults in the environment (Hammer et al., 2012). Other contributing factors that impact the development of languages in a bilingual child include the SES background of the family, language input, languages used at home, and the power status of the language used in society (Dixon, Wu, & Daraghmeh, 2012). As a result, each individual child develops language fluency differently based on their home and academic experiences.

An additional factor for bilingual children in their overall language development is that many bilingual children learn English when they begin preschool, and their overall development in English is related to their overall proficiency in English, the amount of English input, and the child's use of English (Gutiérrez-Clellen, Simon-Cerejido, & Sweet, 2012). Bilingual children are not a homogenous group, as each child will vary in the amount and quality of each language they are exposed to at home (Place & Hoff, 2011). As a result, Latino children are often at an academic disadvantage compared to their monolingual peers when their overall language skills are compared (Cycyk et al., 2015). One reason may be the result of lower SES status, as many immigrant children with this background tend to have poorer academic outcomes (Prevoo, Malda, Mesman, & van Iizendoorn, 2016). However, other considerations, such as the child's academic strengths and areas of weakness must be taken into consideration. English learning (EL) children who demonstrate strong reading skills in younger grades, but are at risk in later grades, are those that demonstrated difficulty in attention and English comprehension skills or had difficulty balancing English and Spanish (Swanson, Kudo, & Guzman-Orth, 2016).

A meta-analysis (Prevoo et al., 2016) and review of the literature by Durán and colleagues (2016) examine the academic factors that impact EL children. A meta-analysis by Prevoo and colleagues (2016) examined the school outcomes of bilingual immigrant children's oral proficiency in both their first and second language in the areas of early literacy, reading, spelling, math, and academic achievement. A total of 86 previous studies were reviewed for this study in the five separate academic areas from 1983 to 2013. The studies analyzed include the relation between oral language proficiency and school outcomes of bilingual, immigrant students. Results of the study indicated that the within-language relation between oral language proficiency and academic outcomes were significant and were stronger than cross-language relations. When considering language proficiency and early literacy and reading skills, there were moderate within-language correlations for the native language (L1) and second language (L2), which indicated that the academic outcomes for both L1 and L2 were positive when measured in the same language. The cross-language correlations were weaker but significant, which indicated that the cross-language outcomes between L1 or L2 were positive in oral language proficiency and academic outcomes and with no significant effect of L2 proficiency on L1 reading. In addition, studies that used vocabulary measures as compared to studies that used general language proficiency measures had stronger correlations. The within-language relations for the oral proficiency and academic outcomes of early literacy, reading, spelling, math, and academic achievement were moderate to strong. Based on the results of this study, the language that children are exposed to during their academic years has an impact on their academic success (Lugo-Neris, Jackson, & Goldstein, 2010; Méndez, Crais, Castro, & Kainz, 2015; Restrepo et al., 2010).

While language exposure is vital to the academic success of young children, so are interventions that support native language development of EL children. Durán and colleagues (2016) reviewed 20 years of effective bilingual or home-based interventions with 2- to 6-year-old dual language learners who had or were at risk for language delays. The synthesis included 26 studies that were coded for measures, such as the study design, outcome measures, and the intervention characteristics. The largest effect sizes were in Spanish receptive vocabulary (effect size=0.55) (Durán, Roseth, & Hoffman, 2010), (effect size=2.69) (Durán, Roseth, Hoffman, & Robertshaw, 2013), (effect size=1.66) (Durán, Roseth, & Hoffman, 2015) and letter-word identification for children who were in transitional bilingual education classrooms (effect size=1.68) (Durán et al., 2010), (effect size=3.34) (Durán et al., 2013), (effect size=1.60) (Durán et al., 2015) with the effect sizes for all the studies in the moderate range in both Spanish and English. While the findings indicated that both the child's home language and their development of the majority language can be supported during intervention, the most beneficial interventions are bilingual preschool programs, early literacy and language programs provided in the home language, and the use of vocabulary and parent storybook reading in the home using bridging and language scaffolding techniques. Based on the findings of the studies, positive effects were seen when children attended a bilingual preschool program and were provided with vocabulary instruction using home-language bridging techniques.

### **1. Summary of the Literature**

Studies that examined the academic success of EL children indicated that this group of children should be supported in their native language when addressing the student's academic needs and that support should be given for the parent at home to encourage specific language

techniques, such as language bridging, in order to support the child's overall language development in both the L1 and L2.

### **E. Vocabulary Skills**

One area of language development that is of interest is vocabulary development, as a child's vocabulary skills are related to their academic skills, specifically, in literacy development (Dickinson, 2011), as well as the parental communication skills that are related to the child's overall vocabulary development (Rowe, 2012). Risk factors, such as a child identified as a late talker at 24 months of age, from a low SES background, and born to an older mom, have impacted the child's vocabulary skills at 48 months old, as well as the child's academic readiness at 60 months of age (Hammer et al., 2017). While vocabulary interventions are beneficial for students, techniques and instruction can benefit some children more than others, such as those from varying SES levels (Marulis & Neuman, 2013).

Table II provides the study characteristics that focus on the literature reviews and meta-analysis for vocabulary needs in children. The following studies examine the vocabulary needs of children (Cable & Domsch, 2011; Flack, Field, & Horst, 2018; Marulis & Neuman, 2010; Marulis & Neuman, 2013; Mol, Bus, de Jong, & Smeets, 2008; Wasik, Hindman, & Snell, 2016), and vocabulary instruction with bilingual children (Buac, Gross, & Kaushanskaya, 2014; Lugo-Neris et al., 2010; Méndez et al., 2015; Méndez et al., 2018).

Cable and Domsch (2011) examined focused stimulation for which the adult uses a specific language target, such as commenting or using a two-word combination, and the modeling of single words for which target words are presented to a child during play, the imitation of single words, and the use of traditional speech and language services. There were noted gains in the child's vocabulary size (3.9 words) when targeted words were selected for the

**Table II**  
*Meta-Analyses and Literature Reviews of Vocabulary Skills*

Author/Year	Years Reviewed	Participants	Number of Articles	Effect Size Findings	Focus of Measures
Cable & Domsch (2011)	1985-2008	Children between 24-47 months	11	Treatment improved child's language using formal measures, MLU, and target word use	Focus stimulation Interventions
Flack et al. (2018)	1990-2017	Typically developing children in preformal school through school age	38	Larger effects seen on dialogic and nondialogic reading styles, the number of repetitions, and number of words tested	Shared storybook reading on receptive word learning
Marulis & Neuman (2010)	1971-2008	Pre-k and kindergarten aged students	67	Vocabulary training had a large effect on word learning	Effect of vocabulary interventions of preschool and kindergarten aged children
Marulis & Neuman (2013)	1971-2011	At-risk pre-k and kindergarten aged students	51	Large and significant gains from vocabulary interventions with poverty as high-risk factor	Vocabulary outcomes of word-learning interventions
Mol et al. (2008)	1988-2006	Parent-child reading or combined home/school program, 28-70 months	16	Dialogic reading tasks between children and their parents promotes overall language skills; however, not in older children	Vocabulary gains during dialogic reading tasks
Wasik et al. (2016)	1994-2015	Monolingual children 3-6 years of age	36	The children learned a small number of words taught	Book reading practices focused on increasing a child's vocabulary

children to use during naturalistic routines (effect size=1.03), compared to children treated with a set of control words (1.5 words) (Girolametto, Pearce, & Weitzman, 1995). In a follow-up study, parents targeted ten vocabulary words using the same intervention techniques with significant gains noted (effect size=1.14). In addition, the effect size was 1.54 (Gibbard, 1994), 1.85 (Gibbard, 1994), and 0.90 (Robertson & Weismer, 1999) in separate studies that measured the mean length of utterance (MLU) of children receiving parent delivered interventions compared to a control group. The findings indicated that that children had improved language skills as measured by their results on language assessment and in their MLU; however, the children only learned a few new targeted words during the intervention session.

Flack and colleagues' (2018) meta-analyses examined the change in children's raw test scores on the new words learned from pre to post test. Findings showed a total of 110 effect sizes that ranged from 0.19 to 6.62 for new words learned from pre to post tests. The study also indicated that the use of dialogic reading strategies, such as pointing, influenced the total number of words children learned when engaging in a shared storybook reading task compared to using nondialogic reading tasks. Other factors that influenced the number of words learned included the types of words tested and the number of target word repetitions. Other findings indicated that the person reading, the child's age, and the time between the story and test did not influence the number of words children learned. The authors indicated that story repetitions and the word types were areas that warranted additional research.

A meta-analysis by Marulis and Neuman (2010) and follow-up meta-analysis by Marulis and Neuman (2013) calculated high effect sizes that ranged from 0.80 to 1.25 for the following variables: when the training was provided by the experimenter or teacher, when using explicit (e.g. word discussed before, during and after the activity) vocabulary instruction, or both explicit

and implicit (e.g. word taught within the context of the activity) vocabulary instruction. While the effect sizes for intervention dosages were found to be high, students with less than 18 sessions had higher effect sizes than those with more sessions. In addition, interventions that lasted more than 20 minutes did not differ from those that were more than 20 minutes, which indicates that more interventions do not result in better outcomes. Medium effect sizes that ranged from 0.50-0.79 were calculated for the following two variables: when the intervention was provided by the parent and when only implicit vocabulary instruction was provided to the children. A low effect size that ranged from 0.49-0.10 was calculated when the intervention was provided by a childcare provider.

Additional findings in Marulis and Neuman (2010) reported no gains in the vocabulary measures for children who were considered at risk (effect size=0.85, confidence interval=0.69, 1.01) compared to children considered average (effect size=0.91, confidence interval=0.69, 1.12), or in the vocabulary gains obtained by the children considered low SES (effect size=0.75, confidence interval=0.54, 0.96) and those who were not (effect size=0.99, confidence interval=0.79, 1.21); however, children categorized as low SES made less gains (effect size=0.77, confidence interval=0.53, 1.01) than those who were of a higher SES (effect size=1.35, confidence interval=0.85, 1.85), with poverty found to be the most serious risk factor.

A meta-analysis by Mol and colleagues (2008) revealed that younger pre-school-aged children (effect size=0.50; confidence interval=0.37, 0.64) benefitted significantly more from the dialogic reading interventions compared to older children in kindergarten (effect size=0.14, confidence interval=-0.10, 0.37). In addition, families defined as at risk, based on variables such as income, demonstrated effect sizes that significantly differed between subsets for children not defined as at risk (effect size=0.53, confidence interval=0.40, 0.67) compared to those who are

(effect size=0.13, confidence interval=-0.08, 0.35). In a similar analysis, Wasik and colleagues (2016) examined the strategies and characteristics of studies that demonstrated the impacts of receptive and expressive vocabulary of children. The number of words presented during a book reading was examined, and this number varied from six (Coyne, McCoach, & Kapp, 2007) to 120 words (Coyne, Simmons, Kame'enui, & Stoolmiller, 2004) with studies that lasted longer in duration having more words addressed. The number of times children were exposed to target words was examined, and the total number of exposures varied from two to 15 times, with an increase in exposure occurring in treatments that lasted longer and had more sessions. The effect sizes ranged from 0.3-2 and were statistically significant, as the children did not learn many target words, for example, and an effect size of 1.0 was reported in Beck and McKeown (2007); however, the children only learned 4 of the 42 target receptive vocabulary words. While the authors indicated that adult-child interaction is important during book reading activities for vocabulary learning to occur, the following strategies were suggested in the studies in order to engage children: defining words, using questions to discuss the comprehension of words, retelling, rereading tasks, using manipulatives to teach words, and using activities to teach words.

The studies have examined the use of specific vocabulary instruction, such as the use of focused stimulation and dialogic reading. The studies have also addressed other factors, such the impact of who provides the intervention, when to provide specific interventions (e.g. dialogic reading), for how long, and the use of specific techniques. Mol and colleagues (2008) and Cable and Domsch (2011) considered the importance of the specific person who provides the intervention. While Cable and Domsch (2011) indicated that children made improvements in their vocabulary development with parents providing the intervention, Mol and colleagues



(2008) also indicated that, when teachers and researchers provide the intervention, children make more improvements than when parents and caregivers provide the intervention. This does not take into consideration a top-down approach. In other words, the assumption is based on the fact that professionals know more about a child's vocabulary needs as compared to family members or other people who spend more time with the child. However, a benefit to using these specific vocabulary strategies is that the words can be intentional and selected in order to focus on those that are important to the child. In addition, bias and overall parental motivation cannot be ruled out in the studies used, the definition of "at risk" was not well defined, the impact or strengths of the child's academic programs were not discussed, nor was a follow-up of the students defined to be at risk for academic failure suggested. The studies did not include CLD children, children with disabilities, or suggest what strategy is the best to use when introducing vocabulary intervention. Research fidelity, complexity of the words, an overall description of the interventions used, and the cultural relevance of the interventions used were not addressed.

Five separate studies (Buac et al., 2014; Leacox & Jackson, 2014; Lugo-Neris et al., 2010; Méndez et al., 2015; Méndez et al., 2018) specifically address the vocabulary skills in EL. Table III provides the study characteristics that focus on the literature reviews and meta-analyses for vocabulary needs in children.

Vocabulary learning skills of Latino children were examined in four different studies using Spanish bridging (Leacox & Jackson, 2014; Lugo-Neris et al., 2010), environmental factors (Buac et al., 2014), and bilingual support (Méndez et al., 2015; Méndez et al., 2018). Studies by Lugo-Neris and colleagues (2010) and Leacox and Jackson (2014) examined Spanish bridging, which is defined as a method in which the vocabulary words are provided in one language in order to expand upon the meaning of the word in the home language, and, in doing

so, the definition of the word is provided in the student's native language in order for them to bridge to the emerging language (Leacox & Jackson, 2014). The findings from Lugo-Neris and colleagues (2010) indicated that, for the children who received Spanish bridging, their English naming, word definition skills, and receptive vocabulary showed significant improvement. In addition, the children who demonstrated limited skills in both English and Spanish had less vocabulary growth than the students with strong Spanish skills. In a follow-up study by Leacox and Jackson (2014), the children made more improvement in the treatment group based on pre- and post-testing with children learning 1.57 words in their English receptive vocabulary, 2.2 English naming words, and 2.32 in their bilingual definition ability.

Buac and colleagues (2014) examined environmental factors (SES, the percent exposure of English and Spanish, and the caregiver's vocabulary knowledge) on bilingual children's vocabulary skills. Within-language analyses (the child's English vocabulary as the outcome and the primary caregiver's English vocabulary as the predictor, and child's Spanish vocabulary as the outcome and the primary caregiver's Spanish as the predictor) and across-language analyses (child's English vocabulary as the outcome and the primary caregiver's Spanish vocabulary as the predictor, and the child's Spanish vocabulary as the outcome and the primary caregiver's English as the predictor) models were used. Results of English receptive vocabulary indicated that the within-language model had a significant improvement when the caregiver's English receptive vocabulary skills were added; however, there was no significance in the across-language model when considering the primary caregivers' Spanish receptive vocabulary skills. When considering the English expressive vocabulary, the within-language model increased when the caregiver's English expressive vocabulary was added, with no significance in the across-language model when the primary caregiver's Spanish expressive vocabulary was added.

**Table III**  
*Single Studies of Bilingual Vocabulary Skills*

Author/Year	Participants	Purpose	Procedure	Assessment	Outcome
Buac et al. (2014)	58 bilingual children 5-7 years old and caregivers	Examined impact of environmental factors, percent of language exposure to English and Spanish, and primary caregivers' knowledge of bilingual children's vocabulary skills	Caregivers tested over a course of three 1-hour visits in a lab using standardized assessments administered over the visits	Language exposure at home and SES was gathered from caregiver interviews and caregivers' vocabulary in English and Spanish was measured using expressive and receptive vocabulary assessments	The primary caregivers' vocabulary knowledge, the child's percent exposure to each language, and SES were predictors of the children's English vocabulary, but not of their Spanish vocabulary skills
Leacox & Jackson (2014)	24 EL preschool and kindergarten aged children	Vocabulary learning skills during a two-week adult-read and technology-enhanced reading tasks	Three days a week, the children participated in repeated readings and one week was spent the control conditions: English adults reading and in using the technology enhanced reading tasks	Pre- and post-tests using researcher-developed tasks of English receptive knowledge and English naming performance	More word learning gains were made with the children in the Spanish bridging group than in the adult reading task

Author/Year	Participants	Purpose	Procedure	Assessment	Outcome
Lugo-Neris et al. (2010)	22 EL migrant children aged 4-6	Effectiveness of using English only or English with Spanish bridging during storybook reading tasks and growth in English naming, defining words, and receptive vocabulary skills	Children participated in two weeks each instruction: (a) word expansions in English or (b) English readings Spanish bridging 3 times a week for 4 weeks in 15-20 minutes sessions	Measures were created by the researcher to measure target vocabulary, and language proficiency, and standardized vocabulary measures were provided in English and Spanish	Children with Spanish bridging made significant improvements in naming, receptive knowledge, and expressive definitions. The initial language proficiency affected gains made overall, and those with limited skills in both languages were found to affect participants' gains from intervention, as those with limited skills in both languages showed significantly had less growth than those with strong Spanish skills
Méndez et al. (2015)	42 Spanish-speaking low-income Latino dual language learners, mean age of 52 months	Effectiveness of a shared reading vocabulary intervention with dual language learners in two groups: English or English/Spanish	Thirty tier 1 and 2 words presented in a shared reading approach 3 times a week for 5 weeks for an hour a session	Differences measured in post-instruction scores using Spanish and English vocabulary assessments	Children who received the intervention in both English/Spanish had higher post-test scores than children who only received English vocabulary interventions
Méndez et al. (2018)	77 students; 42 from Méndez et al. (2015) and 35 low-income Latino dual language learners, mean age of 52 months	Replication study examined if positive findings from 2015 study on vocabulary growth varied as a function of the student's baseline vocabulary skills or gender differences	Shared reading approach that targeted tier 1 and 2 vocabulary words 3 times a week for 5 weeks for 20 minutes a session	English and Spanish receptive vocabulary measures used to measure vocabulary changes	Children who received English/Spanish intervention made greater gains in their vocabulary skills than those receiving English only interventions. In addition, dual language learners benefit from bilingual interventions regardless of their baseline measures or gender

When analyzing Spanish receptive vocabulary skills, the within-language model specifies that the child's nonverbal intelligence was a significant predictor and not SES, and in the across-language model, the addition of Spanish did not improve the model. In the final model, when analyzing Spanish expressive vocabulary, the within-language model details that SES and nonverbal intelligence were not significant predictors of Spanish expressive vocabulary skills and the across-language model when adding the caregiver's English expressive vocabulary skills was not significant. Overall, the study indicated that SES impacted the children's English vocabulary skills, parental English skills impacted the child's English vocabulary skills, and language exposure served as an important predictor of a child's vocabulary skills with the exception of Spanish receptive language skills (Buac et al., 2014). Additionally, the within-language relationships indicated links between the language environment and vocabulary development in bilingual children.

Méndez and colleagues (2015) examined vocabulary instruction using bilingual support in children who attended English preschool programs. The interventions included vocabulary development strategies, such as storybook reading, child friendly definitions, culturally relevant context, and multimodal exposure. The vocabulary words were categorized into Tier 1 and Tier 2 words and were established by contacting Mexican Spanish speakers with similar SES backgrounds as the participants. The results of the study indicated that the children receiving bilingual support acquired more vocabulary words compared to the children only receiving English instruction based on post-test scores on vocabulary testing. In addition, the children demonstrated higher test scores at follow-up in Spanish vocabulary.

In a follow-up study, Méndez and colleagues (2018) replicated a previous study by Méndez and colleagues (2015) that examined receptive bilingual vocabulary skills in Spanish-

speaking children who attended English preschool programs using a larger sample. This study examined if the effect of vocabulary instruction was a function of the child's baseline vocabulary levels or gender. Interactive shared readings that targeted both Tier 1 and Tier 2 words were used. Results indicated that children who received bilingual intervention acquired more English vocabulary than those who only received English instruction. In addition, the student's gender and baseline vocabulary status were found to not impact the student's outcomes.

The studies make a strong argument for using native language support when addressing the vocabulary skills of a young child while using specific strategies, such as bridging. However, of concern was that the children in the studies did not demonstrate any speech or language issues and the families had to demonstrate that they came from low SES backgrounds. As a result, while the techniques helped the children in learning the words, it would be difficult to generalize these findings to bilingual children with speech and language delays. It also assumes that children who are from low SES homes are not exposed to rich vocabulary; however, the studies did not explore the perceptions of the families when working with their children at home.

### **1. Summary of the Literature**

The review of the literature thus far has revealed the benefits of using specific vocabulary strategies when working with monolingual and bilingual children. The meta-analyses studies advocate the use of specific techniques, such as dialogic reading when working with monolingual children and vocabulary bridging when working with low SES and bilingual populations. While these can be appropriate methods when working with CLD children, studies that examine specific techniques should be addressed when providing native language support. In addition, having a better understanding of the vocabulary and language exposure that bilingual

children have at home in their native language and offering ways for parents to assist their children using bilingual support would also benefit students.

#### **F. Language Intervention with Children**

Parents have an important role in the first few years of their child's life, specifically when the parent is the primary language model (Buac et al., 2014), and the complexity of language acquisition is dependent on the manner in which parents speak to their children (Sandbank & Yoder, 2016). As a result, there are various language development strategies that can be used when working with children and their families when addressing the child's language delays. Specific activities that have been suggested for families to increase a child's expressive language skills are: 1) the use of grammatical recasts (Cleave, Becker, Curran, Van Horne, & Fey, 2015), 2) the use of specific strategies, such as dialogic reading, for which the reader uses open-ended and wh- (who, what, where) questions (Mol et al., 2008), and 3) the encouragement of active listening during reading tasks (Fielding-Barnsley & Purdie, 2003) with a goal of having the child retell the story (Restrepo & Towle-Harmon, 2008). Other recommended practices when working with delayed speakers include the use of general language stimulation, such as creating a language rich environment to encourage use of language; the use of focused language stimulation, which targets a specific language task (e.g., vocabulary); and milieu teaching, which uses more models and prompts (DeVeney & Hagaman, 2016). In addition to these strategies, parents are recognized as their child's first communication partners, and the language skills that emerge from initial non-verbal turn-taking and joint attention to objects develop into early vocalizations (Kaiser & Roberts, 2013b; Peredo, Zelaya, & Kaiser, 2018).

A key factor in a child's emergent and early reading skills in preschool and elementary school is related to the oral language skills of the preschool child (Hammer et al., 2010) and is

described as an important building block for literacy (Restrepo & Towle-Harmon, 2008).

Therefore, a child's language experiences from birth throughout their preschool years has an impact on their elementary years, as children who start their academic experience with weaker verbal skills are at risk of experiencing difficulty with their literacy skills (Roth et al., 2006). Fostering a young child's language skills is vital given that the total number of words a child hears along with the complexity of the words is defined as predictors of language development skills (Roberts et al., 2016). In addition, a preschoolers' oral language skills predict their reading outcomes in kindergarten and first grade (Hammer et al., 2010). It would make sense then that a child immersed in oral language, such as hearing embedded and meaningful words and phrases, would become a successful oral language learner (Howat, 2006).

Five meta-analyses examined the role of language-based interventions with young children (see Table IV). Two meta-analyses by the National Early Literacy Panel (2008) and Law, Garrett, and Nye (2004) supported the use of interventions to increase a child's language skills, and the other three meta-analyses (Cleave et al., 2015; Peterson, 2011; van Kleeck et al., 2010) examined specific strategies to address children's expressive language skills.

Law and colleagues (2004) and The National Early Literacy Panel (2008) both indicated that interventions had an impact on the child's language skills. Law and colleagues (2004) indicated that interventions had significant effect sizes when children received interventions for expressive phonology skills (effect size= 0.44, confidence interval= 0.01, 0.86) and expressive vocabulary delays (effect size: 0.98, confidence interval=-0.59, 2.56), but there was less for children with receptive syntax delays (-0.04, confidence interval=-0.64, 0.56). In addition, interventions that lasted more than eight weeks were more effective than shorter interventions in addressing the following skills: expressive phonology (effect size=0.74, confidence



interval=0.14–1.33), expressive syntax (effect size=0.43, confidence interval= -0.06, 0.93), and receptive syntax (effect size=0.19, confidence interval=-0.12, 0.51). The National Early Literacy Panel (2008) reported an effect size of 0.63 for the studies that examined the children's language outcomes and successfully improved the child's language skills. Additionally, interventions given at younger ages were more effective for the children, and those who received interventions at older ages (between three and five years) and interventions provided in a play-based setting did not have significant findings when compared to interventions provided in other settings (e.g., school), nor did the interventionist (e.g. parent or teacher).

Van Kleeck and colleagues (2010) examined the use of telegraphic speech or grammatical input when working with young children with language delays. Telegraphic speech is described as a message with only content words and few functor words (e.g. conjunctions) (Sandbank & Yoder, 2016) and has historically been recommended to use with children who have 1-2-word stages of expressive language skills in order to increase both receptive and expressive language skills (van Kleeck et al., 2010). When working with children using this method, the SLP can simplify the message but ensure that it is still grammatical or use telegraphic speech and omit grammatical markers so that the message only contains content words. An effect size of -0.25 (confidence interval=-0.55, .13) was reported when examining the comprehension of prelinguistic students with cognitive delays in Brown's early Stage I with the use of telegraphic input, which indicated that the results were not significant. An effect size of 0.79 (confidence interval=-0.94, -0.22) was reported on a single study for children with moderate to severe cognitive delays but was considered as weak evidence. The effect size for the processing studies was 0.45 (confidence interval= 0.31, 0.57) and favors using grammatical input with children in Brown's Stage II or who are typically developing and are in Brown's late Stage

I or Stage II.

Peterson (2011) focused on narrative language interventions, which contain both macrostructural elements (e.g. the overall organization) and microstructural elements (e.g. linguistic features) and are both recognized as ways to target language skills. By addressing narrative language tasks to improve a child's ability to tell stories, narrative interventions can target a specific language ability during a naturalistic language task. The effect size for the use of narrative interventions using macrostructures ranged from 0.73 to 1.57; however, there was not a connection between the interventions and materials used, and the child's ability to attend should also be considered when utilizing expressive narrative interventions. The effect sizes that measured narrative interventions using microstructures were moderate to large with the exception of one study. While the studies used did not provide many details on the interventions used, interventions that use direct and explicit interventions were found to be beneficial for the children.

In a systematic review and meta-analysis, Cleave and colleagues (2015) examined how conversational recasts were defined as a way to correct or expand the child's utterance, with the expectation that the child will not have to imitate the adult. Results of the systematic review indicated that the majority of the studies supported the use of recasts when targeting a child's grammatical development. Findings of the meta-analysis indicated an effect size of 0.96 for the Early Efficacy studies (first phase used to determine if there was a cause-effect relationship between the intervention and outcomes using experimental controls), and there was an effect size of 0.76 for Later Efficacy (cause and effect measures using generalizable conditions) and Effectiveness studies (are effects seen in more typical and less controlled conditions). Results indicated that the Early Efficacy studies demonstrated the largest gains; however, those

interventions were focused on using recasts to alternative language treatments. The Later Efficacy and Effectiveness studies compared recasts to no-treatment controls; however, there were still some gains made.

Two single subject studies by Hadley, Rispoli, and Holt (2017) and Peredo and colleagues (2018) address parent interventions that examined the child's language skills. In a follow-up quasi-experimental study, Hadley and colleagues (2017) examined a parent intervention that increased their sentence diversity, specifically targeting the lexical noun phrase subject, which would have an impact on their child's sentence diversity. A total of 19 families and their typically developing children participated in the study. The intervention involved parental training sessions and group and individual coaching sessions, which were focused on child language development, language modeling strategies, and toy talk strategies through roleplaying, such as talking about the toys. Conversational language samples were collected during child and parent free play and during semi-structured play with the parent, child, and researcher present in order to provide opportunities for language (e.g. sentence subjects). Results indicated that a child's sentence diversity is a predictor of their acquisition of tense and agreement. In addition, the diversity of the parent's sentence diversity, specifically in their use of noun phrase subjects and declarative sentences promoted the child's overall syntactic growth.

A pilot study by Peredo and colleagues (2018) examined the use of Enhanced Milieu Teaching and an adult learning approach, Teach-Model-Coach-Review, with low-income Spanish-speaking caregivers, using a single-case, multiple-baseline, across-behaviors design across three child and parent dyads over a short time period. The study focused on in-home support of Spanish-speaking children aged 30–42 months with a language impairment. EMT

**Table IV**  
*Study Characteristics of Language Interventions*

Author/Year	Years Reviewed	Participants	Number of Articles	Effect Size Findings	Focus of Measures
Cleave et al. (2015)	1970 - 2013	English speaking children; 18 months-10 years	35 (Literature review) 14 (Meta-analysis)	Evidence is limited, but majority of studies support the use of conversational recasts	Effectiveness of conversational recasts in the grammatical development of children with language impairments
Law et al. (2004)	1978-2000	Children with phonological, receptive and expressive language delays	13	Interventions had significant effect sizes when children received interventions for expressive phonology and vocabulary delays and less for children with receptive syntax delays	Interventions carried out with children with developmental speech and language delays
National Early Literacy Panel (2008)	1970-1980	Birth-5 years	19	Improved expressive and receptive language, phonemic awareness, and verbal intelligence in children with a range of abilities	Effectiveness of interventions designed to improve children's vocabulary, syntax, and receptive language
Peterson (2011)	1980-2008	Preschool-grammar school aged, language impairments	9	Effect size for narrative interventions using macro/microstructures was moderate to large; however, connections were variable between intervention and materials used	Narrative-based interventions
van Kleeck et al. (2010)	1969-2006	English speaking prelinguistic children, in Brown's Early and Late Stage I or II, aged 3; 7-15; 9 with cognitive delays	22	Telegraphic speech not recommended for children with language delays due to low external and internal validity of the studies and inconsistent findings using either telegraphic speech or grammatical input	Addressed whether children demonstrated greater language gains in comprehension or production when telegraphic speech was used compared to grammatical input

training was adapted for Latino families, such as teaching the families to comment on the child's interests. Results showed that the mothers were able to use the taught strategies to increase their child's language skills to novel contexts, specifically, the use of matched turns, target talk, and elicitation procedure. In addition, the children also increased their language skills. The mothers generalized strategies to an untrained activity and maintained their behavior a month following the intervention. One of the mothers was able to generalize the use of communication elicitations and two generalized the use of expansions.

The findings of these studies suggest that specific strategies improve a child's overall expressive language skills, such as the use of repeated storytelling tasks to improve a child's narrative macrostructure or the use of grammatical recasts. However, the studies were not focused on interventions when working with CLD populations, had a limited number of participants, and were not clear as to what works best for specific children. For example, when examining The National Early Literacy Panel (2008), the interventions were focused on children between the ages of birth to five years, which consists of a large range of child development skills; therefore, it is difficult to know which interventions would work for each age group, as each child within each age cycle requires different needs. In addition, the study did not discuss how the effects of preschool may have impacted the findings of the child's language skills, as there are a variety of preschool models with some that are higher in quality than others.

### **1. Summary of the Literature**

Based on the studies that examine language interventions, specific activities have been found to be effective when working with children with language delays; for example, using grammatically intact phrases and sentences (van Kleeck et al., 2010), using repeated storytelling tasks (Mol et al., 2008), grammatically recasting sentences (Cleave et al., 2015), and using age

appropriate vocabulary words ((DeVeney & Hagaman, 2016). In addition, interventions over eight weeks long appear to be promising when addressing the expressive phonology, expressive syntax, and receptive syntax in the language needs of young children (Law et al., 2004).

However, the majority of the interventions have been assessed while working with the cultural majority of the US (Wing et al., 2007). In addition, the interventions are limited in scope when addressing language delays. For example, the interventions are based on the child and adult engaged in a structured activity with the adult modeling higher structured language, purposeful vocabulary, and grammatical sentences. The studies do not consider the child's progress during play-based activities, naturalistic routines or the use of familiar toys and materials, carryover of the tasks to other settings, or family understanding of the use of these strategies when talking with their children at home.

#### **G. Parent-Implemented Language Interventions**

The purpose of a parent-implemented language intervention is to teach and allow for a parent to learn ways to build upon their child's learning and overall development (Barton & Fettig, 2013). By including parents in interventions, it increases the amount of intervention that the child receives and decreases the time that the child will need to spend with interventionists (Roberts et al., 2016). Parents can help with the reinforcement of positive behaviors and the generalization of learned skills to various settings given the access they have to their children (Magaña, Lopez, & Machalicek, 2017). During parent-implemented naturalistic language interventions, the parent is the primary intervention provider and is trained on how to implement interventions and will work in a collaborative relationship with a professional to develop a plan and intervention targets (Rakap & Rakap, 2014). There are various types of naturalistic intervention strategies that are implemented, which include enhanced milieu teaching, incidental

teaching, responsive parenting, responsive teaching, and It Takes Two to Talk-Hanen parent program; however, the most important characteristics to consider are the child's personal interests, using everyday activities as a source of learning opportunities, as well as considering the adult's sensitivity to interacting with others, joint attention, and turn-taking (Dunst, Raab, & Trivette, 2012).

Since parents play an important role in the language development of their children, there are four aspects that should be considered when addressing their language development: the amount of the parent-child interaction, the caregiver's verbal and nonverbal response to their child, the language input that the child receives, and the support strategies used (Roberts & Kaiser, 2011). Therefore, teaching parents how to support their child's language development is important when addressing their child's language delays (Roberts & Kaiser, 2012). In order to meet these needs, the desired behaviors can be taught or modeled with families (Kaiser & Roberts, 2013b; Peredo, 2016; Roberts et al., 2016; Stoner, Meadan, & Angell, 2013) to ensure that the family's needs are being met (Hanson, 2011; Howart, 2006; Lynch & Hanson, 2011; Ortiz & Ordoñez-Jasis, 2005; Peredo, 2016).

When modeling desired behaviors to adults, the ability to coach families to use targeted language or activities with their children is important (Peredo, 2016), rather than attempting to teach families a number of strategies or to teach the family to become therapists (Roberts et al., 2016). The purpose in having families learn specific strategies would be that families are the main communication partners and teachers for their young child (Kaiser & Roberts, 2013b; Stoner et al., 2013). If a professional was interested in using this strategy with a family, adult learning methods must be considered (Roberts et al., 2016). Additionally, two other important factors must be considered. One is that the professional must determine the needs and practices

of the individual family and should do this through interviews to avoid assumptions, as well as avoid sending mixed messages to the family; for example: “I value your culture, but please embed my practices into your everyday language” (van Kleeck, 2013, p. 79).

Specific adult learning methods have been introduced by Dunst and Trivette (2009) as a way to teach adults how to use skills for specific approaches: introducing the skill to the adult, modeling the strategy, coaching the adult through praise and constructive feedback, and having the adult use self-evaluation and self-reflection in order to assess their progress with the final goal of mastery. Another model that is based on Dunst and Trivette (2009) is a Teach-Model-Coach-Review approach. This model has been successful in early intervention (EI) practices and involves a series of steps. First, families are taught ways to engage with their child through a workshop model, then skills are modeled for families, and families are coached through praise and constructive criticism. At the end the session is reviewed by both the family and professional (Kaiser & Roberts, 2013b). A third method can be to have workshops for families, during which specific academically based methods can be introduced for family members, such as how to use wordless picture books (Ortiz & Ordoñez-Jasis, 2005). In this activity, families can be taught how to use specific early literacy skills, such as story sequencing, predicting, and identifying key characters within a story (Ortiz & Ordoñez-Jasis, 2005).

While these models are only suggestions of ways to model behaviors for families, they can be used as ways to encourage families to work with their children in a positive way and will encourage a trusting and respectful relationship with professionals and the families with whom they work. An additional benefit of this method is that specific strategies can be taught for the family to use at home, which is a natural environment for them (Stoner et al., 2013). It is also



important to keep in mind that, in order for this to be an effective tool, families should show an interest, have time to use the methods, and be motivated (Kaiser & Roberts, 2013b).

Five meta-analyses (Barton & Fettig, 2013; DeVeney, Hagaman, & Bjornsen, 2017; Rakap & Rakap, 2014; Roberts & Kaiser, 2011; Te Kaat-van den Os, Jongmans, Volman, & Lauteslager, 2017) and one systematic review (Tosh, Arnott, & Scarinci, 2017) examined parent-implemented interventions (see Table V).

According to the results of the meta-analyses, all five demonstrated positive effects and results following the parent-implemented interventions (Barton & Fettig, 2013; DeVeney et al., 2017; Rakap & Rakap, 2014; Roberts & Kaiser, 2011; Te Kaat-van den Os et al., 2017). Roberts and Kaiser (2011) identified that the three most common parent-implemented interventions identified were It Takes Two to Talk-Hanen parent program, parent-based interventions, and focused stimulation; however, the ones that were the most often provided included verbal turn-taking, providing language models, and responding to the child's communication. Effect sizes were calculated for language constructs with an effect size of 0.35 (confidence interval=0.05, 0.65) for receptive language and 0.82 (confidence interval=0.37, 1.38) for expressive syntax, which indicate that the parent-implemented intervention had positive findings in all language areas. In addition, parents in the parent-implemented intervention reported that their child produced 52 more words than those in the control group. When parent-implemented interventions were compared to therapist-implemented interventions, the findings were smaller and nonsignificant, with an effect size of -0.15 (confidence interval=-0.56, 0.27) for rate of communication and 0.42 (confidence interval=0.06, 0.79) for expressive morphosyntax, while significant effects were calculated for receptive language (effect size= 0.41, confidence interval=0.08, 0.76) and expressive syntax (effect size=0.42, confidence interval=0.08, 0.76). In

**Table V**  
*Study Characteristics of Parent Implemented Interventions*

Author/Year	Years Reviewed	Participants	Number of Articles	Effect Size Findings	Focus of Measures
Barton & Fettig (2013)	1972-2012	277 parents and 241 children ages 24 months-8 years with Autism, developmental delays, speech and language delays, and other disabilities	24	Both the child- and parent-implemented outcomes improved, and the parents implemented the interventions with high fidelity	Fidelity of parent-implemented interventions
DeVeney et al. (2017)	1993-2014	175 children identified as late talkers, English speaking, with an average age of 27 months, and with expressive language delays	8	Both the parent and clinician directed therapy were effective for the late talkers based on the child's performance on standardized testing	Compared interventions for children diagnosed as late talkers to clinician directed therapy and parent implemented therapy using general language stimulation, milieu teaching, and focused language stimulation.
Rakap & Rakap (2014)	1992-2010	Children 60 months of age or younger	5	Parents learned naturalistic language interventions and were successful with the implementation, and there were positive changes in the children's language skills	Naturalistic parent-implemented interventions: milieu teaching, pivotal response training, enhanced milieu training, blended communication, and behavior support intervention, functional communication training, and naturalistic language paradigm
Roberts & Kaiser (2011)	1992-2010	Children 18-60 months of age with children with primary and	18	Positive and significant effects on receptive language and expressive syntax, receptive and expressive vocabulary, expressive morphosyntax,	Evaluated the effects of parent-implemented language interventions

Author/Year	Years Reviewed	Participants	Number of Articles	Effect Size Findings	Focus of Measures
		secondary language impairments		and rate of communication following parent-implemented interventions	
Te Kaat-van den Os et al. (2017)	1975-2015	Children diagnosed with a developmental delay aged 1-5 years	7	Significant effects on the parent-implemented language interventions on the parent responsiveness reported, but there was no significant effect of the intervention of the parent's language complexity; however, there were improved parent-child interaction behaviors four months following the end of the intervention	Parent-implemented early language interventions: It Takes Two to Talk-Hanen parent program, responsivity education/prelinguistic milieu teaching, and enhanced milieu teaching
Tosh et al. (2017)	1959-2012	Children aged two and older with speech and language deficits	14	Home-based programs are as effective as parent implemented interventions compared to children who do not receive any interventions; additionally, home-based programs are cost effective with high parent satisfaction	Investigate the effectiveness of home-based speech and language services to children that did not receive services and traditional clinical based services

addition, parents in the parent-implemented intervention group indicated that their child produced 22 more words than those in the therapist-implemented intervention.

The results indicated that the differences between the parent- and therapist-implemented interventions are variable and depended on the language target. The largest language outcomes were reported in expressive morphosyntax in the control and therapist-implemented comparison with an effect size of 0.82 (confidence interval=0.37, 1.38) and the therapist-implemented intervention with an effect size of 0.42 (confidence interval=0.06, 0.79). Finally, parents who received parent training were significantly more responsive than those not trained (effect size=0.73, confidence interval=0.26, 1.20) and used more language models than those who were not trained (effect size=0.38, confidence interval=-0.03, 0.80), but the difference between trained parents and those in the control group were not significant (effect size=0.26, confidence interval=-0.13, 0.64).

Barton and Fettig (2013) focused on routines, progress monitoring, video modeling, and self-reflection, with the majority of the studies using live video modeling, performance-based feedback, and opportunities for the parents to practice their new skills. The majority of interventions were done in a naturalistic setting with some focus on the family's routines. Measures that were considered important were parent generalization and maintenance of the intervention and the overall fidelity of the parent intervention. Rakap and Rakap (2014) focused on the use of pivotal response training and found that it was beneficial for children who were 48 months old with Autism or more significant delays. In addition, the use of enhanced milieu training was beneficial for 40-month-old children with more significant language delays and a variety of disabilities, while the use of blended communication and behavior support intervention was helpful with children who were 42 months old and had milder delays. Functional

communication training was found to be best for children who were 34 months and had more significant language delays and diagnoses (e.g. spastic quadriplegia), and the use of naturalistic language paradigm was best for children 52 months of age with mild to moderate language delays or autism. DeVeney and colleagues (2017) identified that children demonstrated improved outcomes on specific word use, expressive vocabulary skills, MLU, receptive and expressive language skills, the child's phrase length, the number of words used, speech intelligibility, phonological development, and the child's social skills when children were provided with clinician directed therapy. When the parent direct therapy approaches were considered, areas of improvement were noted in focused language input, the use of strategies such as prompting, and decreased parental stressors. Te Kaat-van den Os and colleagues (2017) indicated that the short-term effects of the interventions were found on intentional acts (effect size=0.68), verbal turns (effect size=1.2), diversity of vocabulary (effect size=1.3), and MLU (effect size=0.32). There were no significant short- or long-term effects reported on interventions targeting expressive language. Tosh and colleagues (2017) reported satisfactory evidence that children who received either home-based or traditional speech and language services had comparable outcomes and poor evidence that findings were generalizable; however, dosage and intensity findings were not indicated. This compares to children who did not receive any interventions; therefore this study indicated that children who received home-based programs were more effective in improving the language skills of a child identified as a late talker than those who did not receive any intervention. Although parental perceptions were minimal, there was positive feedback provided by those parents who received home-based services compared to traditional therapy services.

The findings of the meta-analyses, reviews, and studies indicated that parent perceptions are important to consider when working with families and that children's language skills can

increase when strategies are taught. While the authors found some positive changes in their children's skills, the inclusion criteria of the studies were complicated by the definition of parent-based interventions and the diverse pool of children, and most studies did not report fidelity measures. In addition, the strategies suggested were diverse in nature and generalizability may be difficult given that parent and child needs may vary.

### **1. Summary of the Literature**

Based on the meta-analyses and reviews of the literature analyzed, children were found to make positive changes in their language skills, and the interventions were found to increase the parents' ways to learn and implement language techniques. In addition, the parents were found to be observant of their child's language development and changed the way that parents communicate with their child. While Barton and Fetting (2013) were focused on using fidelity measures, the study was successful and provided information regarding the consistency of the intervention and will help the efficacy of specific practices in the future. While the literature provides ideas to consider when working with families using home-based interventions, ideas on how to provide interventions with CLD families were not addressed, nor were the best strategies or methods to use described. Parent perspectives were also not taken into account, such as what they felt they benefited from the most during the intervention, how they would carry over the interventions in the future, or how they would use the skills taught during the intervention in order to increase their own skills when working with their child in the future.

### **H. Home-Based Language Interventions**

In the literature, specific ways that families participate in their child's language learning is through home literacy (Hammer et al., 2010; Roberts et al., 2016), fostering language skills

**Table VI**  
*Study Characteristics of Home-Based Interventions*

Author/Year	Years Reviewed	Participants	Number of Articles	Effect Size Findings	Focus of Measures
Durán et al. (2016)	1995-2013	2- to 6-year-old dual language learners at risk for language delays	7	Inconsistent language outcomes for children; however, results of book reading activities indicated that techniques were effective with helping to increase the home language and with the child's majority language in CLD children	Home-based interventions using a home instruction program and parent-child book reading tasks
Manz et al. (2010)	1994-2007	Preschool aged children and low-income or CLD children	31 (literature review), 14 (meta-analysis)	Most common intervention was dialogic reading interventions and shared storybook reading tasks	Family-based literacy interventions (Literature review) Analyzed literacy-based interventions effectiveness for low-income or CLD children in expressive language, phonemic awareness, letter knowledge, print awareness, and reading (Meta-analysis)
National Early Literacy Panel (2008)	1970-2003	Children aged 0-5 years	23	Home and parent intervention programs had a statistically significant and positive impact on children's oral language skills and general cognitive abilities	Examined parent and home programs that addressed the preliteracy and literacy development of young children where mothers provided interventions
Reese et al. (2010)	1988-2008	Preschool and kindergarten aged children	11	Use of training parents to use extended parent-child conversations was promising to use with children, specifically children who are CLD	Language and literacy development of children including parent-child book reading activities, parent-child conversations, and parent-child writing activities

(Hammer et al., 2010; Roth et al., 2006), and vocabulary development (Rowe, 2012). When addressing the language needs of young bilingual children, it is important to consider the development of both the home and majority language (Durán et al., 2016), as well as the needs of the child and family, resources, and goals of the family.

Home-based literacy interventions were analyzed in four separate literature reviews and meta-analyses (Durán et al., 2016; Manz, Hughes, Barnabas, Bracaliello, & Ginsburg-Block, 2010; National Early Literacy Panel, 2008; Reese, Sparks, & Leyva, 2010) (see Table VI). While the studies were inconsistent in their findings, The National Early Literacy Panel (2008) and Reese and colleagues (2010) found significant effects on the child's language skills. A review of the literature by The National Early Literacy Panel calculated an effect size of 0.65 (confidence interval: 0.22, 1.62) in the children's cognitive abilities, with an effect size of 0.28 (confidence interval :0.18, 0.55) in oral language, using the following strategies: dialogic reading, home visiting programs, teaching mother's language strategies in a clinical setting, and a parent training with weekly sessions in the child's kindergarten. A second review of the literature by Reese and colleagues (2010) indicated that the use of parent-child book reading activities is an effective way to increase a child's vocabulary skills using a variety of measures, which include using video instruction (Whitehurst & Lonigan, 1998), training in the use of dialogic and morphological skills (Chow, Mc-Bride-Chang, Cheung, & Chow, 2008), and using a library training program (Huebner, 2000). Meanwhile, Mol and colleagues (2008) supported the use of shared parent-child reading activities. Additional strategies included the use of asking open-ended questions during narrative events and repeating the child's utterances (Peterson, Jesso, & McCabe, 1999), teaching mothers to use wh- questions and to expand on the child's utterances



(Reese & Newcombe, 2007), and in modeling with parents to use extended discourse with their children, such as narrative speech during play (Jordan, Snow, & Porche, 2000).

A review of the literature and meta-analysis by Manz and colleagues (2010) indicated that the majority of the studies used in literature review included more males, children that were four years old, studies lacking the children's ethnicity and language, and children, with an identified speech and language disability, enrolled in preschool programs. In addition, a third of the children were identified as at risk for literacy development, and the interventionists were mostly mothers, with the majority of families being of low income. While the majority of the interventions were completed within the home, oral language and reading abilities were the most common interventions. Findings from the meta-analysis included an effect size of 0.33, which was indicative of a statistically significant small effect size for the emergent literacy interventions that involved families; however, a global effect size was not reflective of the benefits of the interventions for the children. Although the majority of the participants in the studies were White (effect size=0.64), there were significant outcomes in print (effect size=1.21) and expressive language (effect size=0.76). Participants who identified as middle to high SES had an effect size of 0.39 compared to those of low income (effect size=0.14). While the majority of the studies focused on dialogic reading interventions (effect size= 0.32), interventions that were provided at home had the largest effect size (0.47), with the following outcomes: print (effect size=1.05), expressive language (effect size=0.53), general reading (effect size=0.45), phonological awareness (effect size=0.40), and receptive language (effect size=0.26).

Durán and colleagues (2016) found a large effect size for researcher developed English measure of receptive vocabulary to measure a parent's home language reading intervention (effect size= 2.37) (Roberts, 2008) and on a parent-child storybook task in the home language

based on the total number of words (0.53) and different words (0.68) (Boyce, Innocenti, Roggman, Norman, & Ortiz, 2010).

While the meta-analyses and reviews of the literature focused on a variety of language-based activities, most were focused on the use of dialogic or book reading activities. While the children demonstrated an increase in vocabulary skills and expressive language skills, the studies did not address how home-based routines were used or how the importance of the words were identified for the families and children in the studies. While the interventions were more literacy based, studies based on play- and home-based routines and interactions were not addressed. Also, the use of top-down language-based strategies were not addressed, which may have an impact on parent motivation or their ability to carry over strategies. The studies did not include qualitative research on parent perspectives, which could have provided more information on the additional types of interventions that CLD parents have provided at home or on their experiences of using interventions.

### **1. Summary of the Literature**

The literature so far has addressed the benefits of using mothers as an interventionist when providing home-based interventions. While the children appeared to benefit from these services, the literature was focused on mothers providing interventions and on other family members who may have also had an important role in the children's lives. In addition, the studies were focused on literacy-based interventions and in the use of specific strategies, such as using open-ended questions, repeating the child's utterances, and using writing tasks, also suggested, which may not be culturally appropriate for CLD children or their families. The importance of fidelity was not addressed within the studies, which could have provided additional information

to professionals regarding suggestions or ideas that benefit CLD families, such as providing more models or advice when working with them.

### **I. Intervention Implementation with Families**

When working with CLD families, differences in cultural, socioeconomic, or linguistic backgrounds between the professional and family may exist, and regardless of these differences, the family's culture needs to be considered. This also includes acknowledging family strengths and empowering families in order to strengthen their competencies (Roberts et al., 2016). The family's acculturation, or the ability to incorporate one's culture of origin with that of their new culture, and the families' child interactions must be considered when working with CLD families (Anderson & Finch, 2017; Zungia, 2011). For example, some Latino families value a collectivist cultural orientation (focused on child interdependence or group harmony) compared to some families who value an individualist cultural orientation (focused on child independence); however, this will vary based on the family's level of education and acculturation (van Kleeck, 2013).

One way to begin the process of working with CLD families is to avoid stereotyping families based on their cultural background or practices, such as assuming that the one parent is the primary caregiver, that children learn the best by active interaction, or that adults value children talking (van Kleeck, 2013). Professionals also need to consider the verbal and nonverbal communication skills (e.g. eye contact, body language) they use with families, as some languages are high context (word meanings can be communicated through facial gestures), while others are low context (using direct and logical communication), and communication between these two styles can lead to misunderstandings (Lynch, 2011).

In this section, the focus is on working with CLD families, specifically Latino families. Ways to develop trusting relationships and to build collaborative relationships will be reviewed.

### **1. Developing Trust**

In order to develop meaningful relationships between educators and families, the ability to establish a trusting relationship is an underlying factor of this process (Harry, 2008; Kummerer, 2012). The main idea that must be grounded is that families are important in the development of their child (Corr et al., 2016). Another tenet is the importance of family and professional collaboration (Blue-Banning et al., 2004; Cooper-Duffy & Eaker, 2017; Epley et al., 2010). Blue-Banning and colleagues (2004) examined the development of positive interpersonal partnerships between parents and families with and without children with disabilities. The six indicators identified were honest and respectful communication, loyalty and commitment to the family, equal power when making decisions, professional competence, and both a respectful and trusting partnership. Epley and colleagues (2010) also identified the importance of these characteristics in a professional and family relationship. The authors indicated that a collaborative relationship involves respect, honesty, mutual trust, listening, and flexibility.

Merriam-Webster (n.d.) defines “trust” as “the assured reliance on the character, ability, strength, of someone or something.” When working with families, professionals must keep this definition in mind, as well as the vulnerability of families. Not only are families trusting the expertise of the professional, but professionals are also vested in the best interest of their child, and trust that there will be open communication between the professional and family. In a Blue-Banning et al. (2004) study, when defining trust, families indicated that they wanted reliable and trustworthy professionals, a sense of personal safety and also that the child would be treated with dignity, and trust with confidential and personal information about the family’s history.

Therefore, when working with families, both the formal definition of trust and the perceptions of families should be implemented and considered. In building trust, the family and professional can develop a positive relationship that is collaborative and respectful of each other's views and needs. Only a few studies addressing parental trust exist in the literature, with two qualitative studies—Angell, Stoner, and Shelden (2009) and Maul (2015)—that address trust and children with disabilities.

A qualitative study by Angell and colleagues (2009) examined trust between 16 parents of children with disabilities and their children. The authors examined how the mothers described their trust in educators and the mother's factors in what they identified as the facts that impact their trust in the staff. Semi-structured interviews were completed with the mothers with children in elementary school, middle school and high school who had children in inclusive, self-contained classrooms, and received pull-out services. Triangulation, participant validation, and member checks were used to check confirmability, and three themes were identified as family factors, teacher factors, and school factors, with subthemes also identified. In the family factors the subthemes that were identified that affected trust were disposition to trust, previous history of experience, and the child's communication and/or nonverbal behavior. The subthemes identified for teacher factors that had the greatest impact on trust were authentic caring, communication, and lack of knowledge of the child's disability. The participants identified the characteristics that affected their trust in school factors, which included school climate, school services, and collaboration among the parents and staff. While the study identified factors that influenced the process of establishing and maintaining trust, the study had limitations, such as only interviewing the mothers once and having a sample of mothers with children of different ages, academic support systems, and school grades.

A qualitative study by Maul (2015) examined the perceptions of nine practices SLPs use within the schools when working with CLD families. Semi-structured interviews were completed with the SLPs, and four major themes emerged: language as both a barrier and a bridge, work with interpreters, respect for cultural differences, and positive interactions with family members. The SLPs emphasized the value of being able to communicate with the parents in Spanish and for the child to maintain their native language skills. The parents emphasized the need for appropriate translations and collaborative approaches between the SLP and the interpreter. In addition, the SLPs indicated how respect for cultural differences are important, for example, understanding family hierarchy statues. Lastly, the SLPs spoke of the relationships they had with the family members, such as the high amount of respect the families had with the professionals. While the study indicated ways to increase parent trust and respect, there were some methodological flaws, such as a lack of data triangulation and participation bias.

Based on the few studies that examine trust among educational professionals within the schools and CLD families, factors that assist in developing this process include open and honest communication, collaborative approaches, and demonstrating respect with families. While the characteristics appear to be positive in nature, ways to develop and maintain these skills, as well as the ways to teach the skills to professionals, were not addressed. While these studies were specific to the academic environment, it is possible that the same characteristics can be carried over to other settings, such as working with families during community-based activities. Further research on how trust is formed between families and educators, as well as ways to enhance and continue trust with families and CLD populations, should be considered.

## **2. Collaboration**

The ability to build a collaborative and trusted relationship among families and professionals can be best explained as a process. It must be built on mutual trust and respect and is not one that can be done with haste; however, it has the added challenge of being difficult to establish if families and professionals come from different backgrounds (Eberly, Joshi, & Konzal, 2007). One way to build on family-professional collaborations is for professionals to build upon cultural reciprocity (Kalyanpur & Harry, 2012). This allows for both parties to engage in dialogues during which they can learn about each other (Kalyanpur & Harry, 2012). In order to develop an honest and open relationship, professionals need to reach out to families in responsible and thoughtful ways, and in doing so, can help both parties acknowledge the practices of each other's systems (Eberly et al., 2007). When families are excluded from collaborative efforts, barriers between schools and families may develop with added consequences for CLD families (Buren, Maggin, & Brown, 2018).

When working with CLD families, it is best to ensure that the activities that are suggested to the family are purposeful and incorporated into the family's routine (Hanson, 2011; Howat, 2006; Ortiz & Ordoñez-Jasis, 2005; Peredo, 2016). One way to ensure that family's needs are being met is to involve them in goals and interventions for their family and child (Hanson, 2011; Peredo, 2016). In doing this, the family's needs, as well as the family's concerns and priorities, can be directly addressed (Lynch & Hanson, 2011). Additionally, it is vital that cultural and familial values and priorities of the family are discussed and considered when implementing interventions (Lynch & Hanson, 2011). For example, schools within the US value an individualist cultural orientation; therefore, it is beneficial to explain this difference to families so that they become familiar with American academic expectations (van Kleeck, 2013).

Specific ways to include the family into collaborative efforts are by using materials that are available (Howat, 2006), such as newspapers, and ensuring that goals match the family's priorities (Lynch & Hanson, 2011). For example, the professional can determine if a family priority is for the child to learn to take verbal turns during conversations (Peña & Fiestas, 2009). It would also benefit the professional to determine how the family defines and views family involvement and not make assumptions about level of involvement (Lynch & Hanson, 2011). This may encompass considering additional family members' roles in the child's development (Howat, 2006), such as an aunt's role in childrearing or childcare, and how their involvement can benefit the child's developmental skills. Another example would be for educators to recognize their own practices and the role of those practices. For example, a cross-cultural practice in Western middle-class families is for the families to speak to their child from or even before birth, as they recognize that the role of the environment will influence their child's language development (Rowe, Denmark, Harden, & Stapleton, 2016). While this may be considered a common practice in mainstream culture, it may not be one that non-mainstream families practice themselves; however, it does not make their home beliefs or practices less important or unwarranted. Also, the therapy technique should be considerate of the family's background. Wing and colleagues (2007) consider that some therapy techniques, when working with children with language delays, rely on adult-directed techniques, such as language modeling, narrations, and expansions, which are consistent with language valued by middle- to upper-class parents in the US.

A powerful strategy for building upon collaboration skills is for the professional to develop active listening skills. Active listening skills are defined as a way for a professional to understand the speaker's experience without the listener interpreting or interrupting their own



understanding onto the speaker (Weger, Castle, & Emmett, 2010). This strategy has the ability to validate the family's concerns and empower them to advocate for their children (Pighini, Goelman, Buchanan, Schonert-Reichl, & Brynensen, 2014). While collaboration takes time to establish with families, the hope is that this will foster positive relationships that will benefit both the professional and family.

Three different studies on collaborative relationships were examined. A review of the literature by Harry (2008) identified key requirements for collaborative relationships between families and professionals. A single study that examined collaborations between SLPs and families was addressed by Verdon, Wong, and McLeod (2016), and a meta-analysis by Buren and colleagues (2018) examined collaboration between families and professionals during the Individual Education Plan (IEP) process.

Harry (2008) identified the collaborative relationships between special education professionals and CLD families from the years 1992 to 2006. The review identified the key requirements for collaborations between families and professionals, best practices with families and their children, and recommendations for collaborations. Specific indicators have been identified in home-school collaborations, which include caregiver satisfaction (Singer, 2002); however, this may differ for CLD families who may be dissatisfied with services or feel that they are being excluded. CLD families' definition of collaboration was defined by Blue-Banning and colleagues (2004) as communication that is respectful and positive; a family commitment; equal power in decision making; competence when making and reaching goals; and mutual trust and respect. While honesty and respect are additional professional characteristics of collaborations (Blue-Banning et al., 2004), professional assumptions, biases, and cross-cultural misunderstandings can hamper positive relationships. There are a variety of studies that have

focused on the collaboration between a professional and CLD families, which date back to the 1975 Handicapped Children Act, and the key themes of the research following the implementation of the act indicated that parents had a mistrust of the academic setting based on exclusionary practices (e.g. Marion, 1979), lack of professionalism when including low-income groups (e.g. Bennett, 1988), and the limited amount of information when including parents' rights (e.g. Sullivan, 1980). During the implementation of the Individual with Disabilities Act, there was an increase in the awareness of including CLD children and their families. The themes that Harry (2008) identified in the literature included identifying the cultural view of disability (e.g. how families view disabilities), how families are viewed through deficits lenses, in setting culturally responsive transition goals, and the cultural views of the caregivers. The implications for professional practice include CLD families being included in research, ensuring appropriate preservice professional preparation programs, and cross-cultural preparation, coursework on multicultural topics, an awareness of one's own biases and prejudices, critical perspectives on the assumptions and practices in special education, and placements in diverse settings.

While specific to SLPs, a study that examined the collaboration between SLPs, families, and communities to support the language, communication, and speech skills of CLD children was examined by Verdon and colleagues (2016). The study involved 14 international sites and the data reported used ethnographic observations of the SLP's practice with CLD families using field notes, photos, videos, activities, reflections, artifacts, and interviews with the therapists and families. The two main themes that emerged from the data were understanding cultural expectations and approaches to family involvement and building partnerships with families in order to work on common goals. Although the SLPs may speak the same language as the family, the cultural approaches to therapy and the cultural expectations of the family need to be

considered when implementing services. When building the relationship to work towards common goals, the SLPs valued and incorporated the parent's goals, having open communication and trusting relationships. When collaborating with communities, the two themes that emerged were that SLPs needed to understand the cultural context of the community and build respectful partnerships with the community members. When developing an understanding of the cultural context of the communities, it is important to develop an understanding of the community's history, teachings, and traditions to ensure that therapy is aligned with those factors. In order to build reciprocal partnerships with communities, it was recommended that the community accept the role of the SLP in order to start building a strong bond with the community.

A meta-synthesis by Buren and colleagues (2017) examined the perspectives of families of children with disabilities in non-dominant cultures on home-school partnerships in the IEP process and in-school collaboration. Eighteen qualitative studies from the years 1992-2015 were included and four themes were identified. The first identified theme was the consideration of parent and teacher cultural background differences and the families' frustration and misunderstanding between the two parties. The second theme was based on the families' confusion due to their lack of knowledge of special education law and access to poor interpreters. The third theme included disrespectful behaviors that can occur between families and schools, which have an impact on the families' relationships with the schools. The final theme referred to the families requiring additional support from the school professionals or outside agencies due to the lack of support they felt from the schools.

While the studies suggest ways to create and develop respectful, responsible, and reciprocal collaboration between SLPs and CLD families, they do not provide perspectives on

how families can suggest or advocate for services that are appropriate. In addition, ways for professionals to ensure that they are becoming more culturally competent to work with CLD families was not suggested.

### **3. Summary of the Literature**

The literature thus far has stressed the importance of building trust and collaborative relationships between professionals and CLD families. It is important to note that these are skills that continue to develop over time but are also skills that professionals may not realize they lack themselves. While honesty, respect, an awareness of personal bias, and understanding of the CLD families with whom one works are suggested, literature is needed on how to adapt one's practices and beliefs when working with families. For example, working with Latino families does not suggest that they will all share common languages, SES, or cultural beliefs. As a result, considerations of specific strategies should be emphasized when working with families that have different backgrounds from one's own, which also include factors, such as SES level and access to resources within the community.

## CHAPTER III

### METHODOLOGY

#### A. Research Approaches

##### 1. Qualitative Design

Qualitative methods are described as inductive research approaches that allow the researcher to explore and attempt to understand how individuals or groups of people respond, react, or interpret a social or human problem (Creswell, 2014). This interpretive approach examines the relationships, settings, situations, and systems of people so as to investigate the relationships and meanings behind interactions in order to develop new concepts, clarify a concept, and develop a theory (Peshkin, 1993). In using this approach, knowledge is socially constructed, and within the research, the perceptions of reality may change; however, the researcher's goal is to understand the meaning of the social constructs (Mertens, 2015). Realities are different for each person under different conditions as the phenomena are interdependent, subjective, and complex (Duchan, 2014). This approach has allowed me to explore the relationship of Latina mothers' experiences and perspectives when receiving language intervention in their homes. This investigation uses a case study design with an interpretative framework, in which researchers view the world as socially constructed, and the researcher uses both quantitative and qualitative methods to analyze the data (Duchan, 2014).

While a strength in using a qualitative approach is the researcher's engagement with his or her participants to gather data and to understand his or her beliefs or views (Bredo & Feinberg, 1982), researcher bias, experience, or history cannot be ruled out when interpreting a phenomenon; therefore, reliability and validity can be difficult to achieve (Bredo, 2006). However, this method provides the researcher with a rich and detailed description of a

phenomenon (Damico & Simmons-Mackie, 2003). The process involves collecting data from the participants' settings and analyzing data into themes, with the researcher making interpretations of the data (Creswell, 2013). An advantage of this method is that the researcher is a key component in data collection and the data descriptions are carefully selected and designed to focus on the participants' perspectives (Keegan, 2012).

The researcher investigated whether the quantity and quality of Mexican immigrant mothers' language would increase following a home-based language-based intervention using routines and materials within the home. In doing so, possible changes in the expressive language skills of the mother were analyzed. Additionally, the mothers' perspectives of the experience before and after completing the intervention were also examined. This is based on the responses that the mothers provided when they were interviewed about their personal experiences of how they use language, and if those experiences changed after the mothers were provided with direct language interventions within the home. Qualitative methods would be best to do this, as this study uses both systematic and interpretive practices in order to have a better understanding of how social experiences have been created and of the experiences of mothers and their children within a naturalistic setting (Keegan, 2012).

## **2. Case Study Methodology**

A case study design was used in order to have a deeper understanding of the language skills that caregivers and children use within their homes. A case study is defined as the study of people, places, or things and can provide valuable insight into a phenomenon, such as an in-depth understanding of an issue (Duchan, 2014). The participants were purposefully selected, and the data collected included observations, interviews, audio recordings, a review of documents (Hammer, 2011), and conversational analysis (Keegan, 2012). The use of case studies

has a complicated history within the field of communication disorders given that the studies are criticized for being less rigorous and not as well controlled as other research designs (Duchan, 2014; Yin, 2009). Additional critiques of using a case design is the generalization of the cases, as well as experimenter bias and the researcher's preconceived ideas (Creswell, 2014; Duchan, 2014; Keegan, 2012).

In a typical case study design, the researcher investigates a phenomenon within a real-life context (Tetnowski, 2015), and there is an in-depth examination of a specific case or participant using a variety of data collection procedures (Yin, 2009), such as a case description and case-based themes (Creswell, Hanson, Clark, & Morales, 2007). A case study design can utilize a control or manipulation of either the direct or the indirect variables (Unicomb, Colyvas, Harrison, & Hewat, 2015). However, with a lack of a control of a variable, the changes that might occur cannot rule out being affected by confounding variables; therefore, a true cause and effect of the intervention cannot be deduced (Unicomb et al., 2015). A case study explores an issue through one or more cases in a "bounded system," and the type of case study depends on the size of the bounded cases (e.g. the number of participants) (Creswell et al., 2007). The three types of case studies are single instrumental case study, collective or multiple case study, and an intrinsic case study. In a single instrumental case study, the focus is on a single issue or concern, and the research is based on a single bounded case (Creswell et al., 2007). In a collective or multiple case study, there is a focus on a single issue, but multiple cases are used to demonstrate different perspectives, while in an intrinsic study the focus is on a unique situation (Creswell et al., 2007). Based on these descriptions, the current investigation can best be described as a multiple case study, as it is bounded by participants and place.

In this case study, interviews, observations, documentary analysis, and conversational analysis were utilized. In using observations, the researcher captured the participants' behaviors (Draper & Swift, 2010), and this allowed for the researcher to observe and document the changes of their participant over time, typically at two different points of time, such as at the start and end of the treatment (Unicomb et al., 2015). In reporting observations, the researcher captured what the participants were doing rather than on what they were saying (Draper & Swift, 2010). The use of observations also allowed for the identification of issues of which neither the researcher nor participant were aware (Endacott, 2008). In addition to observations, field notes documented extraneous behaviors following the interviews and interventions. Field notes allowed the researcher to comment on first impressions and note nonverbal cues and behaviors to help with research analysis when interpreting data (Sutton & Austin, 2015).

Documentary analysis allows data to be analyzed or examined on how the issue was framed (Draper & Swift, 2010). The purpose of the documentary analysis was to add complementary data and factors, such as the context and the purpose of the documentation (Endacott, 2008). An additional data collection method used was conversational analysis. Conversational analysis allowed the researcher to analyze a transcribed conversation (Keegan, 2012) and was used during naturally occurring conversations (Wilkinson, 2014). In using conversational analysis, the verbal interactions focused on the participant's own behavior and their responses to those behaviors instead of the researcher's analysis of those behaviors (Wilkinson, 2014).

### **3. Participant Observer Research**

The role of practitioner as researcher is unique. Essentially, there are three roles that a practitioner has. One is that of the 'professional researcher' for which the scholar has a clear



understanding of the theories and research skills but examines problems within their field by collecting and analyzing data (Barnett & Muth, 2008). A second group includes scholars who are former specialists in the field and address best practices in the field (Kennedy-Lewis, 2012). A third group are former specialists in their field (e.g. educators) who train to become researchers and learn to navigate the divide between research and practice (Labaree, 2003). Given these three situations, this research study falls under the third group, as the study examines the perspectives of a practicing speech language pathologist completing research with a Latina mother using a language-based intervention. In addition, the mother's perceptions of the language intervention that the therapist provided will be explored. While a benefit to this research approach is that the scholar is able to collect and analyze data to solve problems present within the field (Barnett & Muth, 2008), three conflicts could arise. The main conflict is subjectivity. For me, that is similar to a garment that cannot be removed and will be present with me in both my professional and research roles (Peshkin, 1988; 2001). For example, I must consider my professional role as a practicing bilingual speech language pathologist, and my own personal assumptions while working with urban Latino families (Kennedy-Lewis, 2012). A second conflict is that, as the speech language pathologist, I also have an active part in this study, which includes interviewing the mothers, designing and providing the interventions, and analyzing the data. My biases about the positive changes I would expect to see in the mother's expressive language skills and her willingness to provide feedback regarding the intervention could have an impact on the findings and data analysis. A third area of conflict is the nature of work of a speech-language pathologist. The focus on speech therapy when working with a client is on addressing a behavior, providing therapy in order to remediate the communication disorder, and documenting the change of progress that the client makes in order to alter the way that the person communicates. This focus

and ultimate goal of changing a person's communication behavior could have a direct impact on the research questions, the data that will be collected, as well as the expectations and assumptions that the mother may make during the intervention time period.

In order to address possible impacts of practitioner-observer-researcher bias, data triangulation, member checks, and memos were utilized. Data triangulation and member checking increase validity (Creswell & Miller, 2000). The former is used when different sources of data or participant perspectives are converged in order to justify themes (Creswell, 2014). Member checks determine the accuracy of the themes of descriptions by the participants in order to allow them to determine if the findings are accurate (Creswell, 2014). In order to complete the member checks, the participants read over their transcribed interviews in Spanish in order to ensure that they agree on the transcription and the researcher's interpretation of their responses. The mothers were also provided with the themes that emerged from the coding of the interviews in order to determine if they agree with these interpretations. Additionally, memos and personal journals documented activities in which the mother and child engaged during the weekly interventions, which assisted with attending to the details and questions of the mothers in the study (Darawsheh, 2014). Memos have a direct impact on the researcher's subjectivity, specifically on data analyzation and findings (Fook, 2007). Finally, a graduate student coded the data related to the language checklist in order to make comparisons and contrasts with the researcher. The student completed the final interview and performed fidelity checks of the intervention. The goal in using these four strategies was to increase the credibility and reliability of the study.

## **B. Program Description and Participants**

### **1. Criteria for Participant Selection**

The pool of participants included Spanish-speaking children of Mexican descent and their Mexican immigrant mothers who resided within a large metropolitan area. The primary caregiver was identified as the mother who resided with, cared for, and interacted with the child. In addition, the mothers were the children's main caregiver during the time of the intervention implementation. The mothers were of Mexican descent and had immigrated to the US. Mothers also identified the primary language spoken in the home, and that of the mother and child, as Spanish.

The children all met eligibility criteria, indicating that they were between three years and four years and 11 months of age, were eligible to be placed or enrolled in a preschool program, and to receive speech and language services to address receptive or expressive language delays and/or special education services in their schools as indicated in their IEP. The children had qualified for special education services at their school prior to starting the study. Only children with a diagnosis of a developmental delay and/or a speech and language delay, as identified by their IEP plan, were considered as participants. The children presented with an expressive language delay and were eligible to receive speech and language services by an SLP under an IEP to address language delays; they also demonstrated difficulty with formulating phrases and sentences, deficits in vocabulary skills, or with answering questions. The children were verbal, communicated using words or phrases, were eligible to be placed into a blended or general education setting in their preschool setting, and did not have a diagnosis of a hearing or visual impairment, autism, or cognitive impairment. The children were Spanish dominant, however, could attend a bilingual pre-k program.

## **2. Data Collection Sources**

### **a. Recruitment**

Prior to recruitment, university Institutional Review Board (IRB) approval was obtained (see Appendix A). Mother and children dyads were recruited by distributing flyers to 27 different family service sites in a large Midwestern metropolitan city. The flyers were provided to the sites that assisted Latino/a families, and they posted the information for parents. In addition, the researcher volunteered to host a 15-minute recruitment event at each site to talk to the families about the purpose of the study and to answer any questions the families may have had. People at two sites asked for a recruitment meeting. Emails were sent to 46 professionals in the researcher's own professional network informing them of the purpose of the study and asking them to distribute a recruitment letter to others in their network or to families they knew who may be interested (see Appendix B).

Over the time period of four months, a total of 15 individuals contacted the researcher. The political state of local and federal policies cannot be disregarded when considering recruitment efforts by the researcher. At the time of recruitment, sites were hesitant to post flyers, as they were concerned about the safety of the families and the role of the researcher in reporting undocumented families. In addition, several professional contacts reported that they knew of families who were interested in the study; however, the risk was too great for being deported back to Mexico. As a result, this possibly had an impact on the amount of mothers enrolling. In total, four mothers and their children met criteria and began the study, but only three mothers completed the study. Positive repertoire was established with the mothers at the start of the intervention through consideration of their space and needs. For the fourth mother,

scheduling the intervention sessions was difficult, and the mother cancelled sessions three times. After the second intervention session, she withdrew from the study due to personal reasons.

### 3. Participants

#### a. Mothers

Participants for this study included three mothers and their children (two boys; one girl). Dyad demographics are described in Table VII. Throughout the study, the mother and child were provided with pseudonyms. All three mothers identified as immigrants from Mexico. While all three mothers indicated that Spanish was the main language spoken in the home, Anna was bilingual and would sometimes alternated between English and Spanish during the intervention. While all three children mainly communicated in Spanish during the intervention, they were bilingual, and would sometimes use English and Spanish interchangeably throughout the intervention.

**Table VII**  
*Characteristics of Mothers and Children*

Mother	Child	Child's Age	Special Education Support	Special Education Setting	Mother's Employment	Mother's Education Level
Belem	Jairo	4	Speech/language	General education	Stay at home	High school
Anna	José	3	Speech/language	Walk-in services	Cashier	High school
Celia	Juliana	3	Speech/language	General education	Stay at home	High school

#### **4. Instruments**

##### **a. Researcher as Instrument**

Reflexivity is an important practice when completing research. It situates the researcher on how one's background, which includes race, language, educational background, and gender, could influence the research questions and processes, as well as data interpretation (Berger, 2015). There are four kinds of reflexivity. Personal reflexivity is defined as when a researcher considers their own identity and how they relate to the participants, while emotional reflexivity considers how a researcher responds to their participants (Medved & Turner, 2011). In addition, there is historic reflexivity, for which the researcher is aware of how the research aligns or departs from historic research in order to conceptualize findings, and embodied reflexivity, is when the researcher and participants make sense through actions or body language (Medved & Turner, 2011).

During this study, it was important to reflect on my personal background and the possible impacts on this investigation. I identify as a bilingual (English/Spanish) first-generation Mexican-American Latina. Spanish was my first language until I started school at the age of four. It was at that time that my parents were told that they needed to teach me English and to stop communicating with me in Spanish. As a result, I slowly started losing my Spanish, and currently identify as a heritage speaker of Spanish. While I believe I am fluent in reading and in conversational Spanish, my English speaking, writing, and vocabulary skills are stronger than in Spanish. As a result, my ability to communicate fluently with native Spanish speakers has been an area of weakness that I have always felt the need to justify with native Spanish speakers.

It is also important to reveal that I am an SLP who has been working within the public-school system for the past 11 years and primarily with immigrant Latino families and their

preschool aged children. While the majority of the children that I work with have aged out of early intervention services, I often work with families interested in working with their children at home. As a clinician who works in public schools and with families who often feel that they are disadvantaged when receiving appropriate special education services for their children, I am aware of the pedagogical and developmental needs that are often required of children as they age out of the EI system and transition to preschool settings. In addition, as a mother of three bilingual (Spanish/English) young children, I am aware of many of the challenges that parents face when raising bilingual children and in addressing the social and academic needs of their child. Finally, as a mother who has navigated the public-school system for my own children and for the families with whom I have worked, I understand the frustration and anger that many parents experience when finding an appropriate educational placement or services for their children.

I have worked in a large urban setting with several Latino communities that have varied in socio-economic status and over the years have become aware of my biases toward these differences. My childhood could be described as middle class; however, as I was growing up, I had the assumption that success in life was a result of working hard. When I started working within the public-school system, I often found myself advising parents to learn English to help their children get ahead, as well as to make their child's education a top priority so that they would be college educated and successful. I am aware of the flaws in this thinking, and I have committed to working with families to advocate for the success of their children. This has included encouraging parents to continue to build upon their native language skills and encouraging families to focus on the entire child and the child's strengths instead of the child's weaknesses. I also encourage these families to use home-based materials and routines to develop

vocabulary and language skills instead of suggesting additional toys or electronics and have discontinued the use of unsolicited advice, such as enrolling the child in enrichment activities.

#### **b. Data Sources**

A description of each instrument is included that was used with each dyad. Refer to Appendix L for a figure that provides the data collection sources that were used in this study in order to answer each of the research questions.

#### **c. Pre- and Post-Language Assessment**

The pre- and post-language assessments were conducted within the families' homes using play routines and toys supplied by the researcher. The collection of the pre- and post-language assessment occurred at the start and end of the intervention and were each ten minutes long. The mothers were prompted to play with their children as they usually would using either the researcher's or children's toys. The researcher supplied the materials for the assessments, which included farm animals, miniature dolls, toy cars, animal puzzles, crayons, and coloring books. The objects often differed from the activities and toys used in the intervention sessions, and these differences may have resulted in different language opportunities.

#### **d. Interviews**

Interviews are a method of collecting the insights, opinions, experiences, or attitudes of the participants. When using interviews, the relationship between the interviewer and the researcher cannot be discounted (Knox & Burkard, 2009), as the researcher must be an active listener and notetaker, as well as plan, given that interviews require extensive background knowledge in order to ask appropriate follow-up questions (Qu & Dumay, 2011). The mothers were interviewed in two separate sessions at the start of the intervention to have a better



understanding of the language needs of the child and of the mothers' perceptions and an understanding of home-based language interventions.

### **1) Family Values and Activities Interview**

Each mother participated in an ethnographic interview at the start of the study (n=3). All interviews were audio recorded and transcribed by the researcher and lasted an average of 26:41 minutes (range 25:14-28:53). Each interview was completed within the home and was arranged at a time that was convenient for the mother.

This ethnographic interview (see Appendix E) was a comprehensive open-ended interview protocol that sought to have a deeper understanding of the family's routine, concerns, and goals regarding their child's speech and language services. There were nine questions with probes. The questions attempted to gain a better understanding of the family, the family's cultural beliefs, and the child's developmental history. Additional questions asked about the family support system, typical family activities, and the family goals for the child. The interview protocol was translated from English to Spanish by the researcher.

### **e. Language Perception Interviews**

Each mother participated in two separate perception interviews at the start and at the end of the intervention. They were constructed by the researcher and examined the mother's experience in understanding how to use language interventions during routines. Each interview was developed based on the review of the literature focused on using language-based interventions in naturalistic routines (Francois, Coufal, & Subramanian, 2015; Peña & Fiestas, 2009). Questions were revised based on feedback from university faculty and three other graduate students not involved directly with this study.

### **1) Initial Language Perception Interview**

Each mother participated in the initial interview (n=3) in a single session in Spanish. The interviews were audio recorded, administered, and transcribed by the researcher and lasted an average of 28.53 minutes (range 25:09-34:40). The interview (see Appendix G) consisted of 14 questions in three different areas. The first area was about the activities that the family enjoyed doing together. The second was about the dyad's experiences in EI, and the last area was the mother's experiences in using home-based activities with routines and materials accessible at home. Demographic questions were asked in order to have a better understanding of the family's socioeconomic and language status.

### **2) Final Language Perception Interview**

Each mother (n=3) participated in the final interview at the end of the study in Spanish in their home. The interviews were administered and audio recorded by a graduate student associated with the study; however, this was the only contact that the mother had with the student throughout the intervention. Each interview was transcribed by the researcher and lasted an average of 16:31 minutes (range 12:54-22:12).

The final interview (see Appendix H) consisted of 13 questions in two different areas. One area was about the mother's perceptions of the language-based activities using routines and materials accessible at home following the intervention. The second area was the carryover of activities in the future. In addition, a question from the first interview regarding the mothers' perceived areas of strengths and weaknesses of their skills was repeated to document the mother's change in her perspectives.

**f. Child Demographics and Educational Supports Form**

At the completion of the initial language perception interview, mothers were asked to share their child's IEP paperwork with the researcher. The researcher used the child demographics and educational supports form to include details and demographics on the child. For the purpose of this study, ten variables were collected, (see Appendix I). Variables included: (a) the date the IEP was completed, (b) how long the child received services, (c) the type of special education support, (d) the type of classroom recommended, (e) the speech and language assessments used, (f) the scores on the speech and language assessments, (g) the child's strengths on the language assessment, (h) the areas of need based on the language assessment, and (i) the child's language goals. Each mother provided her child's IEP, and once the data was obtained, all paperwork was returned.

**g. Language Event Checklist**

Each session was tape-recorded and a trained graduate student watched the video and utilized a checklist (see Appendix J) in order to indicate if and when specific language events occurred, such as the mother's use of praise during the assessments and intervention sessions. Prior to the start of the study, a graduate student with experience working with young children was hired as an assistant to work on this project. The student had completed university IRB training, was a current student attending the university, identified as bilingual (English/Spanish), and had experience working with families who spoke Spanish.

The mother's behaviors that were reported throughout the session: (a) praise, (b) asking the child questions, (c) offering the child verbal choices, (d) use of open-ended questions, (e) modeling of expanded sentences, (f) use of the teaching of a new vocabulary word, (g) expansion of the child's language, (h) number of turn-taking during a session, and (i) verbal interactions

between the mother and child (see Table VIII). This modified checklist is based on a multiple based design across caregivers and participants study by Woods and colleagues (2004) that examined the effects of instructing caregivers to implement teaching strategies within a daily routine. The caregiver teaching strategies observed during the play-based routines considered both the caregiver's verbal and nonverbal behaviors and were coded using strategies that were documented within naturalistic language interventions (Hefting & Goldstein, 1996).

The trained graduate student completed the checklist on all the sessions, and a second trained graduate student negotiated reliability to achieve 100% in three randomized sessions per dyad. Reliability was calculated to be 96.7% for all sessions.

#### **h. Field Notes**

Field notes were used to document the activities and language skills that the mother used during the last ten minutes of the intervention sessions and to document the weekly language activities that the mother planned. The field notes included a record of the events that occurred during the session, the activities in which the dyads engaged, and any other pertinent information, such as nonverbal communication exchanges. Following the intervention, the researcher recorded notes regarding other events that occurred during the session, such as how mother responded to her child prior to starting the intervention. The combination of the observations and field notes assisted with first impressions, observations, and emotions assisted with developing a complementary analysis of the data (Tessier, 2012).

**Table VIII**  
*Language Behaviors*

Behavior	Definition
<b>Praise</b>	Mother praised child using descriptive (e.g., wow you remembered how to use the spoon!) and evaluative (good job) comments
<b>Asking Child Questions</b>	Child asked yes/no questions
<b>Offering Child Verbal Choices</b>	Child asked to pick between 2+ objects/things (e.g., do you want candy or gum?)
<b>Use of Open-Ended Questions</b>	Asked child wh- questions
<b>Modeling of Expanded Sentences</b>	Mother modeled what she or the child was doing (e.g., both are playing dolls: child is feeding the baby and mom says—you are feeding the baby)
<b>Use or Teaching of a New Word</b>	Mother taught child a new word
<b>Expansion of the Child's Language</b>	Mother imitated child and added more words using a more mature sentence
<b>Comment</b>	Mother made comments or gave child directives
<b>Imitate</b>	Mother imitated child
<b>Label</b>	Mother labeled objects in the environment but did not repeat to child
<b>Number of Verbal Turn-Taking During Session</b>	Mother and child talked separately based on back and forth conversation
<b>Number of Verbal Interactions</b>	Number of times mother talked to child

**i. Researcher Fidelity Checklist**

Each dyad had four randomized sessions used for procedural fidelity (see Appendix F) completed. A trained graduate student used the checklist by viewing randomized videos to provide feedback regarding fidelity. The graduate student was trained in completing the language event and fidelity checklists. Sample videos were viewed by both the student and researcher in

order to establish inter-reliability in both the language events and fidelity. The student watched sample videos of the intervention sessions that demonstrated specific examples of the language tasks that could occur during the intervention. A second graduate student was trained to complete reliability of the language checklists.

The purpose of using the checklist was to ensure that the fidelity of the intervention was being implemented according to the research protocol (Kelechi, 2005). In order to calculate procedural fidelity, the number of times the researcher performed the step was divided by the total number of opportunities needed to perform the steps, and the total was multiplied by 100 to calculate the percentage of the amount of times the procedure was done correctly (Ledford & Gast, 2014). The researcher completed the intervention correctly 95% of the time. Overall, procedural fidelity was good across all families.

## **5. Procedures**

### **a. Setting of Intervention**

The study took place within the dyads' homes in a large metropolitan city. The dyads' homes were selected as the setting in order to provide a naturalistic and authentic setting using materials and routines that were already familiar to the mother and children. All sessions took place in the home directly with the mother and child present, at times additional family members, for example, siblings or fathers, were in the home during the intervention. Each session was scheduled at times convenient to the mothers and typically lasted between 30-35 minutes. Most intervention sessions were scheduled in the morning but were based on the mothers' needs and accommodated work and school schedules. All the mothers preferred to work in the living room, with two mothers also selecting the kitchen as the setting for an individual session. Throughout each session, each dyad selected between familiar toys, objects, and routines in order to

implement the teaching strategies. For example, in one session, the dyad chose to paint and in the second session, to play with the child's favorite toy. Chart I provides an overview of the instruments and procedures used in the study.

**Chart I**  
*Overview of Instruments and Procedures*

Instrument	When Used	Overview of Procedure
Family values and activities interview	First meeting	Mother and researcher
Initial language perception interview	Second meeting	Mother and researcher
Informal play-based session	Following initial interviews and prior to the language-based interventions	Researcher, mother, and child
Pre-language assessment	Following informal play-based session	Mother and child
Language based intervention	Following the informal play-based session	Eight intervention sessions provided by the researcher and mother and child play
Language event checklist	Completed following each intervention session	Checklist completed following each session by graduate student
Post-language assessment	Following eight intervention sessions	Mother and child
Final language perception interview	After final session	Mother and graduate student
Field notes	Document activities, events, and important details from session	Researcher notes

**b. Informal Play-Based Session**

A single informal 30-minute play-based session occurred with each dyad prior to the intervention. The purpose of the session was to develop a positive repertoire between the dyad and the researcher. During this session, the protocol that was followed during the language-based interventions was loosely followed; however, the focus was on the researcher, mother, and child and their engagement during structured activities, such as putting a puzzle together. The mother was given the option to use toys from their home or for the researcher to provide the toys. During

this session, data was not obtained, and the mother's concerns, questions, and comments were addressed.

**c. Initial and Final Play-Based Language Assessments**

The initial play-based language assessments occurred following the two interviews and informal play-based session, but before the start of the language-based intervention sessions. The final play-based language assessment occurred at the end of the eight language-based intervention sessions but before the final interview. During the assessment, age appropriate toys were brought into the home (Heilmann, Nockerts, & Miller, 2010; Kaiser & Roberts, 2013a). The toys included toy cars, dolls, Spanish books, animal blocks, a coloring book, crayons and colored pencils, and a go-fish game. The session was audio and video recorded by the researcher. Ten variables were analyzed (see Chart II) using the Systematic Analysis of Language Transcripts (SALT) program.

**d. Language-Based Intervention**

Each dyad participated in eight language-based intervention sessions. Each session was about 35 minutes and was planned around the caregiver's goals for their child as expressed in the Family Values and Activities and occurred using familiar routines, tasks, and toys. During the language intervention sessions, language samples from the dyad were both video and audio recorded during a ten-minute interaction. Two dyads, Belem and Celia, had the intervention sessions two times a week and completed the intervention over a course of four weeks, and Anna completed the intervention over the course of 8 weeks. In addition, field notes were recorded on the activities and tasks with which the dyad was engaged during the session.

The weekly language-based intervention was modeled from a study, by Woods and colleagues (2004), for which the researchers implemented teaching strategies using social



communication strategies during daily routines with a multiple baseline design across caregiver strategies and participants. The following teaching strategies were coded during the study: descriptive praise, gestural and visual cues, modeling, imitation, presenting choices, expansion, open-ended questioning, and waiting.

The 35-minute language-based intervention sessions consisted of the following format: During the first 5 minutes, the researcher answered questions that the caregiver had from previous sessions or taught strategies. The intent was to continue to build rapport and continue to develop a trusting relationship (Kummerer, 2012). The goal was to increase the mother's confidence in carrying over the modeled strategies after the sessions.

For the next ten minutes, the researcher introduced the topic for the session and the caregiver and researcher thought of ways to meet the goal using home-based routines and materials. An example of a goal was to increase the child's ability to use 3-4-word phrases using scripted phrases, such as I want the \_\_\_\_ during a painting activity. The mother took the lead during this process with the researcher offering ideas or suggestions on ways to meet the predetermined language goal for the session. This way the mother was recognized as the primary intervention provider while working in a collaborative relationship to target their child's language needs (Rakap & Rakap, 2014). During the planning time, both the mother and researcher collaborated, and the information shared provided additional information for the field notes.

Following this collaboration, the activity was modeled by the researcher with the mother for 5 minutes. Ideas were suggested on ways to meet the language goal using scaffolding techniques and ideas. This was completed using strategies that were beneficial for the child, addressed the specific needs of the child, ensured that they were age appropriate, and addressed

**Chart II**  
*Language Measures Analyzed*

Language Measure	Description
Total Utterances	Independent clause (statement with both a subject and predicate) with its modifier, and is segmented into phonological units based on pause and intonation
All Words Including Mazes	Total number of completed words including speech revisions
Number of Different Words	Number of different word roots (does not include mazes)
Number of Total Words	Total number of words (does not include mazes)
Type Token Ration	Ratio of different words to total words (NDW/NTW)
MLU in Words	Ratio of the number of main body words to the number of utterances, each word counts as one word regardless of how many bound morphemes it may contain
MLU in Morphemes	Ratio of the number of main body morphemes (word roots + bound morphemes) to the number of utterances and only bound morphemes are included
Number of Statements	Total number of statements based on punctuation
Number of Questions	Total number of questions based on punctuation
Time	Elapsed time

the child's needs within their natural environment (Cable & Domsch, 2015). During this time, the mother practiced specific strategies with the researcher before using them with her child. A benefit of modeling techniques and teaching integrated language skills to the mothers considers the importance of collaboration efforts (Peredo, 2016).

For ten minutes, the mother and child participated in a language tasks using the materials or routines that had been practiced with the mother earlier in the session. In the final 5 minutes, feedback was provided to the mother regarding her use of the language strategies observed

during the ten-minute interaction between the dyad, the mother's questions were answered, and ideas for the following week's session were discussed. This allowed for the mother to process events that occurred during the intervention, as well as begin to plan for the following week. It also allowed for additional coaching approaches, such as providing praise, constructive feedback, and self-reflection, that will teach the mothers specific skills to benefit their child (Dunst & Trivette, 2009).

#### **e. Final Perception Interview**

The final interview was completed up to a week after the final intervention sessions. The mother participated in the semi-structured interview with a graduate student associated with the study. The student conducted the interview to allow the mother an opportunity to discuss her experiences in either a positive or a negative way without feeling pressured by the researcher's presence.

As an incentive for their participation and to thank the mothers for their time, each mother received three separate gift cards that totaled \$150 at the conclusion of the study. The first gift card was presented after the initial play-based assessment, a second one was distributed after the eighth session, and the final one was provided at the final interview.

### **6. Data Analysis**

Qualitative data were analyzed using a variety of steps to validate the accuracy of the information within the study. In the first stage of data analysis, organization of the data occurred. In order to better understand the data (a) interviews were transcribed, (b) typed observation field notes were reviewed and edited to prepare for analysis, and (c) language session data was organized by sessions. The interviews were transcribed by the researcher and checked for accuracy by a graduate student associated with the study. Field notes were sorted and arranged

based on the sources of the information (Creswell, 2014), and data that pertained to each dyad, such as checklists and fidelity, were individually organized.

In the second analysis step, the data were read through in order to reflect on the data's meaning (Creswell, 2014). In this stage, the assessment and intervention data were displayed using charts and ideas and organized so as to have a deeper understanding of the data and its meaning.

In the third analysis stage, data from the assessment and intervention were coded (Simmons-Mackie, 2014) by organizing and bracketing the data using words to represent a term or category (Corbin & Strauss, 2015). As themes were identified, interpretation of the data and findings occurred, which allowed for insight from the literature and to blend the categorical findings that explained the phenomenon (Simmons-Mackie, 2014).

#### **a. Language Perception Interviews**

Data from the interview transcripts were gathered and coded using qualitative methodology. The tapes were transcribed by the researcher and data were analyzed using a macro-analysis (Corbin & Strauss, 2015), an interpretive level of analysis that identified a specific theme or theory to interpret meanings within the data (Simmons-Mackie, 2014). These data were analyzed in order to have a deeper understanding of what the mother's perceptions were of using language-based strategies before and after participation in home-based language interventions.

Three flows of analysis were applied for summarizing the data from the interviews (Miles, Huberman, & Saldaña, 2014). In the first flow of the analysis, the data were independently summarized, and key themes were identified and labeled (Miles et al., 2014). In the second flow of data, identified themes were summarized, which included the summaries of

key topics. During this round, the graduate student identified key themes to ensure intercoder and negotiations took place. In the third flow of analysis, conclusions were drawn, and findings were verified (Creswell, 2014). Member checks of the preliminary analysis of the initial and final interviews were completed by the mothers. During this task, the mothers read over the transcribed interviews to ensure they agreed with the researcher's transcriptions. They also read over the themes to determine if they agreed with the researcher's interpretations of the data and conclusions (Creswell, 2013).

#### **b. Pre- and Post-Language Assessments**

The pre- and post-interview sessions were transcribed by the researcher and a total language analysis was completed through the SALT program (n=8). Refer to Chart II for a definition of terms used.

#### **c. Cross-Case Analysis**

Following the individual case analysis, a comparative analysis was completed across the three cases. The purpose was to enhance generalizability beyond the single case and to deepen an understanding through the similarities and differences between cases (Miles et al., 2014). First, a concept map was completed in order to organize and analyze themes from each study so as to have a deeper understanding about each mother's experiences (Simmons, 2009). The purpose in completing this task was to look at each case study individually and apply findings to the research questions (Stake, 2006). Secondly, each research question was written using a simple matrix and themes in a table that included the mother's quotes, and the examples were linked with each other, which was used to identify common themes within the data (Stake, 2006). Identifying and mapping these patterns across the cases helped to further understand the mothers' experience within the language intervention (Simmons, 2009). In addition, the use of a

matrix organized the data so that it can be reflected upon, verified, and conclusions can be drawn (Miles et al., 2014).

### **C. Establishing Trustworthiness and Credibility**

In order to develop trustworthiness in qualitative studies, Guba and Lincoln (1994) described five criteria: credibility, dependability, confirmability, transferability, and authenticity. These five criteria will be described in more detail, and their impacts on the investigation will be explored.

#### **1. Credibility**

Credibility is defined as the “trustworthiness, verisimilitude, and plausibility of the research findings” and can also be defined as research that others find trustworthy (Tracy, 2010). In order to ensure credibility within a study, the researcher should report on engagement and the methods of observation (Cope, 2014). To demonstrate credibility in this investigation, triangulation was used. Methods triangulation is defined as the use of multiple methods of data collection, methods, and researchers (Tracy, 2010), and often includes the use of field notes, interviews, and observations (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014). This study will address credibility by the use of various data collection methods, which included field notes to document the events that occurred during the mother/child interventions. In addition, three interviews were completed during the investigation. The purpose of the initial interview was to have a deeper understanding of the family and on the ways that the families use language during routines. Two additional interviews explored the mothers’ understanding of language use during home-based routines before and after the interventions were provided.

Member checks were also completed to ensure credibility. These checks are completed when the researcher follows up with the participants in the study to verify that the data reflect a

participant's intended meaning (Miles et al., 2014; Patton, 2002). Member checks are necessary to ensure that researchers are not influencing the findings based on their own assumptions, biases, or life experiences (Kornbluh, 2015). These occurred after the data analysis to ensure that the data was reflective of the mothers' interpretation of the questions and information. The mothers were provided with a written copy of the transcriptions and themes (Kornbluh, 2015).

## **2. Dependability**

Dependability within a study occurs if another researcher agrees with the decisions made throughout the research process (Cope, 2014). To ensure dependability, the researcher and another graduate student not affiliated with the study identified key themes to ensure intercoder reliability during the coding of the mother perspective interviews. In addition, the researcher worked with university faculty to ensure that the investigation followed the outlined procedures, and any changes from the original plan were documented.

## **3. Confirmability**

Confirmability occurs when the researcher is able to confirm how conclusions and interpretations were established and how the data support the findings (Cope, 2014). In order to ensure confirmability in the study, themes from the interviews were identified and the data were kept in separate folders. In addition, the data findings were discussed with the graduate student associated with the study to determine if findings and conclusions were credible.

## **4. Transferability**

Transferability within a qualitative study occurs when the study can be applied to others not involved within the study, and the findings can be relatable to others (Cope, 2014), which in turn can motivate a research agenda. Transferability can be achieved when there are rich

descriptions, direct quotes from the participants, and the research is presented in an uncomplicated and straightforward manner (Tracy, 2010). In order to achieve transferability, the researcher worked with a specific population, immigrant Mexican mothers, a population with whom other immigrant families can also relate. In addition, following the interviews, the mothers were asked to participate in member checks. These additional procedures built upon the dense description and engagement of the participants in order to increase their overall voice and perspective in the study.

### **5. Authenticity**

Authenticity occurs when the readers of the study understand the researcher's experiences when reading about their experiences (Cope, 2014). Authenticity within this study was addressed through the selection of the participants, which included a population with whom individuals could relate, which included mothers, Latinas, immigrants, mothers with children who have language delays, and mothers who had received EI services. In addition, the reader could relate to the findings if they are a service provider who had worked with CLD families with children receiving special education services.



## CHAPTER IV

### RESULTS

#### A. Case Studies

Three case studies were conducted so as to have a deeper understanding of each mother's experience in language intervention using home-based routines and materials. The experiences of each mother—Belem, Anna, and Celia—are described. Each case study description is organized around findings related to the (a) language sessions, (b) mother language analysis, and (c) mother's perception of the intervention. A cross-case analysis was completed for a deeper understanding of each mother's experience.

##### 1. Belem

###### a. Family Overview

Belem participated in the study with her four-year-old son, Jairo. She described him as a moody child but indicated that his personality was similar to hers. She also felt that he had a strong personality; however, she thought this was because he was an only child and was used to getting most of the attention at home. Three family members lived at home and include the dyad and her husband. Belem explained that she enjoys completing art activities with Jairo, playing in the family pool with him, and spending time with him. She stated that he also enjoyed playing by himself, specifically with his dinosaurs and toy animals in the water. Belem reported that she and her husband were the primary caretakers of Jairo, and she would consult with her sister, friends, or childcare professionals, such as EI providers, about childcare. There was a strong support system, as Belem explained that an educator would come to her home on a weekly basis to teach Jairo academic skills, such as how to count and colors. Belem expressed concerns about Jairo's expressive language skills, specifically, with his speech intelligibility. She noted that this may

impact her son's future. Since he has difficulty repeating himself and because he is difficult to understand, she felt that his interactions with others were limited. She also expressed concerns with his vocabulary skills, which she also felt were limited.

Belem explained that her belief in parenting was to have patience. She said, “La idea es que tenemos que educarlos muy bien y tener paciencia más que nada porque es muy difícil crianza de los niños” [The idea is that we need to educate them and have patience more than anything because raising children is difficult]. Although she felt that children should be allowed to be children, she did believe in establishing rules and routines at home and in the community. She felt that Jairo needed to respect and take care of his things, respect people, and clean up after himself. She had established routines at home, such as taking naps, taking a bath after school, having a set time for lunch and dinner, and trying foods that were served to him. She indicated that, as a parent, one of her strengths was patience: “Paciencia y entenderlo porque a veces él me quiere hablar algo y no lo entiendo y se frustrar y no sabe cómo explicármelo y se enoja” [Patience and to understand him because sometimes he wants to talk to me and I do not understand him and he will be frustrated and he does not know how to explain it to me and he gets upset].

Belem reported that Jairo received developmental therapy beginning when he was two years old for a year, and both SLP and occupational therapy (OT) for six months. During typical speech and language sessions, she reported that Jairo repeated words and that the SLP would bring in toys: “Le sacaban el juego de papa, que repita las palabras, que era esto y era juego más que nada que repita las palabras más que nada” [She would take out the Potato Head, so that he would repeat the words, it was this, more play than anything so that he would repeat the words more than anything]. During most sessions, she observed and helped with behavior during the

sessions, specifically by intervening if Jairo would throw a tantrum, but otherwise was not involved. She said, “Sí pues, decían, hicimos esto...puedes hacer lo mismo o con diferentes cosas...me decían juega con el de esta forma, pero en involucrar mucho en ello, no” [Yes, well, they would say, we did this...you can do the same or with different things...they would tell me to play with him this way but to involve myself with them, no].

Mom reported she appreciated that, during EI services, she developed ideas on how to play with her son; for example, she learned she should speak to him slowly and loudly so that he could see her mouth move. However, she was told that he did not make progress so she needed to search for additional services:

Pues si ellas ya casi para acabar me dijeron que no vieron mucho avancé las de speech y que ellas han hecho su trabajo y que no le han visto mucho el avancé y pues me recomendaron que buscara más terapia afuera de eso. [Well near the end they told me that they did not see a lot of improvement (the SLP) and that they had done their job and had not seen much improvement and well they recommended that I look for more therapy outside of that.]

Belem reported that Jairo had qualified for services through the public schools and, overall, felt their interactions had been positive and that the services were going to be more helpful because they were not focused on play and instead were drill-like in nature.

#### **b. Environment**

Each dyad resided within their homes and with their family throughout the duration of the study. When asked to describe the type of neighborhood in which they lived within the urban setting, they each described the racial characteristics. A brief description of the family home and layout of the room in which the intervention took place is included for each case.

Belem reported that many of her neighbors could be described as Polish and Latino. Her home could be characterized as a multi-unit building, with their unit on the first floor. The majority of the sessions occurred in the main living room, which was the main room that one first walked into upon entering the front door. Jairo's favorite toys and books were readily available in this room and were carefully curated and organized into separate boxes (e.g. dinosaurs, cars). Throughout the intervention, the room appeared to be organized, as there were no additional toys or objects out. In addition, there was a sectional sofa, rug, and television in the room; however, the television was never turned on. Both Belem and the researcher would sit on the floor or the sofa during the intervention. The only other room in which the intervention took place was in the family kitchen. Otherwise, the dyad used the living room to complete the intervention.

In addition, at the start of the intervention and at the end of each session, the mothers were reminded to think of a routine or set of materials that they wanted to bring in for the session in order to target the child's language goals. While each mother was aware of this, they were not consistent in bringing in ideas for each session. This description is also included for each participant.

### **c. Demographic and Educational Supports**

Jairo was evaluated using the Trans-disciplinary Play-based Assessment-2 (TPBA-2) when he was three by the public-school system. According to the speech and language report, he presented with age appropriate comprehension skills, moderate to severe expressive language delays, and phonological errors, which impacted speech intelligibility. His receptive language strengths were in his ability to identify objects and actions, objects by their function, body parts,

and colors. In addition, he could follow two-step directions, identified spatial concepts, and answered wh- questions.

Expressively, he had at least 30 words in his repertoire to label/request concepts, such as colors and body parts, claimed possession, answered yes/no questions, and used social language (e.g. says good-bye). He asked basic wh- questions, such as “What is that?” and used words more than gestures to communicate. His speech and language goals in his IEP addressed his ability to answer questions and to increase his overall vocabulary repertoire. In addition, his goals addressed his ability to produce multisyllabic words when answering questions and commenting. Based on the results of the initial speech and language evaluation, Jairo benefited from speech and language services that addressed significant delays in his speech intelligibility and expressive language skills; however, his goals did not directly address his needs in vocabulary skills.

Belem chose to use Jairo’s toys, as she indicated that he enjoyed playing dinosaurs, animals, and cars. As a result, the majority of the intervention sessions revolved around playing with toy dinosaurs. At each session, she would indicate that she enjoyed the activities that the researcher would suggest and did not independently come up with activities. Therefore, the activities that did not involve the dinosaurs were a book-reading activity and making quesadillas in the kitchen. While all of the toys were Jairo’s, toys from other sets were often used along with the substitution of non-toy items (e.g. pieces of paper to represent rocks).

#### **d. Language Sessions**

Over the course of the intervention, language skills were targeted. As each language skill was addressed on a weekly basis, they appeared to build upon each other as Belem carried over goals from one week to the next.

### **1) Description of Sessions**

Eight sessions were conducted within the home over a period of four weeks. Besides Belem and Jairo's presence at each session, the dad was present on one occasion. During that time, he would attempt to clarify Jairo's speech and correct his behavior. However, this did not appear to impact the way that the dyad interacted with each other.

The dyad participated in a variety of language-based tasks or routines that changed weekly (see Chart III). Although Belem expressed concerns about Jairo's unintelligible speech, speech intelligibility was not a focal goal in this research study; however, strategies to increase Jairo's expressive language skills were addressed.

The dyad participated in play-based tasks throughout the intervention, but Belem only planned one activity, which was making quesadillas. Otherwise, each session was mainly based around playing with Jairo's dinosaurs. Belem indicated that she enjoyed the activities that were being introduced by the researcher, but it was unclear if she was just not confident in her own ideas or if she preferred to have the activities suggested to her. Throughout the intervention, it was also noted that Belem would pause and think at the start of the session. She reported that she was thinking through each scenario, and this indicated that she was setting up the play in order to elicit specific responses from Jairo. She also reported that she was teaching her husband specific language strategies to use with Jairo when talking with him.

A few of Jairo's behaviors were worth noting. For example, Jairo would often repeat the dialogue and play scenarios that were modeled between the mom and researcher, even if Belem would try to encourage him to change specific factors (e.g. names) during the ten-minute play session. Another behavior was Jairo's resistance to structured activities. When mom utilized a drill-like technique (e.g. modeling syllables), Jairo would become upset and refuse to play;

therefore, the strategy was not used during the play session between the dyad. Depending on the activity, the use of each language strategy varied in each session (see Table IX). In one session Jairo was to repeat his mom modelling articles; however, he was resistant to this, but it only occurred once and was coded as “other” in session two. There was an increase in Belem’s use of open-ended questions, providing verbal choices, imitation, expansion of Jairo’s speech, and an increase in Jairo’s verbal turn-taking. There was only one behavior that did not appear to have growth, which was in the use of praise. The use of both evaluative and descriptive praise was introduced to mom; however, this was not a strategy that Belem appeared to be interested in using.

When examining Belem’s language behaviors, there were notable changes that occurred during each session, especially from the initial to the final sessions of the intervention (see Table X); however, there were some consistent behaviors noted throughout the intervention. Consistent behaviors that Belem used included: her use of offering verbal choices (e.g. “¿Entonces y los carros, donde los ponemos...arriba del estacionamiento o alli en la tierra donde viven los insectos?” [So then the cars, where should we put them...on top of the garage or there in the dirt where the insects live?]); commenting (e.g. “Entonces que el senor maneje, pero primero pon los animals adelante del autobus” [Then let the man drive, but first put the animals in front of the bus]); asking open-ended questions (e.g. “¿Quienes van afuera?” [Who is going outside?]); teaching new words (e.g. prepositions); in imitating (e.g. Jairo: “Em blue” Belem: “Blue”); and in labeling (e.g. mom labeled “goat”).

Areas of growth for Belem were in her use of asking yes/no questions (e.g. “¿Ellos vuelan, verdad?” [They fly, right?]), modeling expanded sentences (e.g. Jairo: “Cabra tiene picos

[Goat has beaks], Belem: “La cabra tiene cuernos” [The goat has horns]), expanding Jairo’s language, and overall turn-taking of both her and Jairo’s language. An example of an exchange that demonstrated many of these strategies occurred while making quesadillas:

Belem: “Mejor con este, mira, esta es para hacer quesadillas.” [Better with this one, look, it’s to make quesadillas.] (mom takes out spatula)

Jairo: “Esa se hace asi.” [You do it like this.] (child stirs the spoon in the air)

Belem: “Esa es para hacer el atole, para meñear, para agua de limón.” [That is to make atole, to stir, for lemonade.]

Jairo: “¡Sí, sí!” [Yes, yes!]

Belem: “¿Entonces que más hace falta? Tenemos el queso, las tortillas están listas, ahora, ¿En que los vamos a hacer?” [What else do we need? We have the cheese, the tortillas are ready, now, what are we going to make them in?]

Jairo: “Como ese.” [Like that.] (points to stove).

Belem: “¿Este que es? ¿Cómo se llama este?” [What is that, what is it called?]

Jairo: “Pa’ cocinar.” [To cook.]

Belem: “¿Para cocinar?” “Se llama estufa.” [To cook? It’s called a stove.]

Jairo: “A-stufa.” [Stove.]

Belem: “Estufa, ¡Ah ha!” [Stove, yes!]



**Chart III**  
*Description of Belem's Intervention Sessions*

<b>Sessi on</b>	<b>Goal of the Session</b>	<b>Language Strategies Modeled</b>	<b>Strategies Observed</b>	<b>Strategies Used at Home</b>
1	Increase vocabulary skills	Identified and labeled prepositions (e.g. inside, outside, on top of, under, and in front of) during structured play using sentences to describe location (e.g. it is under the box)	Pair played with the child's toy cars and box, mom had child identify prepositions during play (e.g. "Pon el carro debajo" [Put the car under the box]), had child label prepositions (e.g. "¿Dónde está el carro? Debajo de la caja" [Where is the box? Under the box]), and used simple sentences with verbal models (e.g. "Arriba del tractor grande" [On top of the big tractor])	
2	Modeling complete sentences with use of articles	Used articles (e.g. el, la) to label and describe animals (e.g. the elephant is big), used prepositions to label location and model sentences with the words counted out for him to repeat	Played with the child's dinosaurs, a box, and a dinosaur egg, pretending that it was a forest for the dinosaurs; Belem asked Jairo to describe the animals (e.g. "¿Qué tiene la girafa?" [What does the giraffe have?]) and modeled phrases and sentences using articles for the child to repeat by providing visual cues (e.g. "La jirafa tiene cola" [The giraffe has a tail])	Jairo identified prepositions, such as "De bajo de, pone en cema de, al lado de" [Underneath, on top of, and next to] but needed to be cued to use prepositions in phrases or sentences
3	Increase use of vocabulary	Used prepositions (e.g. to the right, put it in front) to formulate phrases and sentences, increased the child's response to include the use of articles when Jairo answered using one word (e.g. yes, I see the cow with spots),	Played with child's school bus and animals; mom had child identify prepositions through play (e.g. "Pon los animales delante del autobus" [Put the animals in front of the bus]), modeled when child answered in simple phrases (e.g.	Mom had child repeat sentences using articles and mom indicated that she cued for him to continue to increase his phrase and sentence length

Session	Goal of the Session	Language Strategies Modeled	Strategies Observed	Strategies Used at Home
		played “I spy” (e.g. I see an animal that has spots), and commented on what the child was doing (e.g. the bus is moving backwards)	child: “Cabra tiene picos” [goat has beaks] mom: “La cabra tiene cuernos” [the goat has horns]), asked “I spy” question (e.g. “¿Cual animal tiene cuernos?” [Which animal has horns?”), and commented on what the child did (e.g. “¿Sacaste los dinosaurios?” [Did you take out the dinosaurs?])	
4	Increase vocabulary and increase sentence length	Told a structured story during play using descriptors, prepositions, and sequences (e.g. first), used sentences (e.g. giving the characters voices), and embedded wh- questions (e.g. what did the dinosaur find in the forest?) during and after the play for Jairo to answer using sentences	Dyad played with the dinosaurs by giving the animals names, characteristics, and a plot (e.g. “¡Se le perdio el huevo a su esposa” [The wives’ egg is lost!], modeled articles and phrases (e.g. “Para buscar el huevo del T-Rex grande” [To look for T-rex’s egg], embedded wh- questions during the interaction (e.g. “¿Hola amigo, me puedes decir que pasa en el cuento?” [Hello friend, can you please tell me what happened in the story?]), and modeled sentences using articles and sequencing vocabulary (e.g. “Se le perdio un huevo del T-rex grande y llamo a nuestro amigo Blue y el nos encontro el huevo” [Big T-rex’s egg is lose and he called his friend Blue and he found the egg])	Identified left and right, played “I spy,” and continued to model the use of articles when producing phrases and sentences. In addition, mom reported that she talked to her husband about modeling complete phrases for Jairo

Session	Goal of the Session	Language Strategies Modeled	Strategies Observed	Strategies Used at Home
5	Increase use of vocabulary skills	Worked on labeling nouns during a structured play event (e.g. the dinosaurs are going to the beach, what are three things that they need in order to go to the beach?), used other objects to represent objects (e.g. a piece of paper as a towel), used descriptors (e.g. what kind of towel do they need?), answered wh- questions (e.g. What are they going to do when they go to the beach?), and used articles and prepositions in grammatical sentences (e.g. Where are they doing to put the sand? What are they going to do first when they go to the beach?)	Dyad engaged in structured play by having the dinosaurs go to the beach and by listing the items needed to go the beach (e.g. bucket, shovel, towel, and ball) through the use of objects, expanded Jairo's phrases/sentences (e.g. Jairo: "El va nadar" [He is going to swim], Mom: "El va a nadar en el agua" [He is going to swim in the water]), answered wh- questions (e.g. "¿Qué jugamos en la playa en el agua?" [What do we play on the beach in the water?]), modeled prepositions in phrases (e.g. Jairo: "En arena," [On sand], Mom: "En la arena" [On the sand]), articles in phrases (e.g. Mom: "¿Dónde estan los peces?" [Where are the fish?], Jairo: "Debajo del agua" [Under the water]), and descriptors (e.g. "Le voy a pegar a la pelota con el pie izquierdo" [I am going to kick the ball with my left foot])	Practiced asking where and what happened questions; mom reported that it went well and that his sentences have increased in length, as she no longer has to count out the words for him because he is able to repeat her, but that he still needed articles modeled for him in sentences
6	Increase vocabulary words, specifically the use of prepositions	Use of praise (e.g. I like how you used the word correctly), followed directions given prepositions (e.g. put it in front of), labeled prepositions (e.g. it's on top of the cap) during a structured activity, and	Jairo followed directions given with prepositions (e.g. "Pon la foca debajo del alhomda" [Put the seal under the pillow]), asked wh- questions (e.g. "¿Dónde estan los vasos?" [Where are the cups?], "Debajo del alhomda" [Under the	Worked on increasing vocabulary skills while playing outside by asking child what plants need and had child list them (e.g. dirt, seeds)

Session	Goal of the Session	Language Strategies Modeled	Strategies Observed	Strategies Used at Home
		sequenced words to discuss a process (e.g. What will the dinosaur eat first?)	pillow]), had the dinosaurs go to the store to buy a boat and list the things needed (e.g. shoes, money), answered questions (e.g. “¿Qué vamos a comprar en la tienda? [What are we going to buy at the store?]), (e.g. ¿Qué necesitamos primero para poner el barco en el carro? [What do we need first to put the boat in the car?]), labeled prepositions (e.g. “¿Dónde esta el barco?” [Where is the boat?] “Esta al lado del carro” [It’s next to the car]), and used praise (e.g. “¡Bravo, lo dijiste bien!” [Bravo, you said it correctly!])	
7	Increase vocabulary, specifically sequences during a process	Used sequencing words during a process (e.g. first I am going to cut the cheese), listed items needed to make a quesadilla (e.g. cheese), had child request using sentences (e.g. I want to use the knife), provided a choice in a field of two (e.g. what do we need a knife or scissors to cut the cheese?), used adjectives to describe objects needed (e.g. the knife is sharp), and labeled prepositions (e.g. we are going to put the cheese on top of the tortilla)	Made quesadillas, and Jairo answered questions that gave choices (e.g. “¿Quieres tortilla de harina o maiz?” [Do you want a flour or corn tortilla?]), listed items needed to make quesadillas (e.g. cheese, tortillas), asked wh-questions (e.g. “¿Qué necesitamos para calentar la tortilla?” [What do we need to heat up the tortilla?], “El sarten” [The pan]), labeled prepositions in phrases (e.g. “Pon lo encima del sarten” [Put it on top of the pan]) and in questions (e.g. “¿Dónde esta el fuego?” [Where is	Used sequencing vocabulary when talking about the routines for the day (e.g. first we made breakfast), provided praise with child asking for feedback, and use of prepositions

Session	Goal of the Session	Language Strategies Modeled	Strategies Observed	Strategies Used at Home
			the flame?], “Debajo del sarten” [Under the pan]). Labeled descriptors (e.g. “Mira esta filoso el cuchillo” [Look the knife is sharp]) and sequenced a process (e.g. “Voy a cortar el queso en trozos y ahora voy a quitar la tortilla” [I am going to cut the cheese in pieces and now I am going to take off the tortilla])	
8	Book reading activity in order to introduce reading strategies (e.g. talking about the pictures, completing complementary activities after)	Reading strategies using English books (e.g. retelling)—labeled using sentences to answer questions regarding illustrations in the book, discussed characters in the story (e.g. How does the boy feel?), asked wh- questions (e.g. What are the boys wearing?), categorized (e.g. What do we wear in the winter), provided child two choices when demonstrating difficulty answering questions (e.g. Is it snow or rain), played “I spy” with pictures in book, and modeled sentences and phrases	Engaged in a book reading activity; described characters in the story (e.g. “¿Cómo se sienta Dora?” [How does Dora feel?]), asked wh- questions (e.g. What are they doing?), talked about the pictures in the book, and recreated a scene from the book (e.g. made a house using materials in the house)	Belem reviewed the function of objects with her son (e.g. What do scissors do?) and found that having the child sequence events was helpful and that his ability to use prepositions and descriptors (e.g. the big dinosaur) had also increased. Mom also reported that she clarified with her husband how to model directions with Jairo (e.g. instead of “put it there,” she has him state where, “put it under”)

**Table IX**  
*Language Behaviors Observed During Belem's Language Intervention*

<b>Behavior</b>	<b>Session 1</b>	<b>Session 2</b>	<b>Session 3</b>	<b>Session 4</b>	<b>Session 5</b>	<b>Session 6</b>	<b>Session 7</b>	<b>Session 8</b>
Praise	0	1	0	0	0	2	0	0
Asking Questions	18	9	25	40	40	29	44	28
Offering Child Verbal Choices	3	0	0	6	6	4	5	3
Use of Open-Ended Questions	42	16	28	37	48	29	54	19
Modeling of Expanded Sentences	7	17	10	33	21	32	8	20
Use/Teaching of a New Word	15	0	0	0	0	13	3	0
Expansion of Child's Language	1	3	5	8	6	6	3	1
Comment	36	35	54	15	34	32	70	45
Imitate	4	3	2	6	10	3	6	2
Label	4	1	1	3	1	1	8	2
Number of Verbal Turn-Taking								
Mother	97	131	90	129	134	81	134	64
Child	86	142	101	121	143	99	157	63
Number of Verbal Interactions	33	32	35	12	22	44	41	49
Other	0	75	0	0	0	0	0	0

### e. Mother Language Analysis

When comparing Belem's language from the initial to the final assessment, she made growth in several language areas; however, the quantitative changes appeared to be less impressive than her qualitative changes.

#### 1) Assessment Language Characteristics

Belem's language was analyzed pre- and post-intervention (See Table X). Based on the findings of these samples, Belem made gains in the type-token ratio and in the number of questions. This change indicates a slight increase in her lexical variation and overall use of questions.

**Table X**  
*Analysis of Belem's Pre- and Post-Language Assessment*

<b>Language Measure</b>	<b>Pre-Assessment</b>	<b>Post-Assessment</b>
Total Utterance	214	162
All Words	932	650
Number of Different Words	191	149
Number of Total Words	623	500
Type Token Ratio	0.21	0.23
MLU in Words	4.35	4.01
MLU in Morphemes	4.49	4.09
Number of Statements	88	65
Number of Questions	47	74
Time	10:07	10:00

While the changes in her speech did not appear to be impressive, she did demonstrate specific changes in her overall language skills that were notable from the initial to final assessments (see Table XI). During the initial assessment, the dyad played with the researcher's

animals, and there was a specific storyline (e.g. the horse escaped from the farm and the animals were trying to find it) during which mom appeared to lead the play. While they were both engaged throughout the session, she was the primary speaker throughout. During this session, she made several comments pertaining to how to play, such as “dame eso” [give me that], or made the sounds of the animals. She also modeled expanded sentences; for example, Jairo said: “Todo tiene comida” [everyone have food], Belem: “¿Todos tienen comida ya?” [everyone has food now?]. Belem also asked open-ended questions but would sometimes answer for Jairo. The following is an example:

Belem: “¿Qué se hace en la granja?” [What do you do on the farm?]

Belem: “¿Qué hacen los animales en la granja?” [What do the animals do on the farm?]

Belem: “Comen, salen a pasear.” [They eat, go out.]

Belem: “¿Qué más hacen?” [What else do they do?]

Jairo: “Mami, ese va aquí.” [Mom, that goes there.]

Jairo: “Yo trae ese.” [I bring that.]

During this assessment, it was noted that Belem would often correct Jairo’s behavior and want to organize the play set-up. For example, at the start, Jairo pretended that his blocks were plants, and the mom did not want them and insisted that he find play grass from another toy set to be the plants.

Belem: “Vamos a imaginar que hay plantas.” [Let’s imagine there are plants.]

Jairo: “Eso es plantas.” [These are plants.] (child took out blocks)

Belem: “No, esas no.” [No not those.]

Jairo: “Es verdes que están allí.” [It’s green the ones here.]

Belem: “No esas no, allí déjalos [No not those, leave them there.]



Belem: “Vamos a imaginar que hay plantas.” [Let’s imagine there are plants.]

Belem: “¿Porque no están las plantas?” [Where are the plants?] “¿Dónde están las de los dinosaurios?” [Where are the ones that go with the dinosaurs?] “¡Ve trae las plantas, rápido, rápido!” [Go bring the plants, quickly!] (child runs to find the plants)

**Table XI**  
*Belem’s Language Behaviors Pre- and Post-Language Assessment*

<b>Behavior</b>	<b>Pre-Assessment</b>	<b>Post-Assessment</b>
Praise	0	0
Asking Questions	29	29
Offering Child Verbal Choices	0	3
Use of Open-Ended Questions	23	45
Modeling of Expanded Sentences	58	22
Use/Teaching of a New Word	0	0
Expansion of Child’s Language	1	3
Comment	97	28
Imitate	2	4
Label	3	2
Number of Verbal Turn-Taking		
Mother	135	101
Child	83	92
Number of Verbal Interactions	56	30
Other	0	0

The dyad made notable changes from the initial to the final assessment. During the final assessment, Jairo picked many of the same animals from the researcher’s bag as he did from the initial assessment, but he also incorporated his own toys, such as a superhero house, during the session. Similar to the initial assessment, there was a specific storyline for the session; however,

it was more child led, and Belem appeared to be more purposeful when asking questions. For example, she incorporated prepositions and more complex language throughout the interaction:

Belem: “¿Qué vez, donde está la granja?” [What do you see, where is the farm?]

Jairo: “¡Allí!” [There!]

Belem: “¿En dónde?” [Where?] “¿Está en frente o atrás de nosotros?” [Is it in front or behind us?]

Jairo: “Atrás de nosotros.” [Behind us.]

Belem: “¡Enfrente, mira, aquí yo veo la granja!” [In front, look, here I see the farm!]

“Tenemos que ir a buscar a los animales.” [We need to go look for the animals.] “Mira ven.” [Come here, look.]

Belem: “¿Le podrías decir donde está la vaca para checar a ver si tiene leche?” [Would you be able to tell the cow to make sure that it has milk?]

Jairo: “¡Esta!” [It is!]

Belem: “¿Por dónde, esta?” [Where is it?] “¿Dónde se escondió?” [Where did it hide?]

Jairo: “Por allí.” [Over there.]

Belem: “¿Adonde?” [Where to?]

Jairo: “Atrás del árbol.” [Behind the tree.]

Another notable difference was in the overall interaction between the dyad. A significant change from the initial to the final assessment was that Belem gave Jairo more time to answer questions. Another change was in the types of commands and questions that Belem asked Jairo, which would explain the decrease observed in several language areas from the two assessments, specifically in the area of commenting and use of open-ended questions. While in the initial assessment many of the interactions were based around what mom wanted Jairo to do, in the

final assessment, she asked him more questions based on the skills that had been addressed over the course of the intervention, such as preposition knowledge. Overall, she was more purposeful in the types of language interactions that she had with Jairo and more relaxed in allowing the play and interactions to occur more naturally.

**f. Mother's Perceptions of the Intervention**

Belem reported a positive experience at the end of the intervention: “Pues fue una experiencia muy diferente a las otras que me dieron. Me enseno muchas cosas y como enseñarle porque de las otras terapias, decían, ‘pues usted ve y va a hablar’ y me ayudo como jugar con él” [Well it was a different experience than the other ones that they have provided. She showed me many things and how to teach him, because with the other therapies, they would say, ‘well you watch and then he will begin to talk’ and she helped me learn how to play with him].

In addition to her positive experience with the intervention, Belem also indicated that her overall interactions with Jairo were positive, specifically, when addressing his language skills. She said, “Pues en las preposiciones, en artículos, más que nada trabajamos mucho en vocabulario, artículos, y oraciones largas” [Well on prepositions, articles, more than anything we worked on vocabulary, articles, and long sentences].

Belem also reported that, during the sessions, the use of home toys was a benefit, as was Jairo's ability to choose with which toy he wanted to play:

Jugando por medio de sus juguetes que quiera, más que nada más por él, por los juguetes que escogía y yo de ese modo le enseñaba un juego y enseñándole las palabras, aumentando los artículos....lo que le hace falta en la hora de hablar. [Playing with the toys that he wanted to, more than anything for him, with the toys that he picked and in

that way, I was able to show him a game, teaching him the words, adding in the use of articles...what he lacked when it was time to talk.]

Prior to the start of the intervention, Belem reported that her strengths and weaknesses in playing with Jairo included her ability to talk to him during a process: “Pues que le enseñó, que le estoy hablando y que le estoy explicando lo que estamos haciendo, para que en el momento que ya terminamos él puede explicar lo que hacemos” [Well what I teach him, what I am talking to him about and what I am explaining to him, what we are doing so that when we are done, he can explain what we did]. Compare this to her response following the intervention in which she reported her overall strengths in play with Jairo included specific activities: “Me gusta más actividades afuera...ir al parque, juegos de correr, juegos de agua” [I like outdoor activities...going to the park, running games, water games]; however, she did not necessarily address in which areas she needed help playing with him. She said, “Pues a la mejor si, pero no sé exactamente que necesidades la que tenga, no me ha dado cuenta” [Well maybe yes, but I am not exactly sure of my needs, I have not realized what they are].

#### **g. Conclusion**

Overall, Belem expressed having a positive experience throughout the intervention, especially because she felt as though she had a deeper understanding of how to model vocabulary and language skills to Jairo. She also appeared to have confidence not only in the intervention, but also in herself as she introduced the different skills to her husband in order to carryover and generalize the skills. She also demonstrated growth in her ability to teach vocabulary, model sentences, and ask open-ended questions.

## 2. Anna

### a. Family Overview

Anna described herself as a single mother of three children. She participated in this study with her three-year-old middle child, José, whom she noted as kind, charismatic, and playful. She indicated that her three children, mother and father, sister, brother-in-law, three nieces and nephews, and her brother resided in the same home. She stated that her sister and herself were the primary caretakers of the children and that she discussed parenting with her sister and past EI therapists. She had concerns regarding José's speech production, specifically his speech intelligibility and his ability to use phrases to communicate. She expressed that she did not feel that his communication delays would impact him in the future, as she felt his speech would get better with services. Anna stated that she enjoyed playing cars with José, and, specifically, she would make slides and houses for his cars and watch movies with him. He also enjoyed playing with his cars, Play-Doh, dinosaurs, airplanes, and his younger sister. Anna also reported that he did not like being corrected or told "no."

When asked about her beliefs as a caregiver, she stated, "Yo pienso que tener mucha paciencia con los niños sobre todo...tener un niño es algo muy especial, enseñarle cosas buenas" [I think that it is about having patience with the children above all...to have a child is very special, to teach them good things]. She has taught him values, such as how to share, be respectful, kind, and responsible, and the importance of caring for his younger sister. When asked about her strengths, she stated:

Yo siento que bien, pero no ser a la mejor me falta...como que tengo que tener más paciencia. Si siento que tengo paciencia, pero no puedo con todo. Me gustaría ser mejor mamá a veces...me siento que a veces...soy no floja, no

irresponsable, y sé lo que tengo que hacer, pero no lo hago...me falta más de aprender de ellos-como cuidarlos mejor. [I think that it is good, but I don't know, maybe I am missing something...like I need to have more patience. I do think that I have patience, but I cannot handle everything. I would like to be better mother sometimes...I feel that sometimes...I am not lazy, not irresponsible, and I know what I have to do, but I do not do it...I need to learn more from them—how to care for them better].

She felt that José's behavior in the neighborhood was important, specifically, the way that he participated in church. Overall, mom indicated that she did not have concerns about home routines, as José no longer napped and was a good eater; however, she expressed frustration with potty training.

Anna provided José's EI services history, which indicated that he started services when he was two years old and received speech and developmental therapy once a week for a year until he turned three. During a typical session, mom would sit in while the SLP and José would use a picture exchange system to request toys and objects. During the sessions, she felt that her role was to address his behavior. She said, "Mi rol era para que (el) tuviera más confianza y no llorara, y ella de ser su trabajo para trabajar con él" [My role was so (that he) would have more confidence and not cry, and so that she could do her job and work with him]. She reported that the benefits of receiving EI services were that José learned colors and how to say his name, and, while she felt that his overall speech did improve, she did not like that he would cry during the sessions.

Anna reported that José qualified for speech and language services through the public-school system, and, at the initial evaluation, the SLP indicated that José needed a lot of help

because he could not use phrases. The SLP suggested that she have José make requests. More specifically, Belem noted:

Que le pusiera más atención en lo que quiera y que yo le dijera, “oh tú quieres esto” pero que yo le estoy diciendo...quieres más jugo “mamá dame más jugo” o más cositas así, como cuando quiere colorear, decir es que no te entiendo y que dejaría los colores, “quiero color rojo o color esto.” [That I pay attention to what he wanted and that I say to him, “oh you want this,” but that I am telling him...you want more juice, “mom give me more juice” or more things like that, like when he wants to color, to say I don’t understand you and to tell him the colors, “I want red or this color.”]

**b. Environment**

Anna stated that her neighborhood was Latino and Spanish-speaking. She lived in a single-family home with both her immediate and extended family. All the intervention sessions occurred in the living room, which was located in the main room upon entering the house, with the exception of one session, which was completed in the kitchen. The television, sofa, and glass display case with personal trinkets were also located in this room. While there appeared to be objects scattered throughout the house, the living room was clear of clutter with the exception of a few toys. Throughout the intervention, the living room was often walked through and used as a gathering place for the family members. The younger children would often eat in the room, adults would check up on their children, and toys and clothing were brought in by all the children.

Throughout the duration of the intervention, Anna had several ideas that she wanted to implement; however, she often changed her mind. For example, she independently selected making slime, drawing, playing with the tablet and Play-Doh, and painting; however, she had

often suggested other activities in the previous session but had to change them because she was unable to find the toys or indicated that José voiced that he did not want to play with that particular toy. Only a few activities were suggested by the researcher, such as cleaning toys and playing with the child's toys. Overall, with the exception of the slime, mom worked with items that were already within the home and that she did not have to prepare ahead of time.

**c. Child Demographic and Educational Supports**

José was evaluated using the TPBA-2 within the public-school system when he turned three with the following results: language comprehension—0% delay, expressive language—50% delay, pragmatics—50% delay, and articulation/phonology—17% delay (intelligibility was judged to be 50-70% intelligible). His receptive language strengths were in his ability to identify descriptive words, colors, categories, and “where” questions. Expressively, he imitated and produced animal sounds, produced jargon, had about 20 words in his repertoire, and used “no.” Pragmatically, he was able to control his emotions, verbally protest, point to request an action, and point to representational words. The areas of need were focused on his speech intelligibility, specifically with the child's inability to produce the correct number of syllables in multisyllabic words and increase the use of functional classroom vocabulary. His goals addressed finding bilingual support to increase the use of single syllable word approximation through the production of the correct number of syllables in multisyllabic words. Based on the results of speech and language testing, it is clear that José struggled with both his speech and language skills, specifically with his expressive language and pragmatic language skills; however, the current goals only addressed his speech intelligibility.



#### **d. Language Sessions**

Overall, mom was able to build upon strategies that were targeted each week, and she appeared to have more confidence as the sessions progressed, as was evident when she no longer required modeling for specific skills. There was evidence of growth in specific language areas that were targeted during the intervention but also limited growth in other areas that were both targeted and not throughout the sessions.

##### **1) Description of Sessions**

Eight sessions were conducted within the home over a period of 12 weeks. Besides Anna and José presence at each session, varying family members were present in the home, such as Anna's daughters, her sister, nephews, niece, her parents, and brother-in-law. At times she was distracted due to her sister interrupting the sessions to offer her advice, her father asking questions about future errands, and by younger children interrupting the session to play.

The dyad participated in a variety of language-based tasks or routines that changed weekly (see Chart IV). Chart IV provides a general description of each intervention session and a description of the goals of each session, which were discussed with the mother before the start of the specific session. The language strategy modeled provided a general idea of the specific activities completed between the researcher and the mom. The actual activities and language strategies and examples observed during the session by the mother were reported in the strategies used by the mother. In the strategies used at home, the mother reported how she used the strategy in between the sessions.

Specific skills were addressed each week and were consistent goals for Anna as she expressed concerns about her ability to meet her child's needs because his speech was so

unintelligible. While it was explained to her that speech intelligibility was not a focal goal in this research study, different ways of modeling her son's expressive language skills were addressed as José was not yet using phrases to communicate his wants and needs.

During the first few sessions, mom appeared to be nervous when practicing the skills that were being modeled for her, as she expressed to the researcher, “No se, como que tengo vergüenza” [I don't know, it's like I am embarrassed]. As a result, she was encouraged to practice with the researcher using one skill at a time and to continue to practice in between sessions. As Anna began to see her child respond to her tactile cues using the strategies, she became more engaged. This also was evident when she would appear to think through each scenario before the sessions. For example, she would pause and ask specific questions that would elicit a specific response from José. In doing this she was purposeful with the questions that she asked, as she was aware that she wanted her son to use a specific strategy, such as requesting “I want” phrases or marking a preposition. In addition, Anna was teaching her family some strategies to use with José when they were talking with him, which was evident when she described how she was carrying over the strategies from each session.

When examining Anna's language behaviors, there are notable changes that occurred during each session, especially from the initial to the final sessions of the intervention (see Table XII); however, there were some consistencies throughout the intervention. For example, she carried over a previously taught EI strategy of having the child repeat syllables when José was having difficulty producing single words (e.g. “say pa-pa”), and as a result, these instances were coded as “other.” This was a skill that was consistently seen in each session, and one that mom felt was having a great impact on José's speech and language development. This was most likely a strategy that she felt comfortable using as well. There was also a change noted in other

behaviors, such as Anna reducing the amount of times she told her son “no.” For example, when asking him questions, she would go back and forth with him if he told her “no,” and she would respond with “yes, listen.” Ways to reduce these frustrations were discussed with mom as she discovered different ways of engaging with her son when his behaviors were not as compliant as she wished.

Consistent behaviors that Anna used throughout the intervention were in her asking both yes/no questions, “¿Quieres decir los colores de tus perritos?” [Do you want to name the colors of your dogs?], and open-ended questions; however, her complexity in using open-ended questions changed throughout the intervention. Instead of asking wh- questions, such as “¿Que es eso?” [What is it?], she started to ask more specific descriptor questions, such as:

Anna: “¿Ahora cual quieres?” [Now, which do you want?]

Anna: “¿El de la gorra o de la mochila?” [The one with the hat or the backpack?]

José: “Muah.”

Anna: “Mochilla?” [Backpack?]

José: “Sí.” [Yes.]

Areas of growth for Anna were found in her praising, with “good job,” offering choices, “Ahora cual quieres, ¿El de la gorra o de la mochila?” [Which do you want, the one with the hat or backpack?], and in her ability to engage her child in activities through the use of commenting. At times José was not interested in playing with Anna, and she would talk through the specific process in order to expose him to the vocabulary. In addition, there was growth seen in her imitating José (Anna: “¡No tu!” [No you!] José: “¡No tu!”); modeling what José was doing (“¡Oh estas haciendo otro círculo grande!” [Oh you are making another big circle!]); and expanding José’s language (José: “Coco!” Anna: “Ese es coco” [That is coco]).

There were also some areas that appeared to not have any growth. For example, there was no notable growth seen in the teaching of new vocabulary words; however, this was not a task that was modeled for the mom and was not an area of concern that she had mentioned. While she did not model single new words (e.g. spatula), she did introduce overall concept development, such as the use of prepositions and descriptors, which with Anna did continue to grow and use throughout the intervention. Another area of no growth was in her ability to label, which was not a focus of the intervention. Anna appeared to address this in her way by having the child repeat her when he was unable to correctly pronounce single words.

**e. Mother Language Analysis**

When comparing Anna's language from the initial to the final assessment, she had made growth in several language areas that were measured using qualitative measures and compared with changes seen during quantitative measures.

**1) Assessment Language Characteristics**

Anna's language was analyzed pre- and post-intervention. A comparison of the two are described in Tables XIII and XIV. Based on the comparison, Anna showed a decrease in her language behaviors in several areas; however, the quality of her language skills improved in two areas, specifically in the type token ratio and in the number of statements produced. In addition, she made growth in several language behavior areas, which included her use of praise, open-ended questioning, modeling of expanded sentences, and expanding José's sentences. Other areas of growth include her use of commenting, labeling, imitating, in the amount of verbal turn-taking and in verbal interactions.

**Chart IV**  
*Description of Anna's Intervention Sessions*

Session	Goal	Language Strategies Modeled	Strategies Used by Mother	Strategies Used at Home
1	Use of common and familiar single words to request colors and animals through making animals and shapes with Play-Doh	Requesting using 2-3-word phrases ("I want blue"), using tactile cues for child to make choice (Do you want to make a circle or a square?), and commenting (I made a ____)	Mom and child played with Play-Doh, but Anna did not use any of the strategies modeled with researcher	
2	Increase communication skills	Requesting and commenting using 2-3-word phrases (e.g. "Give me ____"), continued using of tactile cues for child to make a choice, and mom describing what she and child were doing using verbs and descriptors (e.g. First, we are going to ____)	Made slime using homemade materials; mom had child pick between objects using tactile cues and described steps in a process, (e.g. "Tienes que mezclarlo, so tienes que moverlo" [You need to mix it, so you need to move it]), and asked wh-questions, ("¿Cómo se siente caliente o frio?" [How does it feel, hot/cold?])	Anna asked José if he wanted juice or milk and he attempted to use the tactile cues to make a choice, and she verbally modeled "Dame leche" [Give me milk] for child to repeat and he stated "Leche" [Milk]
3	Increase the child's ability to request using "I want ____" phrases	Use of 3-word "I want" phrases to request using colors and tactile cues to request an object	Mom and child cleaned toy cars; mom provided tactile cues and modeled 3-word phrases (e.g. "Yo quiero blue" [I want blue]) for child to request and comment (e.g. "Yo estoy limpiando" [I am cleaning])	Mom asked child if he wanted bread or milk, giving him tactile cues and single words, and child made a choice using tactile cues and the phrase, "Yo quiero pan" [I want

Session	Goal	Language Strategies Modeled	Strategies Used by Mother	Strategies Used at Home
				bread], which was modeled for him
4	Use of more vocabulary words	Requesting and commenting using 3-4-word phrases, commenting and asking questions using adjectives and descriptors to describe what she/child was drawing (e.g. should we draw a short/long line? Oh you drew a horizontal line!)	Mom and child drew lines and pictures using pencils; mom asked wh-questions, (e.g. “Vamos hacer una linea, mira, ¿Chiquita o larga?” [We are going to make a line, look, a small one or short one?]), and commented on what she (e.g. “Mira, yo hice una linea chiquita” [Look I made a small line]) and the child were drawing (e.g. “¡Wow, hiciste una linea chiquita! [Wow, you made a small line!])	Anna shared strategies that she had been practicing with her mom to use with José (e.g. do you want the small/big candy) and continued to model “I want” phrases
5	Increase expressive language skills to increase phrase and sentence length and use of adjectives	Use of simple phrases to answer wh-questions (e.g. do you want to color the nose or the belt?) given verbal choices in a field of two, requesting using “I want” phrases, and labeling adjectives using phrases (e.g. yes, the head is pink)	Mom and child colored using colored pencils and sharpened the pencils; modeled “I want” phrases (e.g. “Yo quiero blue” [I want blue’]), labeled what the child was doing (e.g. “Yo saco puntas” [I am sharpening the pencil]), used descriptors (e.g. “Yo tengo cinco perritos” [I have five dogs]), and child made a choice between two objects in a field of two (e.g. “¿Quieres pintar la nariz o el zapato?” [Do you want to paint the nose or the shoe?])	Anna bought José a candy and asked him if he wanted the big one or the small candy, and he responded with “big”
6	Increase expressive language and vocabulary	Use of descriptors (e.g. what dog do you want? The one with the backpack or with the lifejacket?), asking wh-questions, use of prepositions when requesting and commenting (e.g.	Dyad played with a car set and animals; asked child what he wanted in a field of two (e.g. “¿Quieres el de la gorra o de la mochila”¿ [Do you want the hat or the backpack?]), used	Mom reported that José said, “¡Mamá ven!” [Mom, come!] and “I want help” independently, and

Session	Goal	Language Strategies Modeled	Strategies Used by Mother	Strategies Used at Home
	words to use in sentences	where are we going to put the dog, inside or outside?), modeling “I want” phrases, and commenting on what the child did (e.g. I put it on top)	“I want” phrases (e.g. “Yo quiero el bombero” [I want the fireman]), asked wh- questions (e.g. “¿Donde lo vas a poner?” [where are you going to put it?]), and labeled using prepositions (e.g. “Yo lo puse afuera” [I put it outside])	she would wait for child to request when he wanted something, and overall, his sentence and phrase use had increased
7	Use of 4-5-word phrases, answering wh-questions, and taking turns	Requesting turns (e.g. “It is mom’s turn”) by using phrases, answered wh- questions (e.g. “What color does he want?”), and used 2-4-word phrases to answer (e.g. the worm is blue) and describe (e.g. it is getting bigger)	Mom and child played a game on the electronic tablet; mom commented and labeled using phrases and simple sentences (e.g. “Me voy a comer el amarillo” [I am going to eat the yellow one]), and labeled whose turn it was (e.g. “Es mi turno” [It’s my turn])	José started using the strategies in other contexts and requested using 2+ word phrases (e.g. “Dame leche”) and called to her independently (e.g. “¡Mami pipi corre! Come on!”)
8	Expand child’s phrases by using descriptors and specific vocabulary (e.g. red paintbrush)	Using “I want” phrases, describing what an object is used for (e.g. “we use a paintbrush to paint”), requesting using descriptors and specific object names (“I want the blue paint”), and labeling actions (e.g. I am painting lines) using phrases (e.g. you are making zig-zags)	Dyad painted using colored paint and paper; mom modeled “I want” phrases using specific descriptors (e.g. “Quiero el pincel de la brocha azul” [I want the paintbrush with the blue handle]) and labeled her and her child’s actions using sentences (e.g. “Estoy haciendo un círculo negro con el pincel” [I am making a circle with the paintbrush])	Child helped mom make dinner, and mom talked through the process, while he repeated her using single words (e.g. huevo)

**Table XII**  
*Language Behaviors Observed During Anna's Language Intervention*

<b>Behavior</b>	<b>Session 1</b>	<b>Session 2</b>	<b>Session 3</b>	<b>Session 4</b>	<b>Session 5</b>	<b>Session 6</b>	<b>Session 7</b>	<b>Session 8</b>
Praise	5	7	13	6	2	3	0	4
Asking Questions	11	20	41	26	31	12	31	16
Offering Child Verbal Choices	2	13	10	16	4	6	0	3
Use of Open-Ended Questions	24	22	46	30	39	12	2	28
Modeling of Expanded Sentences	0	0	9	0	3	0	63	6
Use/Teaching of a New Word	0	0	0	0	0	0	0	0
Expansion of Child's Language	1	1	9	6	1	1	0	3
Comment	94	72	34	52	64	32	99	53
Imitate	1	5	20	0	3	6	12	6
Label	1	3	1	1	1	4	2	0
Number of Verbal Turn-Taking								
Mother	66	66	159	78	117	175	71	155
Child	81	58	127	35	72	141	117	126
Number of Verbal Interactions	83	67	66	61	51	45	166	56
Other	12	4	56	2	19	137	24	94



There was also a striking change noted in her play from the initial to the final assessment. During the initial assessment, Anna appeared to have control of play, for example, by taking out the majority of the toys from the researcher's bag until they agreed upon playing with the toy animals, cars, and dolls. In addition, the majority of the interactions were spent asking José to decide what toys he wanted during the session. This is in contrast to the final assessment during which mom asked José to select the toy that he wanted during the session, while she spent the time interacting with him and asking him questions about the animals.

**Table XIII**  
*Analysis of Anna's Pre- and Post-Language Assessment*

<b>Language Measure</b>	<b>Pre-Assessment</b>	<b>Post-Assessment</b>
Total Utterance	193	187
All Words	632	503
Number of Different Words	162	147
Number of Total Words	623	500
Type Token Ratio	0.26	0.29
MLU in Words	3.24	2.69
MLU in Morphemes	3.31	2.75
Number of Statements	66	85
Number of Questions	103	72
Time	10:21	10:04

During the initial assessment, Anna asked José several yes/no questions, such as “¿Quieres jugar con ese?” [Do you want to play with that?] or “¿Vamos a jugar tropeados?” [Let's play crash], and disagreed with the child if he answered in the affirmative. She would continue to ask questions without acknowledging his response or even if he did not answer her

questions. She also asked him concept questions, such as “¿Qué color es ese?” [What color is that?], and if he was not correct in labeling, she would respond with “no.” For example, when he labeled cars as “vroom,” she stated, “No son vroom, son carros” [They are not vroom, they are cars]. In addition, the child would often repeat her, but she did not model the word (e.g. “say \_\_\_”) for him.

**Table XIV**  
*Anna’s Language Behaviors Pre- and Post-Language Assessment*

<b>Behavior</b>	<b>Pre-Assessment</b>	<b>Post-Assessment</b>
Praise	1	4
Asking Questions	41	8
Offering Child Verbal Choices	71	1
Use of Open-Ended Questions	41	57
Modeling of Expanded Sentences	4	6
Use/Teaching of a New Word	1	0
Expansion of Child’s Language	0	1
Comment	47	45
Imitate	3	12
Label	17	23
Number of Verbal Turn-Taking		
Mother	99	104
Child	64	105
Number of Verbal Interactions	67	66
Other	0	13

This compared to the final assessment, during which mom continued to ask José questions; however, they were open ended, such as “¿Cómo hace el (pig)?” [What does the pig say?] or “¿Van en el agua o en la tierra?” [Do they go in the water or in the land?], and she

modeled the answer for José if he had difficulty. For example, when asked if a shark is found in the water or on land, he answered, “Aquí” [here], and mom stated, “El agua” [the water]. In addition, she described the animals, such as “El pulpo tiene muchos manos” [The octopus has many arms] and had him repeat her using adjectives: “Di puerquito valiente” [Say brave pig]. Overall, there was an increase noted in the number of verbal turn-taking opportunities between Anna and José, and, although there was a decrease noted in the amount of questions, she showed a decrease in the amount of yes/no questions, which allowed for richer interaction within the dyad. For example, instead of asking if he wanted a specific toy, she asked José if he was playing with cars. When the child answered “no,” she asked with what he was playing, and he answered with “animals.” She also engaged with José by asking him questions that he could answer with animal sounds, such as “José, ¿como hace esta?” [José, how does this one go?].

#### **f. Mother’s Perceptions of the Intervention**

Anna reported having an overall positive experience, specifically when asked about her own experience, the interactions she had with José during and after individual sessions, and with the use of materials available at the home. A final interview was completed at the end of the intervention by a graduate student who had not been involved in the intervention. At first, Anna reported that she was embarrassed; she said, “Al principio fue muy penosa y más porque me grababan” [At first, I felt embarrassed, and more so because I was being recorded]. However, as this feeling decreased over the course of the intervention, and when asked about her overall experience, she reported:

Pues la verdad, sí me gusto, porque a mi niño le ayudo un pocito más que le estaban ayudando las otras terapistas, y Giselle me dio unas ideas para que sea más fácil y que se sienta más seguro en hablar, y es lo que me gusta más porque lo está ocupando

más ahorita. [Well the truth is, I liked it, because it helped my child a little more than other therapists were helping him, and Giselle gave me some ideas so that they are easier and so that I am more confident in speaking, and that is what I liked the most because I am still using it now.]

In addition to her positive experience with the intervention, Anna indicated that her overall interactions with José during the interventions were positive, specifically, when addressing his language skills. She said, “Trabajamos bien e interactúa mejor, como cuando yo le decía a mi niño que tenía que repetir las frases y le daba más largas y como que él estaba más seguro de el mismo” [We worked well and interact better, like when I would tell my son that he needed to repeat phrases and he would say longer ones and it was like he was more confident of himself]. And even afterwards, positive effects were seen by Anna. She said, “Después...igual, como cuando ella no estaba, seguimos usando las mismas frases que ella me enseno” [Afterwards...the same, like when she was not there, we continues to use the same phrases that she taught me].

Anna appeared to have a positive experience using toys and routines at home, such as playing with José’s cars. This then translated to better communication between the dyad, as Anna reported that José was requesting more at home. For example, he would say, “Más jugo mamá” [More juice mom], when before he would only say “más” [more].

Prior to the start of the intervention, Anna reported that her areas of need, strengths, and weaknesses when playing with José included adjusting behaviors. For example, she indicated that he would become upset when he would lose a game and would refuse to clean up. She also said that they did not play together very often. However, she reported that a strength of hers was in a strategy that she learned during the intervention: “Es cuando le estoy repitiendo lo que él

está haciendo y es lo que él sabe lo que va pasar” [It’s when I am repeating what he is doing and it’s what he knows that is going to happen]. Following the intervention, Anna described that her areas of need, strengths, and weaknesses when playing with her child included communication with José:

Yo pienso en la comunicación porque cuando le estoy hablando no sé...si no más no me hace caso a mí porque a mí niña me hace más caso que a mi niño...como que él sabe con qué hacerle caso y con quien no. [I think with communication because when I am talking to him, I don’t know...if he just does not listen to me because my other child does listen to me compared to him...it’s like he knows who to listen to and who not to.]

#### **g. Conclusion**

Overall, Anna reported having a positive experience working with both her child and the researcher during the course of the intervention. While she reported feeling initially embarrassed, she demonstrated growth in many areas, which included her overall understanding and confidence in using language-based strategies to increase José’s language skills, her play skills, and in the generalization of strategies to use during routines at home. Anna was also very focused on José’s behaviors throughout the intervention, such as his listening skills and his cooperation with mom, which was evident throughout the intervention.

### **3. Celia**

#### **a. Family Overview**

Celia described herself as a married mother of three children. She participated in this study with her youngest child, Juliana, whom she described as an independent, strong-willed, kind, and playful child. All five family members lived in the same home, and Celia reported that she was the primary caretaker of Juliana. She stated that she would consult friends or childcare

professionals, such as EI providers, for childcare advice, specifically regarding her daughter's behavior. In addition, the dyad received home-based support from educators from Juliana's current education setting to address her social needs at home. The family enjoyed going out to eat, to the park, and hanging out at home. Celia stated that Juliana enjoyed being by her throughout the day, especially when she was painting or drawing. In addition, Juliana enjoyed watching television, playing with cars, engaging in dramatic play, painting, and putting together puzzles; however, Celia stated that Juliana had a short attention span for playing with toys. She expressed concerns about Juliana's expressive language skills. Celia expressed that, while her concerns were with Juliana's speech and language abilities, Juliana had depressed abilities in her ability to use phrases and sentences and vocabulary skills. She explained how she thought this might affect Juliana in the future: "Mucho porque por ejemplo miya, yo nunca le preste atención del lenguaje y siento, especialmente en español, no pronuncia como debe, y no sé si todavía, creo que todavía podía tomar la terapia" [I think a lot because for example my daughter, I never paid attention to her language and I feel that especially in Spanish, she does not pronounce it like she should, and I think that she should receive therapy].

Celia felt that her overall experience as a mom to three children was one of her strengths. She jokingly pointed out Juliana's eight-year age difference from her older sister and reflected upon how difficult it was to go back to the baby stage, especially with timing naps around the older girls' activities. She valued the idea that her children should be respectful and obedient; however, she did not believe in routines and wanted her children to be independent. About her philosophy, she said:

Nunca me ha gustada las rutinas porque es difícil seguirlas, y si han sido  
obedientes mis hijas...pero también me gusta que sean...que tengan su opinión, y si no

quieren seguir algo, que digan porque...preparar sus argumentos. [I have never liked routines because they are difficult to follow, and my daughters have been obedient...but I also like that will...that they have their own opinion, and if they do not want to follow something, that they say why...prepare their arguments].

Celia reported that Juliana had received a variety of EI services, which included physical therapy for a year starting when she was 11 months, and both SLP and social work services for six months when she was two and a half years old until she aged out at three years. Celia reported that she was not particularly fond of the initial SLPs and had requested a second one. Although both SLPs would bring in their own toys, the initial SLP was described as strict, and Celia felt cheated out of her therapy time because the SLP would complete paperwork instead of providing direct services. This was in comparison to the second SLP who would say hello and model strategies for the dyad. Celia claimed that the initial SLP would watch the sessions from the couch and forbade Celia to engage in the sessions. She said, “Decía que me quitara que no que no le hacía caso, que por eso no le hacía caso a ella, porque ella sabía que yo la iba como a rescatar, y no quiera yo estuviera” [She told me to get away and that I should not pay attention to her, because that was why she did not listen to her, because she knew that I was going to rescue her, and she did not want me there]. This compared to the second SLP who used mom as a translator when Juliana was difficult to understand.

Juliana also received speech and language services through the public-school system, and Celia explained that her role was to translate for Juliana since the SLP who provided services was not bilingual and did not speak Spanish. Overall, she indicated that her experience had been fine.

### **b. Environment**

Celia described her neighborhood as mainly African-American. She lived in a two-flat home on the main floor of an apartment building. All the intervention sessions occurred in the living room, which was located in the main room that one would walk into first in the house. It appeared that many of Julianna's toys were in this room; however, they were often scattered all over. She had a kitchen set in one corner of the room, but there were many other toys piled on top of the set. In addition, there were two sets of couches, a coffee table, a mini fridge, a rug, and an armoire in the room. Throughout the intervention, the room was often very busy, as toys and other items (i.e. shoes) were scattered throughout the room; however, if family members were present in the home, they did not walk into the session. The interventions took place in two separate places in the living room—on the rug and on the sofa.

Celia had toys and activities prepared for each session; however, Juliana often did not want to engage with the activity and would bring in her desired toys. Mom indicated that she had bought specific toys for Juliana with which she saw her interact with the therapist in EI. Celia said:

Por ejemplo, una vez le traje la papa que se le pone los ojos y estaba feliz, encantada jugando con ella. Y al siguiente día, dije, creo que tengo una se la voy a buscar. Pero al siguiente día una amiga puso de venta una así grande y trae muchos adentro...se la compre y nunca le ha hecho caso. Entonces no se qué tiene que tener eso porque yo veía con la terapeuta de habla-wow eso le gusto—yo tengo en la casa y lo ponía...pero no ya conmigo no lo hace. [For example, one time she brought potato that you can put the eyes on, and she was happy, engaged in playing with it. The following day, I said, I think that I am going to find it-but soon after, a friend was selling the big



one that has many inside...I bought it and she has never paid attention to it. So I don't know what that has to do with it because I saw her with the speech therapist and-wow she liked it—I have it at home and I set it out...but with me she won't do it.]

As a result, mom introduced the Mr. Potato Head, train sets, kitchen sets, dolls, and blocks throughout the intervention. While the interventions were focused on engaging with these specific toys during the play between the mom and child, Juliana often picked the Mr. Potato Head. In addition to these toys, the therapist also introduced non-toy items to engage in dramatic play, such as using pieces of paper to improvise a blanket.

#### **c. Child Demographic and Educational Supports**

Juliana was evaluated in the public-school system when she turned three using the TPBA-2 to determine eligibility for services. According to the speech and language report, she presented with 0% delays in both her receptive and expressive language skills and a 14-35% delay in her articulation skills. Her receptive language strengths were in her ability to follow multiple-step directions, identify pronouns, body parts, clothing, nouns, and in answering wh-questions. Expressively, she communicated using simple phrases, labeling, such as shapes, and in her play skills. Reports indicated that her receptive language skills were lacking in response to adult directives, answering questions, and in transitions. Expressively, she needed to work on expanding vocabulary in using concepts, such as colors, shapes, animals, and in using 3-4-word phrases.

#### **d. Language Sessions**

When examining the use of language strategies over the course of the intervention, there was a notable change in the use of Celia's strategies, which were taught to her throughout the duration of the intervention. While limited growth was observed in some areas, specifically in

ones that were taught, she demonstrated growth in other areas. This was evident as she reported that she was using taught strategies at home in between the sessions.

### **1) Description of Sessions**

The intervention occurred over a time period of four weeks in family's home. Only the mom and child were present for the sessions with the exception of three during which Juliana's two older sisters, father, and uncle were at home. There were only a few instances of family distractions during the intervention, such as when one of Celia's older daughters attempted to model language strategies for her and when her brother walked into a session; however, Celia asked her family members to leave the room, and they complied. While Celia was not personally distracted, Juliana would comment or attempt to leave the session; however, Celia would direct her to come back and participate. Celia's goals, language activities, and carryover of the goals is reported in Chart V).

The dyad participated in play-based tasks throughout the intervention, and, in each session, mom or Juliana picked out the toys with which they wanted to play, such as with dolls. However, while the researcher and mom would practice with a specific toy, Juliana would often lose interest or change the activity entirely, which would sometimes visibly/verbally frustrate Celia. For example, Celia would comment on how they had already decided what toys they were going to play with or would look at the researcher and roll her eyes. Although Celia expressed concerns with Juliana's speech intelligibility, she understood that that was not a focal point of the intervention. Other specific skills, however, did address Celia's concerns, such as increasing Juliana's use of simple phrases to request and comment. Depending upon the activity, the use of each strategy varied within each session. Celia would consistently have the child repeat syllables and single words when Juliana was difficult to understand, and, as a result, these instances were

coded as “other.”

At times, Juliana’s behavior was the focus of the intervention. While Juliana would sometimes decide in which toy she was interested, she also displayed many behaviors that were distracting. For example, she cried if Celia’s attention was directed at the researcher, whined persistently (e.g. continual asking for her mother’s phone during sessions after being told no), threw and destroyed toys that the mother and researcher had set up, and refused to listen to her mom. Nevertheless, there was a change in the way that Celia handled Juliana’s unwanted behaviors throughout the intervention. For example, during the initial assessment, Juliana whined, kicked, threw toys, and self-directed her behaviors when she was asked to play with her mom. Specific strategies were offered to Celia to decrease these behaviors, such as stating what she was doing. For example, she was modeled to say, “Yo voy a jugar con la papa” [I am going to play with the potato] or to label what Juliana was doing, “¡Oh no! ¡Estas quebrando las vías! [Oh no, you are breaking the tracks!]. These strategies were worked on consistently throughout the intervention, and, although Juliana appeared to respond positively to Celia, the mother required reminders throughout the intervention to implement the strategies.

When examining Celia’s changes in language, there was some variability between sessions; however, there were consistent uses in language strategies (see Table XV), such as in offering verbal choices “¿Quieres pintura verde o amarilla?” [Do you want green or yellow paint?], the use of open-ended questions, “¿Dónde lo vas a poner?” [Where are you going to put it?], and the use of comments, “Vamos a jugar tu y yo” [You and I are going to play]. Of note was the small increase in the use of other strategies throughout the intervention, such as in expanding a sentence, Juliana: “¡Se salió!” [It fell out!] Celia: ¡Se salieron las piedras! [The rocks fell out!]), the use of praise, “Bien dicho” [Well said], imitation (e.g. Juliana “largo” [long]

**Chart V**  
*Description of Celia's Intervention Sessions*

Session	Goal	Language Strategies Modeled	Strategies Used by Mom	Strategies Used at Home
1	Increase child's vocabulary and concept development using sentences	Child choosing between two objects (e.g. do you want the big one or the little one?), labeling what one is doing (e.g. I am putting the hat on the head), modeling grammatical sentences using "I want" phrases, asking wh-questions (e.g. what color are your shoes?) and labeling with adjectives (e.g. you picked the black hat!)	The dyad played with Mr. Potato Head; mom gave her a choice (e.g. "¿Quieres la papa grande o papa chiquito?" [Do you want the big or small potato?]), labeled what she was doing (e.g. "Yo le voy a poner las orejas" [I am going to put on the ears]), asked wh- questions (e.g. "¿Dónde va la oreja?" [Where do the ears go?]), and modeled phrases (e.g. child: "nariz" [nose] mom: "Es una boca roja" [It's a red mouth]).	
2	Increase use of adjectives (e.g. I want the blue one) and requesting using grammatical phrases and sentences (e.g. "I want")	Using blocks, providing a choice between two objects (e.g. do you want to make a house or a train?), modeling phrases/sentences (e.g. I want to make a house), asking wh-questions (e.g. where does the frog go?), using descriptors (e.g. I want the blue one), and pretend playing using objects in the house (e.g. the frogs are hungry, what are we going to feed them?)	Mom and child played with blocks and Mr. Potato Head, while Celia modeled "I want" statements (e.g. "Yo quiero la papa" [I want the potato]) and used descriptors (e.g. "La rana es verde" [the frog is green])	Mom reported that she was modeling "I want" or expanded sentences (e.g. Juliana: "Pantalon rojo" [Red pants], mom: "Quiero el pantoalon rojo" [I want the red pants]). In addition, Juliana requested to play with Mr. Potato Head, which was

Session	Goal	Language Strategies Modeled	Strategies Used by Mom	Strategies Used at Home
				not a toy of high interest
3	Increase use of adjectives to request and label, the use of concepts (e.g. prepositions) and the use of grammatical sentences	Modeling language with blocks and baby dolls; mom labeling what she was doing (e.g. I am going to play with the doll), using “I want” phrases with descriptors (e.g. I want big blocks), modeling complete sentences, providing choices (e.g. do you want the big blocks or the small ones?), using prepositions (e.g. is it inside or outside the bag?), making objects with the blocks (e.g. block beds) and using descriptions (e.g. the mom is sleeping on top of the bed)	Played with blocks, labeled prepositions (e.g. “Vamos a jugar con los que estan adentro de la bolsa” [We are going to play with the ones that are inside the bag]), modeled sentences using descriptors (e.g. “Quiero jugar con los bloques verdes” [I want to play with the green blocks]), made objects with the blocks (e.g. “Vamos hacer una cama para la mamá” [We are going to make a bed for the mom]), asked “where” questions (e.g. “¿Dónde esta el perrito?” [Where is the dog?]), modeled the answer to wh- questions (e.g. “Afuera de la casa” [Outside of the house]), and modeled grammatical phrases (e.g. “Quiero cereal” [I want cereal])	Mom stated that, at home, they had been using complete sentences with descriptors and would have her try to repeat the phrases but had noted difficulty with her ability to use expanded sentences without a model
4	Continue to work on vocabulary concepts (e.g. big/small) during structured play, modeling phrases and	Using dolls and toys, worked on requesting using descriptors (e.g. I want a small chair), providing child choices (e.g. Do you want the yellow or pink chair?), asking wh- questions (e.g. what do you do with a brush), modeling expanded sentences with descriptors (e.g. she has purple shoes), using “I want”	Dyad played with dolls making soup, requested using descriptors (e.g. “Quiero las munecas grandes” [I want the big dolls]), offered choices with concepts (e.g. “¿quieres concinar en la mesa grande o mesa chiquita?” [Do you want to cook on the big or small table?]), asked wh- questions (e.g. “¿Qué le vamos a poner en la sopita?” [What are we	Mom labeled prepositions, such as telling Juliana where to find items in the home (e.g. “¿Busca los lentes, estan arriba, busca arriba!” [Look

Session	Goal	Language Strategies Modeled	Strategies Used by Mom	Strategies Used at Home
	sentences, asking wh- questions (e.g. where is the mom?)	phrases and prepositions (e.g. she is going to sit in the chair)	going to put in the soup?]), labeled descriptors (e.g. “¡Quiero hacer sopita amarilla!” [I want to make yellow soup]), modeled expanded sentences, and incorporated other toys to play (e.g. beads as vegetables for soup)	for the glasses, they are up there, look up there!]); however, Juliana was not yet using the prepositions
5	Increase vocabulary concepts (e.g. descriptors), ask wh- questions, and model phrases and sentences	Making pretend soup, requesting given two choices (e.g. is it a kitchen or a pool?), labeling prepositions, using praise, modeling phrases (e.g. I am going to play in the kitchen), listing items needed during process (e.g. ingredients needed to make soup), asking wh –questions (where do we cook soup?), labeling descriptors (e.g. I want big potatoes), marking prepositions (e.g. put the spoon inside), and sequencing events (e.g. the soup is off the stove, now what do you need to do?)	Made pretend soup, asked questions given a choice (e.g. “¿Quieres hacer tamales o sopita?” [Do you want to make tamales or soup?]) and descriptors (e.g. “¿Quieres los tamales rojos o verdes?” [Do you want the red or green tamales?]), labeled using descriptors (e.g. “¡Un tamel blue!” [A blue tamale!]), asked wh- questions (e.g. “¿Dónde vamos a poner los tamales?” [Where are we going to put the tamales?]), labeled prepositions (e.g. “Adentro de la cazuela” [inside the pot]), used “I want” phrases (e.g. “Yo quiero chile” [I want chile]), and expanded on the child’s utterances (e.g. child “más” [more] Celia: “Yo quiero más pan” [I want more bread])	During play, child identified and followed directions given descriptors, and Juliana was starting to use them occasionally (e.g. chiquito [small] instead of zapato chiquito [small shoe]); but Celia had difficulty expanding the child’s phrases
6	Increase use of vocabulary, phrases, and praise	Asking wh- questions (e.g. where does the hat go?) when playing with Mr. Potato Head, requesting using “I want” phrases (e.g. I want	While playing with Mr. Potato Head, Celia modeled phrases (e.g. “Yo soy una mamá” [I am a mom]), expanded when the child answered using a	During play mom indicated that child can identify

Session	Goal	Language Strategies Modeled	Strategies Used by Mom	Strategies Used at Home
		eyes), asking questions given choices (e.g. are they up or down?), using praise, expanding phrases (e.g. shoes: they need shoes), asking questions given choices (e.g. do you want sausage or pepperoni pizza?), modeling a storyline with Mr. Potato Head making a pizza, and marking prepositions	single word (e.g. “Yo soy una papa” [I am a potato]), asked wh- questions (e.g. “¿Dónde esta tu telefono?” [Where is your telephone?]), labeled prepositions (e.g. “¿Estas detras de me?” [Are you behind me?]), used praise, and used sentences with descriptors (e.g. “Me voy a subir con los zapatos azules” [I am going to go up with blue shoes])	prepositions and descriptors (e.g. small spoon) was not yet labeling
7	Build vocabulary by the use of prepositions and model phrases and complete sentences	While using a train set, using descriptors to request (e.g. do you want the long one or the short one?), using specific vocabulary to label (e.g. caboose instead of train), asking wh- questions during a play-based activity (e.g. what are items that trains can transport), marking prepositions (e.g. the train us under the bridge), describing events to child (e.g. I am making tracks go to the right), requesting using phrases and sentences (e.g. I want the big green tree), marking descriptors (e.g. the train is bringing white milk that is cold), and using household items to represent objects (e.g. paper balls for rocks)	During a train playing activity, Celia described what she was doing (e.g. “Voy hacer un tren muy grande y larga” [I am going to make a train that is big and long]), labeled prepositions (e.g. “¿Esta arriba como una vivora!” [Its up high like a snake!]), used praise, asked wh- questions (e.g. “¿Qué le falta?” [What’s missing?]), modeled sentences (e.g. “Yo lo hago sola” [I am making it myself]), asked questions given choices (e.g. “¿Esta grande o chiquito?” [Is it big or small?]), and modeled “I want” phrases (e.g. “Yo quiero arriba” [I want up])	Celia used prepositions (e.g. on top), descriptors (e.g. cold), and praise, but has been focused on Juliana repeating phrases and sentences (e.g. “Yo quiero ____” [I want ____]); Celia reported that she felt more natural using the strategies at home
8	Build on vocabulary	Painting using colored paints, using descriptors (e.g. you are	Dyad painted using paints, and mom labeled “I want” phrases with	Celia used prepositions and

Session	Goal	Language Strategies Modeled	Strategies Used by Mom	Strategies Used at Home
	skills and modeling phrases and sentences	painting a red circle), explaining function of objects (e.g. the paintbrush is for?), requesting using “I want” phrases, asking riddles (e.g. what is something we eat that is orange?), requesting given a field of two (e.g. is it big or small?), and describing what she was doing (e.g. I am painting a green circle)	descriptors (e.g. “Quiero verde para hacer un círculo” [I want green to make a circle]), offered choices in a field of two (e.g. ¿Quieres pintura verde o negra?” [Do you want green or black paint?]), labeled descriptors (e.g. “Un círculo grande” [a black circle]), modeled phrases (e.g. “¿Me pones pintura amarilla?” [Will you give me yellow paint?]), and asked wh- questions	descriptors to label, but Juliana was not using them; mom continued to model expanded phrases and sentences, provided praise when Juliana did use a full sentence, and Juliana’s older sisters were also modeling language strategies with Juliana



**Table XV**  
*Language Behaviors Observed During Celia's Language Intervention*

<b>Behavior</b>	<b>Session 1</b>	<b>Session 2</b>	<b>Session 3</b>	<b>Session 4</b>	<b>Session 5</b>	<b>Session 6</b>	<b>Session 7</b>	<b>Session 8</b>
Praise	2	1	1	0	2	3	3	3
Asking Questions	37	12	28	32	49	34	28	35
Offering Child Verbal Choices	3	0	3	6	12	1	1	3
Use of Open-Ended Questions	48	42	22	6	17	26	14	26
Modeling of Expanded Sentences	8	7	6	10	17	17	29	9
Use/Teaching of a New Word	9	0	0	0	0	0	0	0
Expansion of Child's Language	3	6	4	3	4	3	6	1
Comment	71	58	81	71	77	61	56	41
Imitate	26	9	8	5	6	5	2	6
Label	10	3	3	2	4	0	9	2
Number of Verbal Turn-Taking								
Mother	112	111	95	109	124	98	91	109
Child	104	106	99	123	103	98	73	112
Number of Verbal Interactions	76	54	79	55	73	47	62	45
Other	6	30	22	30	11	6	6	27

Celia, “largo”), and labeling, “Ese es un árbol mira, tiene un cascabel abajo” [It’s a tree look, it has a bell underneath].

There appeared to be limited growth in the area of teaching new vocabulary words, but this was not a specific strategy that was modeled for the mom. Instead of teaching Juliana single new words, she did use and model concept development, such as the use of prepositions and descriptors, which Celia did consistently throughout the intervention. For example, when labeling prepositions while loading pretend rocks onto a train, Celia began:

Celia: “¡Oh lo vamos a poner arriba las piedras que va llevar!” [Oh we are going to put the rocks on top that it’s going to take!]

Celia: “Piedras.” [Rocks.]

Juliana: “Piedras.” [Rocks.]

Celia: “¿O un árbol?” [Or a tree?]

Celia: “¿Ok, que va a llevar?” [Ok, what is it going to take?]

Juliana: “¡Ay, lo metiste aquí!” [Ay, you put it here!]

Celia: “Lo metí allí, adentro.” [I put it here, inside.]

#### **e. Mother Language Analysis**

When comparing Celia’s language from the initial to the final assessment, she made growth in several language areas that were measured using both qualitative and quantitative measures.

#### **1) Assessment Language Characteristics**

Celia’s language was analyzed pre- and post-intervention (see Table XVI). Based on the findings of this sample, she made gains in the areas of using single words, in both the number of words and total words and in her overall MLU in both words and morphemes. Overall, this

indicated that, while Celia showed a decrease in the amount of statements and questions from the initial assessment, the increase in her token type ratio indicated a change in her lexical variation. Specific language behaviors were also reported from the initial and final assessment (see Table XVII), such as an increase in the mother modeling expanded sentences, asking questions, and in the total number of the child's verbal turn-taking.

**Table XVI**  
*Analysis of Celia's Pre- and Post-Language Assessment*

<b>Language Measure</b>	<b>Pre-Assessment</b>	<b>Post-Assessment</b>
Total Utterance	203	190
All Words	673	738
Number of Different Words	178	184
Number of Total Words	666	732
Type Token Ratio	0.27	0.25
MLU in Words	3.42	3.98
MLU in Morphemes	3.47	4.06
Number of Statements	80	63
Number of Questions	73	65
Time	10:00	10:00

There were notable changes made in Celia's language from the initial to the final assessment. During the initial assessment, the dyad played with the researcher's animals, puzzle pieces, and dolls. During this session, Celia asked several open-ended questions, such as "¿Cómo hace el perro?" [What sounds does the dog make?], "¿De qué color es él?" [What color is he?], asked yes/no questions, "¿Te gusta el guajolote?" [Do you like turkeys?], and labeled many of the actions of the dolls and animals, "El chivo está muy chiquito, no te puede llevar a tu casa"

[The goat is very small, he can't take you to your house]. The following is an example of an exchange between the dyad during the session:

Celia: “¿Una muñeca?” [A doll?]

Juliana: “¡Uh huh!”

Celia: “¿Cómo se llama?” [What's her name?]

Juliana: “Una niña.” [A girl.]

Celia: “¿Oh y que color es su vestido?” [Oh and what color is her dress?]

Juliana: “Yellow.”

Celia: “Amarillo.” [Yellow.]

Celia: “¡Mira yo me encontré una vaca y un caballo!” [Look I found a cow and a horse!]

Juliana: “No, no quiero.” [No, I don't want to.]

Celia: “¿Hola cómo te llamas?” [Hello, what's your name?]

Juliana: “¡Nada, cállate!” [Nothing, be quiet!]

Celia: “¡No! ¡no! ¡no!”

Juliana: “¡Sí! ¡Sí! ¡Sí!” [Yes, yes, yes!]

Celia: “¿Me ayudas a caminar?” [Will you help me walk?]

Juliana: “Umm, sí.” [Umm, yes.]

Celia: “¿Te vas a subir arriba de me?” [Do you want to get on top of me?]

During the initial assessment, play was led by Celia and not organized in terms of the plot or with a specific story setup. In addition, she labeled several of the animals and asked Juliana what sounds several of the animals made; however, mom also appeared to have difficulty keeping the child engaged, as the latter constantly asked to play with her mom's phone. This compares to the final assessment during which there were notable changes in how the dyad

**Table XVII**  
*Celia's Language Behaviors Pre- and Post-Language Assessment*

<b>Behavior</b>	<b>Pre- Assessment</b>	<b>Post- Assessment</b>
Praise	2	1
Asking Questions	28	37
Offering Child Verbal Choices	0	2
Use of Open-Ended Questions	41	24
Modeling of Expanded Sentences	3	34
Use/Teaching of a New Word	0	0
Expansion of Child's Language	0	0
Comment	87	59
Imitate	8	3
Label	11	0
Number of Verbal Turn- Taking	125	127
Mother	114	130
Child		
Number of Verbal Interactions	53	53
Other	0	13

interacted. Juliana picked the same dolls from the initial assessment but also independently chose to use her own personal rug to add to the play. During this session, the language was centered around the dolls and what they were doing and what they looked like, with mom giving specific descriptors with which to label (e.g. they are outside of the bag) and asking wh- questions (e.g. where is the doll?). Celia began the exchange:

Celia: “¿Ok, quieres la niña del pelo rubio o la niña del pelo negro?” [Ok, do you want

the girl with blonde or black hair?]

Juliana: “¡Este!” [This one!]

Celia: “Quiero.” [Want.]

Juliana: “Yo quiero.” [I want.]

Celia: “La niña.” [The girl.]

Juliana: “La niña.” [The girl.]

Celia: “Del pelo rubio.” [With blonde hair.]

Juliana: “La rubio esa.” [The blonde, that one.]

Celia: “Gracias.” [Thank you.]

Compared to the first assessment, Celia appeared to be more confident as they were both engaged in reciprocal play. Overall, Juliana’s behavior also improved from the initial assessment, which had an impact on the amount of verbal turn-taking opportunities that she made. During this specific assessment, she did not whine, throw toys, or become defiant during the session. In addition, there was a story that revolved around the doll swimming in the water that incorporated the child’s rug. While the daughter originally used her own rug to indicate that she wanted the doll to start swimming, Celia continued to offer additional details in order to increase the overall complexity of play:

Celia: “¿Cómo te llamas?” [What’s your name?]

Juliana: “Mermaid.”

Celia: “Mermaid?”

Juliana: “Yes!”

Juliana: “Blue!”

Celia: “¿Vas a nadar?” [Are you going to swim?]

Juliana: “Mhm.” (Yes.)

Celia: ¿Y cómo lo vas a hacer? [How are you going to do it?]

Juliana: “Kick, kick.”

Celia: “Kick, kick, kick.”

Celia also continued her use of yes/no questions, for example, “¿Quieres ir adentro?” [Do you want to go inside?] and open-ended questions, “¿Dónde está tu casa?” [Where is your house?]; in fact, these questions increased in complexity from the initial assessment. The greatest amount of growth was in her modeling of expanded sentences—“Juliana: tres [three]” and Celia responded: “¡Yo tengo tres también!” [I am three years old too!], which is consistent with the increase seen in the MLU in both morphemes and words.

#### **f. Mother’s Perceptions of the Intervention**

During the final interview, Celia stated that she enjoyed the intervention and felt that there were benefits in participating:

Me gustó mucho porque son experiencias para que yo como madre las pongo en práctica. No sé si así lo van a trabajar después del estudio, pero me gusto que no es nada más venir a trabajar con la niña, sino también con los papas y podemos seguirlo haciendo durante.

[I enjoyed it a lot because they are experiences that I as a mother can put into practice. I am not sure if this is the way that you will continue to run the program after the study, but I liked that it was nothing more than to only come to work with my child, but also with the parents and we can continue practicing during].

In addition to the positive experience that she reported, she also indicated that she enjoyed having individual time to work with Juliana:

Como padres siempre andamos a la carrera haciendo cosas y es pocito el tiempo que dedicamos complemente a nuestros niños, y es como por decir cuando ella estaba aquí es el tiempo que estoy con mi hija exclusivamente trabajando en su lenguaje. [As a parent, we are always racing to finish things and it's only a little time that we dedicate completely to our children, and it's to say that when she was here, it was time that was I was exclusively with my daughter working on her language.]

While Celia appeared to benefit from and enjoy the intervention, she had difficulty generalizing the strategies and practicing in between the sessions. She explained, “Durante el día no lo hago o si ya se lo que me trate de decir no la hago que lo repítelo o que lo pronuncie bien” [During the day, I do not do it but if I know that she is trying to say, I do not have her repeat and pronounce it correctly]. In addition, Celia also appeared to enjoy using toys and routines at home. She said, “Estuvimos jugando con los juguetes de mi hija y me sirvió mucho porque había juguetes que ella no le gustaba y ya después eran sus favoritos” [We were playing with my daughter's toys and that benefited me because there were toys that she did not like and afterwards they were her favorites].

At the initial interview, Celia reported that her strength when playing with her child is that she is bilingual; therefore, she is able to help Juliana in developing both English and Spanish, specifically with the concept of color labeling in both languages. Mom indicated that “Ese él lo primero que le van a preguntar” [That is the first thing they are going to ask her]. An area of need was in her patience, about which she said, “Hay veces que trabajo un rato con ella y me desesperó y me voy y ya le dejo jugando o le pongo a sus hermanas que juegan con ella” [There are times that I am working with her and I lose my patience and I leave her playing or I leave her to her sisters so that they can play with her]. Celia indicated that, given the separation



of years between her two older children and Juliana, it had been a difficult adjustment. Following the intervention, Celia reported that her strengths were in her ability to “Sentarme con ella, platicar, escucharla, nada más si, en el momento, de escucharla y que me diga las cosas” [Sit with her, talk, listen to her, nothing more if to listen to her when she tells me things]. She indicated that an area of weakness is remembering, specifically in using the strategies that had been taught to her. Celia said, “Necesito siempre recordarme, porque de repente, se me sigue olvidando que si no me dice la oración completa no la hago que la diga” [I need to keep remembering, because suddenly, I will keep forgetting that if she does not ask using a complete sentences, I will not make her use one].

#### **g. Conclusion**

In summary, Celia reported a positive experience throughout the intervention, especially with the one-on-one time that she was able to set aside to work with her daughter and the introduction of different strategies on how to interact and play with various toys at home. Overall, she demonstrated growth in several areas, such as in her ability to reduce Juliana’s unwanted behaviors, ask open-ended questions, expand on Juliana’s language, use toys that she had available, and label language concepts.

### **B. Cross-Case Analysis**

Once each case was examined, the data across all three cases were analyzed comparisons made between each mother’s experience of the intervention.

#### **1. Demographic and Educational Supports**

In examining each case, the mothers’ EI backgrounds were similar and worth noting. While each child had various EI services, they had all received speech and language therapy to

address communication delays. Each mother had indicated a different experience; however, they all appeared to understand the purpose of home-based services. This is important to note when describing each mother's purpose for enrolling in the research study. The mothers indicated that they were motivated by the study in order to help their child speak better, which signified that they were aware of their child's difficulties with overall language skills. Belem stated, "Por lo menos como darle la ayuda en como enseñarle como practicar la forma o el modo en como habla" [At the minimum how to give him support and how to teach him how to practice the form and manner in how to speak].

Another similarity between the mothers was regarding the children's diagnoses and parental concerns. While the children all were receiving speech and language services to address their speech intelligibility, they were also receiving services to address their language skills. However, when each mother was asked about their concerns, they all took issue with the child's lack of intelligibility and not their overall semantic or syntactic development.

## **2. Language Sessions**

While each dyad presented with unique needs and characteristics during the intervention, each family shared notable characteristics. For example, each mother had concerns about their child's speech intelligibility; however, the intervention did not address this issue. Although the language testing that was completed by the child's neighborhood schools revealed expressive language delays in the children, the mothers expressed concerns regarding their child's speech intelligibility and future impacts. While the intervention was designed to address the children's vocabulary skills and the mothers had other concerns, the mothers were all aware of the focus of the studies, and, throughout the duration of the intervention, they remained focused on the child's expressive language needs and not the child's speech intelligibility.

A second shared factor was based on the ways in which the mothers responded to their child's behavior. Throughout the sessions, each mother focused on their child's behavior; however, there were changes in the dynamics between the dyad from the start of the intervention to the end. For example, while Celia indicated that she wanted her children to think independently, her daughter was often self-directed and required several verbal models and directions in order to direct her behavior in a way that would grant compliance. In addition, the mothers would ask their children to attend to what they were saying (e.g. listen José) or would give them directives that they were expected to follow (e.g. bringing the researcher water).

In addition, each dyad used the activities and toys in their house in creative ways. For example, each dyad began to use other objects to represent toys in order to incorporate more dramatic play into the sessions. This not only affected the language skills observed between the dyad but also increased the mother's understanding of using routines and materials at the home for play. For example, during the final assessment, as the researcher was leaving, Belem asked Jairo to put on his shoes so that they could go outside and build forts with sticks. She then reported to the researcher that, based on the intervention, she had learned that she can use different types of materials at home to increase dramatic play and that this, in turn, increased her child's general interest in play.

Finally, each mother reported that it was difficult and challenging to use what they learned through the intervention; however, they felt more comfortable and natural using the intervention as the sessions progressed. This was evident when the mothers played with their children. They often paused before the intervention began, for example, to set up the play scenario. They also reported some challenges that they felt during the intervention. Initially, Anna reported that something was missing and wanted more examples with modeling the

techniques, as she was not comfortable with using the language with her child, and she appeared reluctant to use the models that she learned initially. In addition, she reported feeling frustrated that José would not listen to her and that he was sometimes not engaged during the session. However, when he was attentive and engaged with her during the sessions, she reported a more positive experience. Celia indicated she was not used to the strategies and that they were a lot of difficult work, since this was the first time she addressed this with Juliana. In addition, she reported difficulty when trying to think of how to model sentences and to be intentional about using specific language; she also found it difficult to focus on the vocabulary and increase her child's phrases. By the end of the of the intervention, she said that it felt more natural to model vocabulary, yet she had difficulty modeling longer phrases. Belem reported that the intervention was difficult to implement as this was the first time she had focused on Jairo's language; however, as the intervention continued, she felt more natural and comfortable using the techniques. She indicated that setting up the play scenario was difficult. By the end of the intervention, some of the techniques were easier to implement, such as using praise, using vocabulary, and asking questions, while other techniques, such as having him use prepositions, were slightly more difficult, as he did not appear to be as engaged in the associated activity.

### **3. Mothers' Language Assessment**

Comparisons of the mother's language at the initial and final assessment revealed an interesting trend, which was related to specific language behaviors that were observed throughout the intervention. It was noted that the three mothers demonstrated inconsistent changes in their overall language behaviors from the first to the final session; however, they all changed the ways in which they interacted during play with their children. During the initial assessment, the mothers used directive speech as they interacted with their child, which meant

that they used more phrases and sentences, (e.g. “di \_\_\_\_”), but by the final assessment, these types of language patterns had dramatically decreased with all the mothers, as they focused more on using the different strategies that they were being taught.

In addition, the mothers were also more purposeful in the play in which they engaged. For example, during the initial assessment, Anna took several of the toys from the researcher’s bag, asked José with which toys he wanted to play, and would then have him label the toys. The play could be described as asking open-ended questions with a mostly adult lead. However, by the end, she would set up scenarios, such as only having José pick from a field of a few options. Celia demonstrated a similar change. During the initial assessment, Juliana had difficulty maintaining attention to play, and, as a result, play was limited to with what Juliana was willing to engage. At the final assessment, Juliana started to use other objects, such as her rug, to engage in play.

#### **a. Conclusion**

While each mother appeared to be a motivated to participate in the study, there were subtle, yet empowering, changes that each mother demonstrated from the initial to the final session. Across each case, each mother showed changes in language strategies as they played with their child, as well as in their overall play skills. Although they each recognized that it was challenging to change or modify their current language skills, each mother also adapted their language skills as the intervention progressed. Finally, each mother indicated a positive experience during the intervention and were able to reflect upon how the language strategies to use when playing with their child felt more natural by the end of the intervention.

#### **4. Mothers' Perceptions**

Looking across the mothers' interviews, four themes emerged that appeared to influence their overall experience in receiving home-based services during both EI and following the intervention: (a) collaboration, (b) role, (c) confidence, and (d) respect.

##### **a. Collaboration**

While some of the mothers experienced positive ways and ideas on how to collaborate with their EI therapist and the researcher, others also expressed negative experiences. All three mothers reported that the EI SLP did not ask what the family routines were and did not model specific techniques. In addition, the SLPs did not appear to include the moms in the sessions. For example, Anna reported this about her EI experience: “Ella le decía como mira, lo que está haciendo Diego—eso es algo que pueden hacer más tarde” [She would say, look, what Diego is doing—it's something that you can do later]. When reflecting on their experiences with the school-based SLP, the mothers reported mixed collaboration interactions. Only two of the mothers, Belem and Celia, had been receiving regular services at their local school, and only Belem reported receiving weekly homework even though she had to make requests for the work.

Following the language intervention, all three mothers reported a positive collaboration with the researcher, which led to them having a positive experience, specifically with play skills with their child. All three mothers said that they played with their child more and practiced the language strategies that were introduced to them following the sessions. For example, Anna said, “Como cuando ella no estaba, segamos usando las mismas frases que ella me enseno” [Like when she was not here, we continued using the same phrases that she taught me]. In addition, they commented on the ways in which they were able to use the materials and toys within their home for the intervention. Belem claimed, “Que me enseñó como, porque ninguno de los otros

me enseñaba como, ellos jugaban con Jairo y ya, yo veía como jugaban, pero nunca participe con el así como participe con Giselle” [That she showed me how, because none of the others showed me how, they would play with Jairo and that was it, I would watch how they played, but I never participated like I did with Giselle].

### **b. Role**

All three mothers reported that they did not have a large role with the SLP while their child received EI services; however, Belem and Celia reported fewer interactive roles than Anna. While all three mothers reported watching the sessions from afar, both Belem and Celia were asked to step in when their children exhibited difficult behaviors, and Celia reported that she was asked to translate Juliana’s speech when she was difficult to understand. For example, Celia said, “Decía que me quitara, que no le hacía caso, que por eso no le hacía caso a ella, porque ella sabía que yo la iba como a rescatar” [She would tell me to get away, to not pay attention to her, because that was why she wasn’t listening to her, because she knew that I was going to rescue her].

Following the language intervention, the direct role the mothers had with their child’s overall language development changed. They each reported that they saw themselves using the techniques as their children continued in school. Anna stated, “Que el miso que antes, yo pienso que igual, usar la misma rutina cuando el salga de la escuela para él se vista y él se lista solito” [I think that the same as before, using the same routines when he gets out of school so that he can get dressed and get himself ready]. Another change noted was in the ways the mothers viewed their own role. For example, Belem reflected on how this change had her question a cultural development:

Si estamos ayudando a tener un vocabulario mejor, y yo lo veía en los americanos en la forma que hablan con sus hijos y nosotros diferentes. Entonces ahora Giselle me enseno el modo en que uno tiene que hablar a ellos.”

[We are helping him a better vocabulary, and I see in Americans in the way that they speak to their children and how it is different from us. So Giselle taught me how we are supposed to talk to them.]

### **c. Confidence**

During their child’s previous EI experience, the mothers reported a rather negative experience that impacted them. For example, Celia reported that the SLP claimed that Juliana had difficulty during therapy because she had a short attention span—a diagnosis with which Celia did not agree. She reported, “El problema es que no le gusta los juguetes que tú le traes—yo le decía a me verdad, yo nunca le dije a ella” [The problem is that she doesn’t like the toys that you bring—I would say it to myself right, I never told her]. Belem reported that her husband had a negative experience as well: “Pues más o menos por hecho, mi esposo decía, yo siento que no le ayudan nada. Creo que le ayudamos más nosotros en estarle ayudando con las palabras que él quiere decir” [More or less for granted, my husband said, I felt that she did not help. I felt that we helped him more with the words that he would say].

This compares to the confidence levels that the families had following the intervention. The three mothers reported that they talked with their children during play and when interacting with them using toys from home. In addition, the mothers reported positive experiences when learning how to better play with their child. For example, Anna reported that the intervention had a positive impact on José: “Como cuando yo le decía a mi niño que tenía que repetir las frases y



le daba más largas y como que él estaba más seguro de el mismo” [Like when I would tell my child to repeat the phrases and he would tell me longer one, and it was like he was confident].

#### **d. Respect**

Each mother provided examples of respect that impacted their experience in both EI and within the intervention. Two of the mothers, Belem and Celia, described the types of interactions that they previously had with their SLP. For example, Celia reported the following relationship with the first SLP who was assigned to the family: “Pero la primera, al contrario decía que me quitara que no le hacía caso, que por eso no le hacía caso a ella, porque ella sabía que yo la iba como a rescatar, y no quiera yo estuviera” [But the first one, on the contrary would tell me to get away that she didn’t listen to her and that was why she didn’t listen to her, because she knew that I was going to go and rescue her, and she didn’t want me to be there]. In a similar reaction, Belem reported, “Las otras personas, hasta mi esposo me decía yo no le veo el caso en cómo le están enseñan a él” [The other ones, even my husband would tell me that he did not see the reason on how they were teaching him].

This compares to the mothers’ final experience, about which Celia reported, “Pues no, me gustó mucho como lo manejaron, y ojalá que todas las terapistas lo hacían así” [Well no, I really liked how they did it, and hopefully the other therapists do it the same way]. Compared to her EI experience, Belem was able to use the strategies she learned with her family. She said, “En la forma en como le estamos enseñando a él, yo hablo con él y a la hora que mi esposo hable, yo lo corrijo a él y ahora el me corrige a veces” [In the way that I am teaching him, I talk with him and when my husband speaks with him, I correct him and he will correct me sometimes].

## CHAPTER V

### DISCUSSION

The focus of this qualitative study was to examine the experiences and perspectives of three Mexican immigrant mothers who participated in a home-based language-based intervention. Major study findings indicated that the mothers demonstrated some changes in their overall language behaviors from the first to the final session; however, they all changed the way in which they interacted during play with their children. When examining how the mothers used the language strategies that were modeled to them, each mother reported difficulty in the implementation of the strategies during play, but they did begin to incorporate home-based material into their play. Based on the mother's perspectives of their overall experience, four factors—collaboration, respect, role, and confidence—were identified as impacting their overall experience of engaging in language-based interventions. Findings from the individual case studies and the cross-case analysis shed light on (a) changes in the mothers' language, (b) the mothers' application of language strategies, and (c) the mothers' perspectives of the intervention.

During this study, the mothers had a direct role and were able to indicate their areas of concern related to their child's language development. Not only is it important to include mothers in speech and language services, but one must consider the benefits as well, specifically when considering the use of home-based services. When using a home-based approach, the SLP needs to consider that parents are typically in the best position to identify activities that are of interest to both the child and parent (Khetani, Cohn, Orsmond, Law, & Coster, 2013). Furthermore, interventions should be individualized based on the child's developmental and functional communication needs and considerate of the families' culture and language (Kummerer, 2012). Thus, when working with culturally and linguistically diverse families, the

SLP must consider the role of the parent. For example, the SLP needs to consider the central, critical role parents have when providing services, as they are not only the experts of their children, but they are also able to help set appropriate and attainable goals in collaboration with the SLP (Kummerer, 2012).

The current study was unique in that speech and language services were not directly provided to the child; instead, specific language strategies were modeled for the mother who then practiced them with the researcher and went on to implement them with her child. This is important to note, as the mother was directly collaborating with the researcher to determine the activities and focus of the intervention. When including mothers of all backgrounds in the implementation of speech and language services, there are numerous benefits. For example, when considering a transactional model of language development (Sameroff & Chandler, 1975), both the mother's and child's behaviors are the focus of the intervention and changing the behavior of one will change the behavior of the other (Roberts et al., 2016). Not only were the mothers' behaviors addressed during the study, but they were able to reflect upon them throughout the intervention. Another benefit to consider when including the mothers in the services is that it can empower and increase their confidence (Dempsey & Dunst, 2004). Given the intimacy of this project, the mothers were able to reflect upon their own personal growth throughout the intervention.

#### **A. Changes in the Mothers' Language**

It is no surprise that research has identified a child's parent language input as an important factor to consider when examining their language learning (Suskind et al., 2016). When considering the vocabulary skills of children, the quantitative and qualitative features of the parent's input is an important consideration, as the latter can predict language learning more

than the former (Rowe, 2018). Therefore, the language exposure at home has significant impacts on a child's language development, especially when considering the needs and cultural capital of the family. In the current study, changes were observed in all of the mothers in their qualitative language with their child. However, the quantitative findings indicated that the mothers did not make drastic changes from the initial to the final assessment, such as changes in the total amount of words they used. Given these results, the complex interactions between the mothers indicated that there were more critical changes when compared to the total input. For example, the qualitative changes that were made during the study included changes in the complexity and in the types of questions and comments made over the course of the intervention and not just in the total amount of different words used. This is important to note, as the diversity of a parent's input has significant importance on the child's language skills.

Throughout the course of the intervention, the mothers made positive, but inconsistent, changes in specific areas of language, such as in modeling vocabulary. Of interest was the ways in which the mothers used the children's toys and structured play activities to teach and encourage the use of new words. For example, Belem would use Jairo's dinosaurs to describe where they were or where to place them in order to reinforce the use of prepositions. While there are specific factors, such as family socio-economic backgrounds, a parent's level of education, and parenting knowledge, that have impacts on the type of vocabulary input that a child receives from their parents (Rowe, 2018), a child's exposure to vocabulary impacts the child's academic future. Vocabulary skills are an important building block and predictors of reading and writing achievement in students (e.g. Lee, 2011). A second factor that could have impacted language interactions is that of the mother's personal background. While each mother indicated that they each had a high school education, their career options and employment histories were not

examined. As a result, it is unknown if the mothers attended a technical high school in Mexico (i.e. pre-education) which may have introduced the mothers to the importance of language development. In addition, the overall immigration status of the mothers was not addressed; therefore, it is unknown what the mother's employment was before coming into the US. Having access to this information may have provided additional context to their own personal understanding and exposure to language development.

There were notable changes noted in the manner in which the mothers spoke to their children. One specific area that had noteworthy changes was in how the mothers used directive language, such as labeling, and provided little praise. This is consistent with research that indicated that immigrant Mexican mothers may display less positive affect and praise than White mothers (Tamis-LeMonda, Sze, Ng, Kahana-Kalman, & Yoshikawa, 2013). Initially, the mothers gave explicit directives to their children that were often related to the child's behavior, which is consistent with research that has demonstrated that Latino parents have specific expectations for their children, such as the concept of *respeto*, which emphasizes the child's behavior and conformity (Cycyk & Iglesias, 2015). These traits were observed during the intervention through correcting the child's behavior or apologizing for the child if the child was unwilling to engage in the session. In addition, the mothers learned other strategies to reduce the overall frustration levels, such as commenting when their child was not engaging in play. In doing this, the message the mothers were receiving was that their child was listening to them as they modeled language.

While each mother recognized the importance of developing several language skills, such as vocabulary development, the changes in some language skills but not in others could have been a result of the mothers' focusing on only one language strategy throughout the session or intervention. In addition, the mothers may have been focused on skills that they valued within

their homes (Wing et al., 2007). For example, if the mother did not understand or agree that it was beneficial to praise her child when using a correct sentence, it would not have been a factor that the mother would have focused on using. When considering cultural perspectives of families, it is important that the SLP consider language and its overall importance in understanding social roles and behaviors (Wing et al., 2007). As a result, the mothers may have found some strategies easier to use than others because they were more aligned with their goals, which would impact the generalization of specific skills.

The mothers in this investigation also learned language skills in their native language—Spanish. This was an important factor to consider when recognizing the family’s culture, communication between family members, and the child’s eventual transfer of Spanish skills to English (Restrepo, 2007). As a result of providing the intervention in the family’s native language, the mothers were able to take the skills and practice them with the researcher in Spanish and then with their child. Modeling Spanish skills and allowing the mothers to choose their language preference is associated with the importance of *respecto* parenting practices (Calzada, Huang, Anicama, Fernandez, & Brotman, 2012). In addition, *familismo*, or the inclusion of extended family members in family routines or childrearing (Calzada et al., 2012) was also observed. While this varied depending on the family’s immigration status, this also impacted the behaviors seen during therapy. Each mother included other Spanish-speaking family members in the intervention, whether it was through modeling what had been modeled with them or telling them about the intervention. It was then noted that the extended or immediate families also worked on the skills with the child. The mothers possibly felt a level of comfort working with the researcher given her ethnic background; therefore, they could have been more receptive to modifying their behaviors when working with their child. By providing

the intervention in Spanish, the mothers used the language with which they felt the most comfortable when practicing the skills. Research has demonstrated that the mother's use of Spanish with their bilingual child revealed faster rates of Spanish vocabulary growth than when the mothers used English, while their use of English or Spanish did not impact vocabulary growth in English (Hammer, Lawrence, & Miccio, 2007). Throughout the intervention, the mothers received the message to continue to work on the child's skills in the native language of the home in order to appropriately carryover the strategies learned to their home activities. This is an important factor, as the native language spoken in the home can experience shifts, such as language loss, in bilingual children (Ebert & Kohnert, 2016).

#### **B. Play Strategies Between the Dyads**

Interactional play between a mother and child has positive benefits. These include visual and auditory functions, cognitive and verbal skills, gross and fine motor skills, as well as problem solving skills (Soedjatmiko et al., 2017). During the current study, each mother demonstrated changes in the ways in which they interacted and played with their child. As the intervention continued, each mother appeared more confident and even verbally expressed this after play sessions. For example, Anna reported that, since she saw that her child was having fun during the sessions and that he would repeat more, this helped to make modeling language more comfortable for her. This was also evident when each mother would pause and set up the play scenario before each session; it was clear that they were processing the strategies that were taught to them and the best ways to implement the techniques during play. This is consistent with EI research that indicates that families included within an intervention demonstrate positive effects, such as parent empowerment and confidence (Dempsey & Dunst, 2004). In addition, including the parent in the intervention also increases the amount of practice that the child will

receive, as the parent will continue to implement the desired behaviors even without the interventionist available (Roberts et al., 2016).

Additionally, as the intervention progressed, each mother appeared to be open to using non-toy objects (e.g. paper as a blanket) as a substitute for another object, which indicated that they were focused on engaging their child, not necessarily on the actual toys (Palacios, Kibler, Baird, Parr, & Bergey, 2015). This demonstrated that the mothers were flexible in their play with their children. As a result, when provided with different ways of interacting with their child, the mothers were more aware of the how they interacted with their child and made appropriate adjustments. They stopped asking their children to label items and instead were interactive with the toys and the ways in which they used language. In addition, they learned how to provide descriptive praise, such as describing the positive ways that the child used a language concept, instead of relying on evaluative praise or not using praise at all.

### **C. Mothers' Perspectives of the Intervention**

During this study, the mothers were engaged with and positive about the intervention. Overall, the researcher's personal repertoire with the mother's cannot be ruled out. The researcher was considerate of the mother's time, space, and sharing of information. The order of the intervention may have played into this, as the first few sessions were based on interviews and play. As a result, the mothers were allowed a safe space to discuss their previous experiences in receiving speech and language therapy. Another reason was that the mothers' concerns and needs were acknowledged and used to build the interventions around the specific needs of their child. When working with families, there are specific strategies that have been recommended when addressing the language needs of their child during home-based services. For example, Kummerer (2012) points out that a current issue SLPs face when working with CLD families is



of not developing a respectful and trusting relationship. A way to begin this process is for the SLP to consider how the SLP addresses the parent's concerns, instead of immediately addressing the child's goals (Langdon, 2008). In doing this, the SLP can also learn about the family and other important factors, such as the child's routines and daily schedule, and can respectfully begin collaboration efforts (Kummerer, 2012). In the current study, this relationship was initially established by the use of an ethnographic interview (Peredo, 2016), which allowed the mothers to voice their concerns about their child's language skills, as well as indicate their past experiences. The initial and final interview also allowed a platform for each mother to discuss their previous speech therapy experiences and reflect upon their own needs and growth throughout the intervention.

Finally, it is important to take into consideration that a child's first learning environment is at home with the mother, and this is a factor when considering the complexity of language to which the child is exposed (Palacios et al., 2015). During this investigation, each mother was given the opportunity to select not only the goals but also the play activities that they wanted to work on throughout the sessions. As a result, the mothers indicated that providing the intervention within their home was beneficial for their child. For example, Celia was thrilled that her child became engaged with toys that she had previously bought when she watched her daughter participate in EI activities with the SLP. On a similar note, Belem started to incorporate more dramatic and pretend play as she enjoyed using materials that were readily available. During the current study, the mothers were asked to pick out activities with which they or their child enjoyed playing. They were also asked to pick the location of the intervention, and ideas, such as using the backyard, kitchen, or the child's bedroom, were given as suggestions by the researcher. As a result, the mothers were able to carryover and generalize the activities once the

researcher left and continue to practice since the toys that were being brought into the home were not leaving with the researcher. This is consistent with research that supports the use of identifying language rich routines for communication, as it helps to maximize the child's motivation, opportunity, and frequency and is cognizant of the child's culture (Peña & Fiestas, 2009).

#### **D. Limitations**

This study served as a small exploratory research study that was designed to investigate the experiences of immigrant Mexican mothers and their children following a home-based language intervention. Several limitations existed that must be addressed. Given the small population of the study, generalizability is not possible. There are two factors to consider in this specific study; one is the nature of qualitative studies, and the second is the small population size. The generalizability of quantitative studies is not comparable to that of qualitative studies, but the knowledge that emerges from qualitative studies can be helpful with specific populations or situations (Tracy, 2010). These case studies were carefully developed, and there were multiple sources of data collected and triangulated from each, which enhanced each case (Miles et al., 2013). The second factor was the small scope of this study. Given the small participant pool, it would be impossible to claim that the results of the investigation would benefit all Latino mothers and their children. Nevertheless, the results can help to guide practices that can be successful when working with Latino families, specifically when setting language goals and addressing the generalization of language skills.

An additional factor that affected this study was the amount of time spent with each family. Since there is limited research that guides SLPs for recommendations in the intensity, duration of services, or in the delivery of services (e.g. Cirrin & Gillam, 2008), this intervention

was designed to be home-based and to address the needs of the individual family through the mother. A specific set of skills were targeted in a short period compared to many skills over a long time (e.g. Marulis & Neuman, 2013); however, while the focus of the intervention remained the same, the language strategies often changed (e.g. the use of praise).

Another limitation that existed in this study was the pool of participants. The study may not represent the typical family. One contributing factor was that all the families that enrolled already had experience in receiving EI services. Given this background in receiving home-based services, they may have been more willing to participate in the investigation, as they had already gained experience in having an interventionist come to their home. In addition, the financial incentive, while relatively small, cannot be ruled out as a possible factor related to their willingness to participate.

The final limitation that affected the investigation was maturation and history. Two of the mothers were also receiving home-based services to provide the child with additional developmental support. Therefore, it is unknown whether any changes in the mother's skills were a result of the intervention or from the additional services the family was receiving.

#### **E. Implications for Research**

While research has examined home-based language interventions and successful ways to implement interventions at home with families (e.g. Roberts & Kaiser, 2015), there is a gap in the literature that addresses the perspectives of CLD families and their children with disabilities, specifically Mexican immigrant mothers (e.g. Ijalba, 2016). In addition, there is an even larger dearth of studies that examine home-based interventions with Mexican immigration populations (Kummerer, Lopez-Reyna, & Hughes, 2007). Furthermore, studies that examine successful collaborations between culturally and linguistically diverse families and SLPs provide a better

understanding of how to implement responsible and culturally relevant language interventions to a historically marginalized group. This study was a starting point in examining how to provide collaborative speech and language services within the home and to provide specific ways in which to implement this practice. More studies are needed to investigate incorporating culturally linguistic mothers' perspectives when receiving speech and language services, as well as using culturally based routines and materials. Specifically, a follow-up study could examine the mothers' own personal reflections throughout the home-based intervention. The mothers would watch the video recording of their interactions with their children playing and use a modified checklist to comment on areas of strength and need, as well as to document specific ways that they were able to generalize the taught strategies when working with their child at home. In addition, follow-up for the family, through phone calls or home visits every three months following the study would be best to provide supportive feedback to the families as the child's language demands grow both academically and socially.

Limited studies have addressed the academic preparation of SLPs in their coursework (e.g. Caesar, 2013), but even fewer have examined the experiences of a Latina mother's roles when working with SLPs (e.g. Kummerer & Lopez-Reyna, 2006). Further research would benefit modeling successful academic coursework or clinical experiences that would provide a better understanding of how to embed the needs of culturally and linguistically diverse families. As previously indicated, given the high percentage of practicing SLPs who identify as White (ASHA, 2017a) and SLPs who report that their academic training did not prepare them to work with culturally and linguistically diverse populations (e.g. Caesar & Kohler, 2007), it would benefit the field to have a better understanding of responsible ways to embed culturally relevant topics into preservice programs. In doing so, academic programs can begin to have a better

understanding of how to infuse coursework across their programs so that students continue to have a better understanding of culturally and linguistically diverse topics. Studies that examine the perspectives of graduate students and faculty and the overall satisfaction of SLPs working with culturally linguistically diverse populations require additional attention in the literature.

Future research would also benefit from addressing culturally relevant strategies when working with culturally and linguistically diverse families and the family's ability to generalize the taught strategies. For example, studies that examine culturally relevant literacy tasks would benefit families and educators in order to have a better understanding of how to embed practices that can be carried over in the home. Continued research that examines the perspectives of the families can build upon resources to support culturally and linguistically diverse families (Gonzales et al., 2018). As this population continues to increase, it is imperative that families have buy-in from the SLPs working on the child's communication needs in order to use effective strategies from which both the clinician and family would benefit. Continued research that examines the perspectives of culturally and linguistically diverse families can further examine how families benefit from speech and language services, as well as the challenges that families face (Núñez, & Hughes, 2018). When families' perspectives are acknowledged and considered, it is then that a programs' strengths and weaknesses can reveal how families can truly benefit from culturally appropriate services.

#### **F. Implications for Practice**

Implications for practice include the need for culturally competent services and preservice and academic coursework that addresses working with culturally and linguistically diverse families. When considering the implementation of speech and language services, regardless of the families' background, the idea is that services are family-centered, collaborative

in nature, and considerate of the family's activities and routines (Fleming, Sawyer, & Campbell, 2011). In doing so, the child should learn to generalize the new skills and learn a variety of language facilitation strategies to support the child's communication skills (Roberts et al., 2016). When considering the needs of culturally and linguistically diverse families, the therapy services that are provided need to be considered. As indicated before, given the cultural homogeneity of practicing SLPs in the US (ASHA, 2018), many of their practices may reflect the framework of American autonomy and independence, which is a highly desirable trait that frees the individual from others in both action and thought (Rogoff, 2003). As shown in the literature, these ideals may not reflect the values of Mexican immigrant mothers. One consideration is that of cultural differences and the understanding of independence and autonomy. A lack of understating one's cultural beliefs may impact the interactions that one has with others. While we know that all children learn rich language when engaging in routines and experiences at home, it is important to consider that this is most effective when the interventions consider the cultural and linguistic routines of the family (Kummerer, 2012). In addition to considering the cultural and linguistic background of the family, SLPs also need to consider the roles, goals, behaviors, wishes, and overall inclusion of families (Roberts et al., 2016). While specific to practices in EI, this can also be applied when providing suggestions for families to carryover within their home if the child is receiving services within a school setting or at a private clinic.

Continued coursework should not only address an individual's ability to work with a family that has a different background from them, but also to work on their biases and identify how those might impact the families serviced. The American Speech and Hearing Association upholds that practicing SLPs have a deep understanding of cultural competence, which is defined as the individual's ability to implement services that consider the diversity and cultural variables

between the provider and clinician but are not limited to factors, such as one's social economic status, age, gender identify, national origin, race, and religion (ASHA, 2017b). Although ASHA and the accrediting bodies in the field have recommended that coursework embed topics to ensure that clinicians are culturally competent (Council for Clinical Certification in Audiology and Speech-Language Pathology, 2013), a framework does not exist on how to implement this (Halvorson-Bourgeois, Zipse, & Haynes, 2013). Therefore, it would be beneficial for students to have an understanding of their own cultural belief systems and how these may differ from that of others. In doing so, students can have a better understanding of how their understanding of areas such as praise can vary across different cultures. This way, a student can model the way they understand praise but also accept the mother's notion of what praise means to them.

In addition, when asked to rate their ability to provide culturally competent services to clients of culturally and linguistically diverse backgrounds, only 8% indicated that they were "very qualified" to provide such services (ASHA, 2016). These factors may be a result of a lack in graduate school training (Quach & Tsai, 2017), so it is imperative that culturally and relevant practices are embedded across coursework to preservice professionals. In embedding a pluralistic education model with various perspectives, an awareness of one's personal biases and perceptions can be further addressed (Franca & Harten, 2016). Areas that can be addressed include discussing immigration patterns to the US and how the role of SLP may need to be adapted in order to meet the needs of families. In addition, conversations that continue to examine language difference and disorder of English speakers and ELs to address under and over referrals is important. An area of need is coursework that addresses collaboration of EI activities with families and professionals (Barton, Moore, & Squires, 2012), as it is important to note that the coursework is traditionally embedded throughout a semester-long course when working with

this population. Specific suggestions include reviewing case studies or considering the experiences of CLD families and their experiences in receiving services. Another idea would be to include perspective taking, in where students would have the opportunity to read research outside of the field, such as disability studies where students can reflect on the experiences that can have an impact on their own practice. In addition, the theoretical training of SLPs needs to also be taken into consideration. SLPs are trained in the medical model, which has a focus on identifying and treating a language disorder (ASHA, 2008). This compares to an educational model, which focuses on the interventions that are long-term, such as developing independence (Barton et al., 2012). Therefore, it is imperative that academic programs teach the purpose of both models and impacts that they can have on clients.

Another important factor to consider is the clinician's placement during preservice programs (Sheepway, Lincoln, & McAllister, 2014) and how to imbed cultural competence practices when directly working under the supervision of faculty. For example, as Barton and colleagues (2012) note, field experiences should include various opportunities in preservice programs when learning how to provide support to young children, as clinicians have reported low levels of competency when working with this specific population (e.g. Campbell, Chiarello, Wilcox, & Milbourne, 2009).

In conclusion, the mothers in this study demonstrated many positive changes in their overall language use when provided with specific models and were able to provide specific descriptions as to how the intervention benefited their child when interacting, specifically when playing within the dyad. As a result, the mothers described a positive experience throughout the intervention, which, in turn, can encourage carryover as the child continues on in their academic endeavors. Not only did the mothers experience bonding time with their child, but overall, there



was a sense of empowerment in practicing various ways of increasing their child's communication skills in a known and comfortable environment. The hope is that the mothers continue to feel that they are the experts of their children and are reassured when they can describe the ways in which they interact with their child at home.

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## **APPENDICES**

## Appendix A

### Approval Notice

#### Initial Review (Response to Modifications)

March 1, 2018

Giselle Nunez, MS

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

**RE: Protocol # 2017-1293**

**“A home-based language intervention with Mexican immigrant mothers and their children”**

Dear Ms. Nunez:

**Please note that stamped .pdfs of all approved recruitment and consent documents have been uploaded to OPRSLive, and can be accessed under “Approved Documents” tab. Please remember to use only those approved documents to recruit and enroll subjects into this research project. OPRS/IRB no longer issues paper letters or stamped/approved documents.**

Your Initial Review (Response to Modifications) was reviewed and approved by the Expedited review process on February 27, 2018. You may now begin your research

Please note the following information about your approved research protocol:

**Protocol Approval Period:** February 27, 2018 - February 27, 2019

**Approved Subject Enrollment #:** 8

**Additional Determinations for Research Involving Minors:** The Board determined that this research satisfies 45CFR46.404, research not involving greater than minimal risk. Therefore, in accordance with 45CFR46.408, the IRB determined that only one parent's/legal guardian's permission/signature is needed. Wards of the State may not be enrolled unless the IRB grants specific approval and assures inclusion of additional protections in the research required under 45CFR46.409. If you wish to enroll Wards of the State contact OPRS and refer to the tip sheet.

**Performance Sites:** UIC

## Appendix A (continued)

### **Research Protocol(s):**

- a) Initial Review Application: A Home-based language intervention with Mexican immigrant mothers and their children, 02/26/2018

### **Recruitment Material(s):**

- a) Flyer (English), Version 1, 12/20/2017
- b) Flyer (Spanish), Version 1, 12/20/2017
- c) Professional Recruitment (English), Version 1, 12/20/2017
- d) Phone Recruitment (and Screener) Spanish, Version 1, 12/20/2017
- e) Phone Recruitment (and Screener) English, Version 1, 12/20/2017

### **Informed Consent(s):**

- a) Parent Consent (and permission) English, Version 4, 02/26/2018
- b) Parent Consent (and Permission) Spanish, Version 4, 02/26/2018
- c) A waiver of documentation (verbal consent over the phone/no written signature) and an alteration of consent have been granted for eligibility screening purposes only under 45 CFR 46.117(c)(2) and 45 CFR 46.116(d) (minimal risk; verbal consent will be obtained for screening; written consent will be obtained at enrollment; screening data will be destroyed for subjects who are ineligible or who decline to participate),
- d) A waiver of documentation of assent has been granted under 46.117(c)(2), [minimal risk, verbal assent to participate will be obtained from the child in mother's presence prior to each 10-minute activity; child's dissent (child beginning to cry or refuse) will result in stopping the activity session and resuming the play at a later time]. A waiver of documentation of assent has been granted under 46.117(c)(2), [minimal risk, verbal assent to participate will be obtained from the child in mother's presence prior to each 10-minute activity; child's dissent (child beginning to cry or refuse) will result in stopping the activity session and resuming the play at a later time].

Your research meets the criteria for expedited review as defined in 45 CFR 46.110(b)(1) under the following specific category(ies):

(5) Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for non-research purposes (such as medical treatment or diagnosis)., (6) Collection of data from voice, video, digital, or image recordings made for research purposes., (7) Research on individual or group characteristics or behavior (including but not limited to research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

### Appendix A (continued)

**Please note the Review History of this submission:**

Receipt Date	Submission Type	Review Process	Review Date	Review Action
11/30/2017	Initial Review	Expedited	12/05/2017	Modifications Required
01/02/2018	Response To Modifications	Expedited	01/14/2018	Modifications Required
01/19/2018	Response To Modifications	Expedited	02/03/2018	Modifications Required
02/09/2018	Response To Modifications	Expedited	02/27/2018	Approved

Please remember to:

→ Use your **research protocol number** (2017-1293) on any documents or correspondence with the IRB concerning your research protocol.

→ Review and comply with all requirements on the guidance,

**"UIC Investigator Responsibilities, Protection of Human Research Subjects"**

(<http://research.uic.edu/irb/investigators-research-staff/investigator-responsibilities>).

**Please note that the UIC IRB has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.**

**Please be aware that if the scope of work in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.**

We wish you the best as you conduct your research. If you have any questions or need further help, please contact OPRS at (312) 996-1711 or me at (312) 413-1518. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Alma Milat, BS

**Appendix A (continued)**

IRB Coordinator, IRB # 2  
Office for the Protection of Research  
Subjects

Enclosure(s): Following approved recruitment and consent documents have been uploaded under “approved documents” tab in OPRSLive:

**1. UIC Investigator Responsibilities, Protection of Human Research Subjects****2. Informed Consent Document(s):**

- a) Parent Consent (and Permission) Spanish, Version 4, 02/26/2018
- b) Parent Consent (and permission) English, Version 4, 02/26/2018

**3. Recruiting Material(s):**

- a) Flyer (English), Version 1, 12/20/2017
- b) Flyer (Spanish), Version 1, 12/20/2017
- c) Professional Recruitment (English), Version 1, 12/20/2017
- d) Phone Recruitment (and Screener) Spanish, Version 1, 12/20/2017
- e) Phone Recruitment (and Screener) English, Version 1, 12/20/2017

cc: Norma Lopez-Renya, Special Education, M/C 147  
Marie Tejero Hughes, Faculty Sponsor, Special Education, M/C 147

## Appendix B

### Professional Letter

Do you know of a Mexican family who has a child that is receiving speech and language services through their school district? If so, I would like to work with the mother and child during home-based naturalistic services. I am a doctoral student at the University of Illinois-Chicago and a bilingual speech language pathologist. I am interested in working with Mexican immigrant mothers and their children in learning about their experience when receiving speech and language services within their homes. Their feedback will help us get a better understanding of how to provide speech and language services within naturalistic environments.

If you know of families that would like to be a part of this University of Illinois at Chicago research study, they would participate in 3 audiotaped interviews that would last a maximum of 45 minutes each and 10 video and audiotaped language intervention sessions in their homes that would last a maximum of 35 minutes each that will be audio and video recorded. To show my appreciation for their participation in the study, a total of \$150 in gift cards may be available.

Families are eligible if to participate if their child:

1. Is between 3 years and 4 years 11 months of age;
2. Is eligible to attend a preschool program in a general education or blended classroom setting;
3. The mother is an immigrant of Mexico;
4. Spanish is the primary language spoken in the home;
5. Receives speech and language services by at school a speech language pathologist under an Individual Education Plan (IEP) to address language delays

In addition, I am looking for children who have difficulty with their language skills, such as using phrases and sentences, with their vocabulary skills or in answering questions. In addition, the child must not have a diagnosis of a hearing or visual impairment, autism, or a cognitive impairment and can communicate verbally.

I have attached the flyer if you could hand out it out to the families you think would be interested in this study in order to gauge their interest in this study. If you would like a hard copy, please contact me so that I can send them to you. Families can contact me directly by calling or emailing me if they are interested.

Thank you!

Giselle Núñez, M.S. CCC-SLP

Cell:

email:

## Appendix C

### Data Collection Sources

#### *Research questions and data collection*

Research Questions	Data Collection
1. Do Mexican immigrant mothers increase the quantity and quality of their speech when provided with a language-based intervention in Spanish targeting their preschool aged children's vocabulary and expressive language skills at home?	<ul style="list-style-type: none"> <li>• Mother Language Analysis</li> <li>• Field Notes</li> </ul>
2. To what extent and in what ways do Mexican immigrant mothers of preschool aged children who have language difficulties change in their use of language interactions with their child during a language-based intervention within the home?	<ul style="list-style-type: none"> <li>• Language Event Checklists</li> <li>• Field Notes</li> </ul>
3. What are Mexican immigrant mothers' perceptions of using language-based strategies during home activities and routines before and after completing a language-based intervention using materials within the home?	<ul style="list-style-type: none"> <li>• Language Perception Interviews</li> </ul>

## **Appendix D**

### **Mother Consent Form**

#### **University of Illinois at Chicago**

#### **A home-based Language Intervention with Mexican Immigrant Mothers and Their Children**

You are being asked to participate in a research study. Researchers are required to provide a permission/consent form such as this one to tell you about the research, to explain that taking part by you is voluntary, to describe the risks and benefits of participation, and to help you to make an informed decision. You should feel free to ask the researcher any questions you may have.

Principal Investigator Name and Title: Giselle Núñez, Doctoral Student

Address and Contact Information: 1040 W. Harrison Ave. Chicago, IL 60607

Department and Institution: Special Education, University of Illinois at Chicago

#### **Why am I being asked?**

I am looking to investigate how four immigrant Mexican mothers use language-based strategies taught to them during a language based intervention. You and your child are being asked to participate in a research study because you have expressed an interest in the study. During the screening you indicated that your child is between the ages of 3 years and 4 years 11 months of age and that your child is able to communicate using phrases in sentences. In addition, your child is eligible to be placed or currently in a blended or general education preschool setting and is receiving speech and language services at their school from a speech language pathologist under an Individual Education Plan (IEP), and your child does not have a diagnosis of hearing or visual impairment, autism, or a cognitive impairment. Finally, both you and your child primarily speak Spanish in your home and you have immigrated from Mexico. Ultimately, the knowledge gained from this study can help me to understand and offer insight on how to provide language-based interventions in a naturalistic and authentic setting with Latino families.

#### **What is the purpose of this research?**

The purpose of this study will be to explore how immigrant Mexican mothers use the strategies modeled to them during language-based interventions in a naturalistic and authentic setting. I am interested in seeing if this intervention will enhance mother and child language during home-based interactions. A further interest is to investigate how immigrant Mexican mothers perceive the use of language-based strategies during home activities and routines before and after completing language-based interventions.



## **Appendix D (continued)**

### **What procedures are involved?**

The study takes place up to 13 weeks in your home. During that time, you will be involved in interviews and you and your child will participate in an intervention.

- **Interviews**

You will be participating in three separate interviews. The interviews will be scheduled at three different times and dates in a location selected by you. The interviews will take about 45 minutes and each interview will be recorded. The focus of the interviews is to have a better understanding of your experiences with home-based language interventions.

- **Intervention**

You and your child will be participating in ten language-based interventions in your home with your child. The session times will be scheduled by you. Each session will be 35 minutes and will be audio and video recorded. During the session, language strategies will be modeled to the mother and the mother and child will play together using home-based routines and materials. At the end of the session, the researcher and parent will then talk about the experience.

- **Additional Information**

During the second interview, you will be asked to bring your child's IEP paperwork to review it together

### **What are the potential risks and discomforts?**

To the best of my knowledge, all things that you will be doing in this study have no more risk of harm than the risks of everyday life. You may feel uncomfortable answering some questions during the interviews or during the intervention sessions, but you can choose not to answer the questions. In addition, the location of the interventions, in your home, may cause additional discomfort; however, you will be able to select where the sessions take place in your home and the types of activities that will occur during the interventions. I will mask all identifiers to the best of my ability to keep your family identity confidential.

### **Are there benefits to taking part in the research?**

This study is not designed to benefit you directly. There are no direct benefits to the participants, but the information could help gain insights into benefits, satisfaction, and involvement that immigrant Mexican mothers and their children have experienced when receiving language-based interventions in naturalistic and authentic settings. The study results may be used to help other people in the future.

### **Can I be withdrawn from the study?**

The study is up to a total of 13 weeks, and the participants are being asked to participate in 10 interventions. If you have to miss a session, it can be made up at time that is convenient for your family. However, if you miss multiple sessions, more than 3, and an attempt to reschedule the

## **Appendix D (continued)**

session(s) is unsuccessful within two weeks of each missed session, you will be withdrawn from the study.

### **What other options are there?**

You and your child have the option to not participate in this study. Also, if you do not want to be in this study, you are free to withdraw your consent.

### **What about privacy and confidentiality?**

The people who will know that you are a research subject are members of the research team. Otherwise information about you will only be disclosed to others with your written permission, or if necessary to protect your rights or welfare or if required by law.

Study information which identifies you and the consent form signed by you may be looked at and/or copied for checking up on the research by: UIC OPRS and the State of Illinois auditors.

There is a possible risk of the research is that your participation in the research or information about you might become known to individuals outside of the research. I will be careful to keep your answers to the study confidential and private. Your name will not be used in the study as I will delete your name on all items and give all information a code number. I will keep all information collected about you locked up and all electronic information in password protected files. The master list with your name and code number will only be electronic and password protected. Once all information is collected the master list will be destroyed. Any link between your real name and the ID code that will be assigned to you will be destroyed at the end of data analysis. The video recording files will be stored at the UICbox.com and will be coded with a number and the master list linking the names with codes will be stored separately in an electronic password protected profile. The video will only be viewed by the researchers and once the data has been analyzed, it will be destroyed and will only be viewed by the researchers. No one else will have access to the video, as it will be stored in a password protected drive. The audio recordings will be transcribed by the researcher following data collection and will be destroyed following transcription. Both the audio and video files will be stored on a UICbox.com online folder, which is password protected, and each file is also password protected. The audio will be destroyed once the tapes are transcribed and will not contain the names of you or your child.

If you or your child disclose actual or suspected abuse, neglect, or exploitation of a child, or disabled or elderly adult, the researcher or any member of the study staff must, and will, report this to Child Protective Services (e.g. Department of Family and Human Services), Adult Protective Services, and/or the nearest law enforcement agency.

### **What are the costs for participating in this research?**

There are no costs to you for participating in this research.

### **Will I be reimbursed for any of my expenses or paid for my participation in this research?**

## Appendix D (continued)

There are no reimbursements for participating in this study, but you will be offered gift cards valued up to \$150 for your time. You will receive three separate \$50 gift cards, one after the first two interviews and intervention session, a second after the eighth intervention session, and the last one at the final interview.

### **Who should I contact if I have questions?**

The researcher conducting this study is Giselle Núñez. If you have a question later, you can contact her at [nunez@uic.edu](mailto:nunez@uic.edu) or 708.325.XXXX. You can also contact her University of Illinois at Chicago advisor, Dr. Marie Tejero Hughes, [marieth@uic.edu](mailto:marieth@uic.edu) or 312.413.1623 if you have questions.

### **What are my rights as a research subject?**

If you feel you have not been treated according to the descriptions in this form, or if you have any questions about your rights as a research subject, including questions, concerns, complaints, or to offer input, you may call the Office for the Protection of Research Subjects (OPRS) at 312-996-1711 or 1-866-789-6215 (toll-free) or e-mail OPRS at [uicirb@uic.edu](mailto:uicirb@uic.edu).

### **Remember**

Your participation in this research is voluntary and you and your child can withdraw from the study at any time. Your decision whether or not to participate will not affect your current or future relations with the University or with the community center. If you decide to participate, you are free to withdraw at any time without affecting that relationship.

### **Consent to Quote from Interview**

We may wish to quote you from the interview in the presentations or articles resulting from this work. A pseudonym (fake name) will be used in order to protect your identity and that of your child.

Initial one of the following to indicate your choice:

\_\_\_\_\_ (initial) I agree to allow direct quotes from my interviews. Our identity will be protected.

\_\_\_\_\_ (initial) I do **not** agree to allow direct quotes from my interviews.

Initial the following statements for which you agree:

\_\_\_\_\_ **Statement of Consent:** I have read (or someone has read to me) the above information. I have been given an opportunity to ask questions and my questions have been answered to my satisfaction. I agree to participate in this research. I will be given a copy of this signed and dated form.

**Appendix D** (continued)

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Signature

---

Date

---

Name (printed)

## Appendix E

### Family Values and Activities Interview

The purpose of the Family Values and Activities Interview is for me to gain a better understanding of (child's name) and your family. This will be an informal conversation about your family, (child's name) history, personality, and strengths, and your goals for your child. You can choose what information you want to share. This information will be treated with respect and confidentiality. You do not have to share any information with me that you wish to keep private and you can choose not to answer any questions. The interview will take about an hour, and I will be audio recording it. I will also be taking notes while we are talking of some of the important things that you are saying. This will help me to plan out the interventions for (Child). I will be happy to share them with you. Once I am done transcribing the tape, I will destroy the tape.

1. Tell me about your family.
  - a. Who lives in the home?
  - b. Tell me about your extended family
  - c. Are there other children in the family?
  - d. Where does (child) fall in the birth order?
  
2. Who takes care of or parents (child)?
  - a. Who do you talk to or go to for parenting advice?
  
3. What are your beliefs about parenting young children?
  - a. How should (child) behave at home?
  - b. How should (child) behave in the community?
  - c. What are your expectations for (child) for (napping, eating, toilet training?)
  
4. What are your strengths as a caregiver?
  
5. What have been some significant life events for (child)?
  - a. What prompted you or concerned you to have your child evaluated?
  - b. Have there been any major illnesses or hospitalizations?
  - c. Tell me about your pregnancy with (child)
  
6. Tell me about (child)
  - a. How would you describe (child's) personality?
  - b. What are some things that (child) likes?
  - c. What are things that (child) dislikes?
  - d. What are (child's) strengths?
  
7. Tell me about your support system
  - a. Besides (name people mentioned), are there other individuals that have been supportive?
  - b. Are there other things or systems that are supportive?

### Appendix E (continued)

8. Show mom the “family activities” table. Tell them that these are some examples of activities that families do with their children.

- a. Ask: Please add additional activities not included in the chart
- b. Please put a star next to the activity that is important to the family
- c. Please put a star next to each home activity that they do with their child 3 times a week or a community activity they do once a week
- d. Please put a star next to an activity that is enjoyable for their child or challenging to their child and something that they would like to work on
- e. Please circle any activity that have 2 stars around it
- f. For each circled activity, who participates in it?
- g. For each circled activity, how does (child) participate in it?
- h. For each circled activity, if you can change one thing about it, what would it be?

9. What are some goals for your child?

- a. What would you like to get out of participating in this study?
- b. What have been some successful interventions for your child?
- c. What qualities did your child’s favorite therapist or teacher have?
- d. Is there anything else you would like to share?

End of interview: Summarize the interview, emphasize the positives and thank the caregiver for their time.

**Family Activities Chart**

<b><u>Play Activities</u></b> <ul style="list-style-type: none"> <li>• Play with toys</li> <li>• Sensory play (sand, water)</li> <li>• Dress up play</li> <li>• Outdoor play</li> </ul>	<b><u>Community Activities</u></b> <ul style="list-style-type: none"> <li>• Going to the park</li> <li>• Going to the grocery store</li> <li>• Going to a restaurant</li> <li>• Visiting friends and family</li> <li>• Going to a religious or spiritual ceremony/service</li> </ul>	<b><u>Caregiving Activities</u></b> <ul style="list-style-type: none"> <li>• Cooking/preparing meals</li> <li>• Setting the table</li> <li>• Eating meals</li> <li>• Putting shoes on/off</li> <li>• Bath</li> <li>• Dressing/undressing</li> <li>• Brushing hair</li> <li>• Brushing teeth</li> </ul>
<b><u>Academic or Pre Academic Activities</u></b> <ul style="list-style-type: none"> <li>• Reading books</li> <li>• Listening to music</li> <li>• Singing songs</li> <li>• Dancing</li> <li>• Playing musical instruments</li> <li>• Puzzles</li> <li>• Games</li> <li>• Drawing</li> </ul>	<b><u>Chores</u></b> <ul style="list-style-type: none"> <li>• Feeding pets</li> <li>• Sweeping/Vacuuming</li> <li>• Doing laundry</li> <li>• Picking up the mail</li> <li>• Cleaning dishes</li> </ul>	<b><u>Other Activities</u></b>

• Writing		
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## Appendix F

### Fidelity Checklist

**Participant ID:**

**Date:**

**Session number:**

**Activity description:**

**Implementation Checklist:** For each activity, please check in 'yes' or 'no' to indicate if the activity was completed during the intervention period. Write down the time reported during which the activity was completed. Use the notes column to comment on the activities observed.

Yes	No	Activity	Time reported	Notes
		1. Ask the mother how using the language-based strategy felt during the week		
		2. The interventionist asks the mother if she has any questions about the session		
		3. The interventionists listens to what the parents says regarding parent's concerns or comments		
		4. Parent's concerns or comments are addressed and/or validated		
		5. Interventionist recaps the topic and purpose of the session based on mother's concerns		
		6. Interventionist lets parent make the decision about activity using an activity selected by the mother		
		7. Interventionist offers suggestions if mother has difficulty thinking of ideas		
		8. Interventionists models at least one language-based strategy using naturalistic materials or activity		
		9. The language strategy is modeled to the mother		



**Appendix F** (continued)

		10. The mother and child complete language strategies together		
		11. Interventionist does not engage during the dyadic interaction		
		12. Interventionist does not provide advice or feedback unless mother requests it as a way to expand		
		13. Interventionist provides feedback based on the session		
		14. Interventionists comments on the specific strategies that parent used during the activity		
		15. The mother is asked for her own feedback after the session		
		16. The mother is asked about possible activities for the following session		

## Appendix G

### First Parent Interview

Welcome and thank you for agreeing to participate in this interview. I would like to hear about your experiences and opinions regarding language use during home-based routines. As I mentioned before, all information will be confidential. You will be audio recorded and the audio recording will be deleted as soon as the transcripts are completed. The interview will take about 30 minutes.

1. I would like to know more about activities that you engage in with your child and activities that your child enjoys. What are activities that you and your child look forward to doing together? Probe: What are some activities that you enjoy doing as a family? What are some of your child's favorite toys?
2. Can you describe any concerns you may continue to have with your child's speech and language skills?
  - 2.1 How do you think that this may impact your child in the future?
3. I would like to hear about your experience within Early Intervention. How was your family referred to Early Intervention services? Probe: What services were you receiving? What age was your child when he/she started Early Intervention? How long did you receive services? How long did it take to receive services? How often did you receive services?
  - 3.1 What did a typical session look like?
  - 3.2 What did you find beneficial about the services? What were some weaknesses?
4. I would like to know about your participation during therapy. How was your family engaged or involved with the therapists during a typical early intervention sessions?
  - 4.1 How would you describe the interactions that you had with your therapist during and after the sessions? Probe: Were you consulted on your opinion or asked what your routines were?
  - 4.2 How were the techniques modeled for you in order to increase your child's language skills?
5. What suggestions did your early intervention therapist offer to help develop your children's language skills at home following the intervention sessions?
  - 5.1 What suggestions have been the most successful?
  - 5.2 How have you been able to use home-based routines in order to increase your child's language skills?
6. What are your strengths or areas of need when playing with your child? Probe: How have you been able to carry over the activities that were taught to you during early intervention?
7. How has your understanding of using language strategies during home-based routines and materials changed since receiving early intervention services?

**Appendix G** (continued)**Demographic questions:**

I have some demographic questions to ask you. In asking these questions, I am able to have a better understanding of the families that I am interviewing and can describe the families in study.

- a) How many people live with you and your child? How many adults? How many children (under 18)?
- b) Can you tell me what level of education you have completed?
- c) Are you currently employed? If so, what is your job?
- d) If you are in a relationship, what is your partner's job?
- e) How would you describe the demographics of your neighborhood?
- f) How would you describe your family's background? racially? native language?

## Appendix H

### Final Parent Interview

Welcome and thank you for agreeing to participate in this interview. I would like to continue to hear about your experiences and opinions regarding your use of language during home-based routines. As I mentioned before, all information will be confidential. You will be audio recorded and the audio recording will be deleted as soon as the transcripts are completed. The interview will take about 30 minutes.

1. I would like to know about your thoughts during the past few weeks of interventions. Tell me about your overall experience? It is important to continue to improve the intervention.
  - 1.1 How would you describe the ways you engaged with the interventionist during the intervention sessions?
  - 1.2 How would you describe the interactions that you had with your child during the sessions? after the sessions?
  - 1.3 How were you able to use the modeled techniques after the sessions with your child? Probe: Can you give me some examples?
  - 1.4 How would you describe the interventions that were provided in your home using your routines and materials? Probe: What did you find to be beneficial? Unhelpful?
2. What suggestions and ideas did you find to be helpful in order to develop your children's language skills at home?
  - 2.1 What suggestions have you found to be the most successful with your child? Probe: Describe one or two times when you have used the suggestion?
  - 2.2 How have you been able to incorporate home-based routines in order to increase your child's language skills? Probe: Can you give me a couple specific examples?
  - 2.3 Has there been anything that has prevented you from being able to use the strategies?
3. How do you see yourself using the activities that were modeled during the intervention in the future?
4. How do you see yourself using the techniques or activities as your child continues in school?
5. How has your understanding of using language strategies during home-based routines and materials changed over the course of the intervention?
6. How would you describe your strengths or areas of need when playing with your child? Probe: How have you been able to carry over the activities that were taught to you during early intervention?

## Appendix I

### Child Demographics and Educational Supports Form

**Participant ID:**

**Date:**

**Session number:**

**Activity description:**

Participant details	Notes
Date of the IEP	
How long the child has been receiving services	
Type of special education support	
Amount of special education support per area	
Type of classroom child attending	
Speech and language assessments used	
Scores on speech and language assessments	
Child's strengths on language assessment	
Child's area of need on language assessment	

## Appendix J

### Language Event Checklist

**Participant ID:**

**Date:**

**Session number:**

**Activity description:**

Behavior observed	Tally	Notes
Praise		
Asking child questions		
Offering child verbal choices		
Use of open-ended questions		
Modeling of expanded sentences		
Use or teaching of a new vocabulary word		
Expansion of the child's language		
Comment		
Imitate		
Label		
Number of verbal turn-taking during session		
Number of verbal imitation (mother)		
Other		

## Appendix K

### Phone Recruitment

#### **A home-based language intervention with Mexican immigrant mothers and their children**

1. Thank you so much for your interest in this study. My name is Giselle Núñez, and I am a doctoral student at the University of Illinois at Chicago and a bilingual speech language pathologist for the Chicago Public Schools. The purpose of this study is to see if this intervention will enhance mother and child language during home-based interactions. A further interest is to investigate how immigrant Mexican mothers perceive the use of language-based strategies during home activities and routines before and after completing language-based intervention. The study consists of 3 separate audio taped interviews and 10 language-based sessions, that will be both audio and video taped, and is up to 13 weeks. It was developed to work with immigrant Mexican mothers and their children to learn ways to develop the expressive language and vocabulary using home-based naturalistic environments. In addition, the study seeks to learn more about your perspective on the how to use language during routines at home.
2. Is it ok if I ask you a couple of questions to make sure you qualify to enroll in this study?
3. Is your child between 3 years and 4 years 11 months of age?
4. Is your child eligible to attend a preschool program in a blended or general education setting?
5. Does your child receive speech and language services by at school a speech language pathologist under an Individual Education Plan (IEP) to address language delays?
6. Does your child have difficulty with saying phrases and sentences, with their vocabulary skills and with answering questions?
7. Does your child have a diagnosis of a hearing or visual impairment, autism, or a cognitive impairment?
8. Is Spanish the primary language spoken in your home by you? By your child?
9. Are you an immigrant of Mexico?
10. Does your child communicate verbally through the use of words or phrases?

**If NOT Eligible:** If the participant answers no to 1 or more questions, then proceed say:

**Appendix K** (continued)

Thank you so much for your time. Unfortunately, you are not eligible to be a part of the study because you do not meet all the criteria, thank you for your interest.

**If Eligible:** If the participant answers no to question 7 and yes to all other questions, then say:

You are eligible to be a part of the study. The next step is for us to meet so that I will go over the consent, the research tasks and interventions with you. At that time you will sign the paperwork to give permission to be a part of this study, and complete the first interview. When we meet, I will answer any questions that you have regarding this study. At that time, if you agree, I will ask you to sign the consent and then we can proceed and do the first interview. In addition, there will be three separate interviews that will last 45 minutes. After the first 2 interviews, there will be ten home-based language interventions that would be 35 minutes that would occur in your home. The final interview will be completed by a graduate student from the university.

What day the week and time works best for your schedule to meet to go over the consent and start on the first interview?



## CURRICULUM VITA

GISELLE NÚÑEZ

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### EDUCATION

*University of Illinois at Chicago*

Doctoral Candidate, Special Education, Expected, February 2019

Advisor: Dr. Marie Tejero Hughes

Dissertation: “*A home-based language intervention with Mexican immigrant mothers and their children*”

*Rush University*

Master of Science, Speech-Language Pathology, 2005

*University of Illinois at Urbana-Champaign*

Bachelor of Science, Speech and Hearing Science, 2003

Minor, Spanish

### UNIVERSITY TEACHING EXPERIENCE

*St. Xavier University*, Fall 2018

CSDI-305 Development of Language of Young Children

CSDIG-503 Developmental Disorders of Language

Clinical Supervisor

*University of Illinois-Chicago*, Spring 2017

Graduate Teaching Assistant

SPED 410 Exceptional Learners

*University of Illinois-Chicago*, Summer 2016

Graduate Teaching Assistant

SPED 465 Understanding Students with High-Incidence Disabilities

*University of Illinois-Chicago*, Spring 2016

Co-Instructor

SPED 466 Language Development, Diversity, and Disabilities

### WORK EXPERIENCE

St. Xavier University, Chicago, IL

Assistant Professor, 2018-Present

Department of Communication Sciences and Disorders

Chicago Public Schools, Chicago, IL

2005-2018

- Attend student’s initial eligibility and Individualized Education Plan (IEP) meetings to determine eligibility for services and to develop and implement speech and language goals

- Conduct diagnostic assessments and treatment with school age children with various speech and language disorders including apraxia of speech, phonological/articulation disorders, and autism
- Administer bilingual speech and language evaluations to school-age children Provide Response to Intervention (RTI) support services to students in Tier I and
- Follow up with referrals for students from Parochial schools, doctors, Early Intervention, Ounce of Prevention, Child Find, and teachers
- Supervise speech language paraprofessionals

Chicago Public Schools, Chicago, IL  
2009-2011

- Conducted diagnostic assessments of children aging out of Early Intervention services or screened through Ounce of Prevention/Child Find with various speech and language disorders
- Evaluated students and recommended an Assistive Technology evaluation to facilitate their communication at school and home

Beverly Therapies, Chicago, IL  
2006-2008

- Early Intervention service provider for monolingual and bilingual children aged 0-3 with speech and language disorders
- Conducted six month/discharge diagnostic assessments and treatment to children with various speech and language disorders including language delays or congenital disabilities
- Assisted in the development of Individual Family Service Plans

Infinity Rehab, La Grange, IL  
2005-2006

- Administered diagnostic assessments and treatment to patients in a geriatric rehabilitation setting including patients with cerebral vascular accidents, head trauma, tracheotomies, dysarthria, and Huntington's Chorea
- Performed and interpreted bedside evaluations and administered dysphagia treatment to patients

## GRANTS AND FUNDING

*Urban Educators Scholarship.* University of Illinois at Chicago. Supported by the U.S. Department of Education, Office of Special Education Programs, 2014-present. \$24,000 yearly

*Dissertation Grant.* University of Illinois at Chicago, 2018. \$500

*Albin and Young Doctoral Fellowship Award.* University of Illinois at Chicago, 2018. \$600

*Graduate College Student Presenters Award.* University of Illinois at Chicago, 2017. \$200

*Graduate Student Council Travel Award.* University of Illinois at Chicago, 2017. \$275

*Special Education Department Travel Funding.* University of Illinois at Chicago, 2016. \$400

*Minority Scholarship Leadership Program.* American Speech and Hearing Association, 2016.

*College of Education: Dean's Office Collaborative Community Grant.* University of Illinois at Chicago, 2015. \$5000

*Special Education Department Travel Funding.* University of Illinois at Chicago, 2015. \$300

## **RESEARCH**

Principal Investigator, A home-based language intervention with Mexican immigrant mothers and their children, University of Illinois at Chicago, 2018

- Provided a home-based language intervention to Mexican immigrant mothers and their children with a language delay in to increase the child's vocabulary and expressive language skills

Principal Investigator, "Qué pienso yo?" Latino family's perceptions of home-based early intervention services, University of Illinois at Chicago, Spring 2017

- Interviewed families to gain a better understanding of their experiences and perspectives within Early Intervention

Research Assistant, Universal design, Early childhood and disabled children, Universidad Nacional de Colombia, Bogota, Colombia, Principal Investigator: Marisol Moreno-Angarita, 2016-2017

- Worked with the principal investigator to understand the impact of universal design and inclusion training with educators that work in preschool settings in Colombia following training on child development, inclusion, and special education laws and policies

Research Assistant, Parents taking action, University of Illinois at Chicago, Principal Investigator: Sandra Magaña & Marie Tejero Hughes, 2016-2017

- Working with a multi-disciplinary team to examine the perceptions of parents and interventionalists in the implementation of an autism program for parents and their children

Co-Principal Investigator, Lenjuage en acción, University of Illinois at Chicago, Principal Investigator: Maria Soria, 2016

- Examined the impact of language and literacy at a family-based center

Principal Investigator, Language learning through the arts, University of Illinois at Chicago, 2015

- Examined the impact of language integration within an arts program with elementary school aged children and their parents with an arts community partner

## **SCHOLARSHIP**

*Publications:*

Núñez, G., & Hughes, M. T. (2018). Latina mothers' perceptions and experiences of home-based speech and language therapy. *Perspectives of the ASHA Special Interest Groups*, 3(14), 40-56.

Gonzales, W., Núñez, G., Hughes, M. T., & Soria, M. (2018). Engaging in Latino activities at home: Latino families speak up. *International Journal of Education*, 2(10), 50-59.

Soria, M., Núñez, G., Scaletta, M. (in progress). Language learning through the arts: ELLs vocabulary learning during a summer arts program

#### *PRESENTATIONS:*

Núñez, G., Gonzales, W., Hughes, M. T., & Soria, M. (February, 2018). *Establishing collaborative partnerships with diverse families*. Presented at Council for Exceptional Children, Tampa, FL.

Hughes, M. T., Núñez, G., Gonzales, W. (February, 2018). *Engaging with families of children with autism: A Colombian experience*. Presented at Council for Exceptional Children, Tampa, FL.

Núñez, G. (February, 2018). *Latino family perceptions of home-based early intervention services*. Poster presented at Council for Exceptional Children, Tampa, FL.

Núñez, G. (November, 2017). *Latino family perceptions of home-based early intervention services*. Poster presented at American Speech and Hearing Association Conference, Los Angeles, CA.

Núñez, G., Gonzales, W., & Soria, M. (November 2017). *Educators & parents working together to promote academic based language skills*. Poster presented at American Speech and Hearing Association Conference, Los Angeles, CA.

Núñez, G., Gonzales, W., Soria, M., & Hughes, M. T. (November 2017). *Latino families & literacy development: How to promote skills at home & school*. Poster presented at American Speech and Hearing Association Conference, Los Angeles, CA.

Núñez, G., Gonzales, W., Soria, M., & Hughes, M. T. (July 2017). *Latino families: Promoting literacy development at home*. Poster presented at American Speech and Hearing Association: Schools Connect, New Orleans, LA.

Soria, M., Núñez, G., & Scaletta, M. (April 2016). *Language learning through the arts: Vocabulary learning during a summer arts program*. Poster presented at Council for Exceptional Children, Boston, MA.

Núñez, G., Gonzales, W., Soria, M., & Hughes, M. T. (January 2017). *Latino families promoting literacy development at home*. Poster presented at University of Illinois at Chicago College of Education Research Day, Chicago, IL.

Gonzales, W., Soria, M., Hughes, M. T., & Núñez, G. (December 2016). *Latino families and literacy: What do they want us to know?* Presented at American Reading Forum, Sanibel Island, FL.

Núñez, G., Soria, M., & Scaletta, M. (November 2016). *Language learning through the arts: An examination of vocabulary & parent-child communication topics.* Presented at American Speech and Hearing Association Conference, Philadelphia, PA.

Núñez, G., Buren, M., & Fowler, D. (April 2016). *Zero tolerance policy and charter schools: Who's in, who's out?* Presented at Council for Exceptional Children, St. Louis, MO.

Núñez, G. (April 2016). *The role of dynamic assessments in cultural and linguistically diverse students.* Poster presented at Council for Exceptional Children, St Louis, MO.

Soria, M., Scaletta, M., & Núñez, G. (March 2016). *Parent-child communication during a summer arts program with urban elementary youth.* Presented at National Association for Bilingual Education, Chicago, IL.

Núñez, G. (February 2016). *Examining the impact of cultural competency in speech-language pathology graduate programs.* Poster presented at Illinois Speech and Hearing Association Conference, Rosemont, IL.

Soria, M., Núñez, G., & Scaletta, M. (January 2016). *Language learning through the arts.* Poster presented at University of Illinois at Chicago College of Education Research Day, Chicago, IL.

Núñez, G. (November 2015). *Examining the impact of cultural competency in speech-language pathology graduate programs.* Poster presented at American Speech and Hearing Association Conference, Denver, CO.

## **SERVICE**

Convention Program Committee Topic Chair, American Speech and Hearing Association, 2018-2019

Coordinating Committee SIG 14, American Speech and Hearing Association, 2018-2021

Ad Hoc Committee on Language Proficiency, American Speech and Hearing Association, 2017-2018

Editorial Review Board (student member); Wiley Handbook of Research on Diversity in Special Education. (2017). Editors: Marie Tejero Hughes and Elizabeth Talbott. Publisher: Wiley.

Student to Empowered Professional (S.T.E.P.) Mentoring Program, American Speech and Hearing Association, 2013-2017

- Provided guidance, support, and feedback to graduate student for future career

development in the field of speech language pathology in an online mentoring program to address short- and long-term goals

Conference proposal reviewer: American Educational Research Association

- Division K Teaching and Teacher Education, 2016
- SIG-Urban Learning, Teaching, and Research, 2016
- Committee on Scholars of Color in Education, 2015
- SIG-Bilingual Education Research, 2015
- SIG-Early Education and Child Development, 2015
- SIG-Special Education Research, 2015

Conference proposal reviewer: Council for Exceptional Children

- Teacher Education Development, 2015, 2016

Conference proposal reviewer: Literacy Research Association, 2015

Conference proposal reviewer: American Speech and Hearing Association

- Language and Learning in School-age Children
- SIG 14-Cultural and Linguistic Issues, 2016, 2017
- ASHA Connect Conference Poster review 2016

Conference proposal reviewer: The National Association for Multicultural Education, 2016, 2017

Graduate Student Representative, Council for Exceptional Children Division for Research (DR), 2017

Leadership Development Program Application Reviewer: American Speech and Hearing Association, 2015, 2016

Peer reviewer: SpeechPathology.com, 2012-2013

Illinois Speech-Language Hearing Association, Member School affairs committee, 2016

National Association for Multicultural Education, Member, 2016

## **PROFESSIONAL ORGANIZATIONS**

American Speech and Hearing Association

Illinois Speech and Hearing Association

Council for Exceptional Children

American Education Research Association

National Association for Multicultural Education

## **CERTIFICATIONS**

- Illinois Type 73 Certification
- Certificate of Clinical Competence- Speech-Language Pathology (CCC-SLP)

- Illinois State License for Speech-Language Pathology

**LANGUAGE** (in addition to English)

- Spanish: Fluent in speaking, reading, and writing