ABSTRACT

PARENT-TRAINING FOR PARENTS OF PRESCHOOL- AND SCHOOL-AGE CHILDREN WITH LANGUAGE DEFICITS: A PILOT STUDY IN ENHANCING CHILDREN'S VOCABULARY GROWTH AND PARENTS' PERCEPTIONS, STRATEGIES AND KNOWLEDGE

By

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The purpose of this study was to address two research questions: After parents participated in a brief, language-focused parent-training program: (1) To what extent does the parent-training influence children's vocabulary development and (2) To what extent does the parent-training influence parents' role as a language facilitator in regards to their perceptions, strategies and knowledge of language and literacy concepts.

Pre-and post-parent-training, assessment was conducted and used to measure growth within each participant group. A standardized vocabulary test was administered to the child participants and a parent questionnaire was administered to the parent participants. Data were collected and analyzed using descriptive statistics. The results from this study found that parent-training can increase children's vocabulary and parent's perceptions, knowledge and skills pertaining to their role as their child's language facilitator.

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CHAPTER 1

INTRODUCTION

Statement of Problem

Vocabulary is the "knowledge of words and word meanings" (Honig, Diamond, Cole, & Gutlohn, 2008), and one aspect of semantics (DeKemel, 2003). From infancy to early school-age, children's vocabulary primarily develops by exposure to verbal exchanges within their environment (Kamhi & Catts, 1991). For typically developing toddlers and preschool-age children, there are two phases of vocabulary development. Phase one, also called *fast-mapping,* occurs when a child connects limited, incidental exposures to a representation of a new word (McGregor, Friedman, Reilly, & Newman, 2002). Phase Two, also known as *slow-mapping* (Carey, 1978), is characterized by refining a hypothesized word definition through repeated exposure, greater familiarity with its semantic features and discrimination of a word from other similar representations (McGregor et al., 2002). Slow-mapping may take weeks, months, or even years to complete. Vocabulary learning is slow because it requires increased cerebral organization to accommodate for newly formed interrelationships between concepts and words (Owens, 1996). Although both phases are not completely understood, it is well-documented that a rich and robust vocabulary is paramount for language proficiency, literacy, and academic achievements overall (Beck, McKeown, & Kucan, 2008; Blachowiscz, Fisher, Ogle, & Watts-Taffe, 2006; Ouellette, 2006).

According to Baddeley, Gathercole, and Papagno (1998), vocabulary is the single most significant factor of a child's intellectual and academic success. Vocabulary plays a particularly prominent role in literacy and academic achievement (Beck et al., 2008) because vocabulary is intrinsically connected to reading comprehension (DeKemel, 2003). Upon entering kindergarten, children are expected to have had exposure to and begun mastery of oral and some literate forms of language, including vocabulary, necessary to meet the demands of classroom discourse and early literacy tasks (Wallach, 2008). However, ubiquitous variations of vocabulary levels are often observed in kindergarteners due to a variety of contributing factors including varied exposure to diverse vocabulary within their home environment (Hart & Risley, 1995), differences in the frequency and quality of parent-child interactions and/or the presence of a language disorder (LD).

American Speech-Hearing Association (ASHA) defined language disorder as an impairment in "comprehension and/or use of spoken, written and/or other symbol systems" (ASHA, 1993, para. 2). The disorder may incorporate one or any combination of the three aspects of language: (a) form (phonology, morphology, syntax), (b) content (semantics: vocabulary), and (c) use of language in communication (pragmatics). A Specific Language Impairment (SLI) is a primary deficit in language use and/or comprehension "in the face of otherwise typical development" (Schuele & Hadley, 1999, p. 13). The terms Language Disorder (LD), Language Impairment (LI) and SLI are used interchangeably throughout this paper, depending on the term used in the original study.

Children who are at-risk for or present with a language disorder, are observed to have more difficulty acquiring novel words in comparison to typically developing peers.

Children with deficits in language demonstrate a more limited vocabulary repertoire (Beitchman et al., 2008) and acquire vocabulary words at a slower rate in which they require additional exposures to novel words in comparison to typically developing peers (Alt, Plante, & Creusere, 2004). They also recall fewer semantic features of recently learned words and have difficulty understanding that some words can have multiple meanings (Alt et al., 2004). Narrow vocabulary skills presented by these children will likely follow the child throughout their development (Beitchman et al., 2008) and academic career (Beck, McKeown, & Kucan, 2002). However, vocabulary outcomes have been shown to increase when adult communication partners apply language facilitation techniques during naturalistic contexts of everyday life; such as shared storybook reading and play (Roberts & Kaiser, 2011).

Parents who rely upon preschool educators to expose or explicitly teach their children varied vocabulary, may be sorely disappointed to hear that this is often not the case. In addition to preschool teachers not speaking to children during 81% of opportunities when children were within a three-foot radius (Wilcox-Herzog & Kontos, 1998), preschool teachers have been reported to provide minimal one-on-one instruction (Layzer, Goodson, & Moss, 1993), discuss the meaning of unfamiliar words in less than 1% of opportunities (Champion, Hyter, McCabe, & Bland-Stewart, 2003), use rare words primarily during group sessions (Cote, 2001), and mostly discuss familiar routines during teacher-student interactions (L. Dunn, Beach, & Kontos, 1994). Although preschool teachers are trainable and can effectively implement language focused interactions (Girolametto, Weitzman, & Greenberg, 2006), it is suggested that parents do not place all responsibility on preschool teachers to expose their child to language enriching

interactions. Rather, targeting language within the home environment is key to ensure learning across various domains. Training caregivers to expand the depth and breadth of expressive vocabulary, by teaching words used by "mature language users" (Beck et al., 2008, p. 253) while engaging in daily activities, is most advantageous to best prepare preschool-and school-age students to meet future language demands.

In an effort to promote vocabulary growth, training parents to implement language facilitating strategies has been shown to be effective (Law, Garrett, & Nye, 2004; Roberts & Kaiser, 2011; Van Balkom, Verhoven, Van Weerdenburg, & Stoep, 2010). Language facilitation is a type of intervention that aimed to increase the growth rate of learning without the intent of surpassing language outcomes beyond typical language milestones. In other words, providing language facilitation intervention supports a child to achieve language milestones sooner than if they didn't receive direct therapy (Paul & Norbury, 2012).

Various parent-training research studies have been investigated over the last several decades; which have led to the creation of several mainstream programs. However, in the aggregate of research and established programs, some limitations still persist. First, within the last decade, most parent-training efficacy studies for children with language impairments have focused on children between 24-37 months of age (Buschmann et al., 2009; Gibbard, Coglan, & MacDonald, 2004; Van Balkom et al., 2010). Although training parents to use general language prompting techniques throughout daily routines has been found to be efficacious for toddlers, research is unclear if similar effects would be observed for the preschool-age and school-age populations with language disorders. Secondly, the majority of current research has

focused primarily on teaching parents how to target vocabulary during shared storybook reading (Arnold, Lonigan, Whitehurst, & Epstein, 1994; Crowe, Norris, & Hoffman, 2004; Pile, Girolametto, Johnson, Chen, & Cleave, 2010), while neglecting other routine activities that could be used as language facilitating context. Thus, the expansion of minimal research investigating the effects of a comprehensive intervention program implemented by trained parents, which target vocabulary during play and storybook reading contexts for preschool-age children, is needed. Lastly, most research pertaining to parent-training has required parents to participate in lengthy parent-training sessions that extend over numerous weeks. In Roberts and Kaiser (2011) meta-analysis the average parent-training was 12.1 sessions over 21.3 weeks for 21.4 total hours. Although beneficial for efficacy studies, this is not a practical expectation for parents. Thus, the efficacy of a short, yet comprehensive parent-training program is needed.

Another critical component of parent-training is parents' learning outcomes; however, research regarding the effects of parent-training on parent's perceptions, knowledge and strategies used has been limited. In particular, parents' perceptions of their child's language development after completion of a training program has received little attention in research. A parent-training program can maximize its effectiveness only if parents believe that the knowledge and skills taught are truly beneficial for their children. Romski et al. (2011) investigated parents' perceptions of their child's communicative development before and after participating in a parent-training program. However, the children included in the program were toddlers with developmental delays who also demonstrated an expressive vocabulary of 10 words or less. Thus, further investigation is needed to evaluate the effects of parent-training on parents' perceptions,

as well as their knowledge of language, play and literacy concepts and strategies to prompt each domain for preschool and school-age children with language deficits.

Purpose of the Study

The purpose of the current study was to determine the efficacy of a parent-training program on vocabulary growth, as measured by the *Expressive Vocabulary Test (EVT-2)*, for preschool and school-age children with language deficits. A second purpose of this study was to evaluate parents' perceptions, knowledge and strategies gained from participation in a parent-training program through a pre-and posttest questionnaire comparison.

CHAPTER 2

REVIEW OF THE LITERATURE

Parent Interaction and Language Learning

Parent-child dyad interactions significantly influence a child's early language learning (Roberts & Kaiser, 2011). As a parent is often a child's first communication and language teacher, heavy responsibility is placed on this role, regardless of a parent's knowledge and skills. Furthermore, researchers have determined that the quality of parent-child interactions influence language development (Hammer, Tomblin, Zhang, & Weiss, 2001). Language development is associated with a parent's responsiveness, language input and modeling (Roberts & Kaiser, 2011; Rowe, 2008; Warren & Brady, 2007), as well as, the amount of time a parent devotes to directly talking with their child (Hart & Risley, 1995). When parents fail to provide an adequate language learning environment, children demonstrate decreased acquisition in syntax, semantic and pragmatic language skills (Hart & Risley, 1995). Moreover, for children with a language disorder (LD), exposure to naturally occurring language stimulation may not be supportive enough to develop language typically and, thus, teaching language more explicitly may be warranted (Kaiser & Roberts, 2013). Additionally, a bidirectional relationship between language used by parents and language used by children with LD has been observed. In other words, linguistic differences in a parent's output may reflect

the linguistic differences observed in children with LD and vice-versa (Roberts & Kaiser, 2011).

Linguistic behaviors of children with SLI during parent-child interactions have been extensively investigated. Bishop, Chan, Adams, Hartley, and Weir (2000), investigated the quality of conversational language when describing familiar events of children with typically developing (TD) language and children with SLI. Compared to children with TD language, children with SLI were found to produce significantly more inadequate responses when responding to an adult. During storybook reading activities, children with SLI are observed to be more passive participants (Crowe, 2000) ask fewer questions (Sulzby & Kaderavek, 1996) and find shared-book reading routines undesirable (Rabidoux & MacDonald, 2000) in comparison to children with TD language. However, children with SLI are more likely to engage in conversation during storybook reading routines when they feel "emotionally and instructionally supported" (Skibbe, Moody, Justice, & McGinty, 2010) and when parent's output is sensitive to their linguistic needs (Vander Woude & Barton, 2003).

Additionally, parents of children with SLI engage in conversational activities less often than parents of children who are TD (Hammer et al., 2001). When they engage in dialog, most parents of children with SLI demonstrate a dominant role by more frequently taking turns, initiating topics, asking questions, and using nonverbal directives (Van Kleeck & Vander Woude, 2003). Van Kleeck and Vander Woude (2003) suggested that such parental behaviors increase the child's conversational strategies during shared book reading. However, quantitative information regarding the accuracy of the children's responses was not provided in this study.

Barachetti and Lavelli (2011) considered the accuracy of child's responses when parents provided supportive language repairs during shared-book reading. Supportive language repairs consisted of any utterance that was intended to correct a child's problematic answer. The study defined several types of supportive language repairs included highly-supportive to non-supportive repairs, language repairs, and content repairs. Three groups of parent-child dyad participants were comprised of mothers and their children with (a) SLI, (b) TD aged-matched peers and (c) younger, typically developing Mean Length Utterance (MLU)-matched children. Although the frequency of linguistic mistakes were found to be similar between children with SLI and the children with match-MLU, mothers of children with SLI used significantly more highly-supportive repairs than the other groups of mothers; which aligned with the finding from the Van Kleeck and Vander Woude (2003) study. Additionally, Barachetti and Lavelli (2011) found that children with SLI were only able to provide minimally correct responses, even when mothers provided crucial information. However, the researchers also reveal that not all repairs supported language growth. The authors suggest that parents' idiosyncratic responses or even responses that are too linguistically complex may not assist the child with a fragile phonological memory and word retrieval abilities; which often results in exacerbated language learning difficulties. The finding from this study support Tannock and Girolametto's (1992) claim that parental linguistic behaviors can contribute to or even worsen the linguistic limitation of children with SLI. Thus, training parents how to respond more appropriately to their child's idiosyncratic responses can decrease the chances of both communication partners responding with little

messages of communicative purpose; which often results in confusing and unsuccessful communicative attempts.

Training Parents to be Language Facilitators

Historical Perspective of Parent-Training: From Behavioral Intervention to Language Facilitation

Parent-training is historically rooted in behavioral intervention (Tempel, Wagner, & McNeil, 2009). Parents were trained to implement behavioral therapy as would a behavior interventionist. Not until the early 1980s was parent-training extended to address language delays in children (Connell, 1982). Similar to parents becoming behavioral interventionists, parents were trained to implementing language therapy as if a clinician, by utilizing direct instruction and operant conditioning (Connell, 1982; Flanning, 2008). As therapy primarily consisted of hierarchically-oriented, drill-like sets of distinct language forms, generalization of new language forms became a limitation (Connell, 1982). Therefore, Fey (1986) purposed that language intervention must extend beyond discrete and operant conditioning by utilizing materials and contexts that are more natural. Similarly, Owens, (2008) claimed that intervention without the purpose of generalization is impractical. He suggested new language forms can be more easily generalized when provided in more naturalistic interactions.

Such ideology rooted in Vygotsky's (1962) Social Interactionism Theory states that a child and adults' interactions and environments play an active role in language acquisition. Proponents of social interactionism believe that language acquisition is the product of motivation to socialize, as well as, adult guidance and modeling. Thus, exposure to a variety of supported, socialized interaction breeds language. Within the framework of this model, parents play a vital role by modifying one's expressive

language to meet their child's linguistic level and respond contingently to their child's verbal and nonverbal productions (Nelson, 2010). Implications drawn from Roberts and Kaiser (2011), a meta-analysis regarding the efficacy of parent-training programs, strongly supports that parent implemented therapy should focus on social communication between parents and children. Under the umbrella of social interactionist theory, a variety of types of interventions can be implemented including Focused Stimulation, Script Therapy, Milieu Communication Training and Enhanced Milieu Teaching (EMT).

Efficacy and Benefits of Parent-Training: Fostering General Language Acquisition

When implementing techniques learned from parent-training programs, parents have been shown to be effective language facilitators across various experiment designs, including single-subject (Kashinath, Woods, Goldstien, 2006), group-comparisons (Buschmann et al., 2009; Gibbard et al., 2004), as well as meta-analyses (Law et al., 2004; Roberts & Kaiser, 2011). In general, parent-training increases children's language regardless of the disorder; such as., language impairment secondary to a primary diagnosis or a specific language disorder (Roberts & Kaiser, 2011). Van Balkom et al. (2010) proposed that language skills (i.e., mean length of utterance and receptive language) targeted by parents are maintained over time and parent implemented treatment is more cost effective than therapist implemented treatment. Marshall, Goldbart, and Phillips (2007) also supported that parents are experts in knowing their children and this knowledge can assist in creating effective intervention that is well-tailored to meet the needs and interests of their child.

The efficacy of a parent-training programs has also been examined by evaluating child participants' language outcomes after parent implemented therapy. Kashinath et al.

(2006) taught four parents of children with autism various therapy principles (i.e., environmental arrangements, natural reinforcements, time delay, modeling, etc.) to increase general language production. All four child participants were found to increase their use of single word productions.

In a recent meta-analysis, Roberts and Kaiser (2011) examined 18 group-design studies focusing on the effects of various parent-training programs and their influence on language outcomes for children ages 18 to 60 months. Participants included children with autism, intellectual disorders, and SLI. The results indicated a significant effect size between six of the seven language outcome constructs (e.g., overall language, expressive vocabulary, expressive morphosyntax, etc.). Additionally, the authors determined (a) no significant difference between parent or therapist-implemented therapy, (b) expressive morphosyntax was observed to have the greatest increase in comparison to all other constructs analyzed and regardless of whether parents or therapists implemented therapy, (c) the effects were only found to be significantly different for children with and without intellectual disabilities for the expressive vocabulary construct, (d) no significant difference was found between observation and parent-reported measures for expressive vocabulary, and (e) parent-training was found to positively impact parents' responsiveness, rate of communication, and use of language models. Thus, parent-training programs positively influenced children's language development and parents' role as language facilitators during parent-child interactions.

Researchers have also investigated the effectiveness of trained parents, in comparison to speech language pathologists (SLPs), to provide language intervention to children with a SLI (Gibbard, 1994; Gibbard et al., 2004; Law et al., 2004). Law et al.

(2004) conducted a meta-analysis to investigate the efficacy of various types of speech and language treatments when the treatment was implemented by a parent or trained therapist. The inclusion criteria for the study was as follows: (a) randomized, between subject design studies, (b) children and adolescents with a primary deficit in speech and language, (c) interventions must have targeted phonology, syntax or vocabulary, and (d) outcomes measured phonology vocabulary, or syntax. Based on the inclusion criteria, seven studies were identified and coded based on the goal of the treatment applied (i.e., phonology, vocabulary, or syntax) and who implemented the therapy (i.e., parent or therapist). The results indicated no significant difference was found between parent- and therapist-implemented therapies across various treatments. Thus, providing intervention intended to increase phonology, syntax and vocabulary skills were found to be as effective, regardless of who implanted therapy-a parent or therapist. However, the inclusion criteria for this meta-analysis included children older than preschool-age as the study included children through adolescents. Gibbard (1994) and Gibbard et al. (2004) also suggested that children who received parent-based intervention were observed to make significantly greater improvements in their expressive language ability than children who received standard individual language therapy. In addition, it was found that trained clinicians and parent are similarly viable individuals to implement language therapy but parent implemented therapy is more cost effective (Gibbard et al., 2004).

Buschmann et al. (2009) investigated the effects of providing a short, yet informative parent-training program to increase expressive language skills of 2-year-old children with specific expressive language delays (SELD). Fifty-eight child participants were randomly assigned to a control group or a treatment group. Additionally, a

reference group, of typically developing children was created. Treatment consisted of the Heidelberg Parent-Based Language Intervention Program to teach parents general language stimulation techniques (e.g., prompting and modeling) during child-directed interactions. One key element to the parent-training program is using shared book reading as the preferred context for vocabulary growth. Parents received eight sessions of training over 13 weeks for a total of 17 hours. Four subtests from the Sprachentwicklungstest für zweijährige Kinder (SETK-2), a comprehensive, German, norm-references assessment, was used to evaluate the child participant's language pre- and post-parent-training (Grimm, 2000). Additionally, all child participants were posttested at 6 and 12 months after pretest. Results found that at age 3, 75% of the children within the treatment group demonstrated typical expressive language skills in comparison to 44% in the waiting group. However, the language outcome score indicated that the majority of the participants within the treatment surpassed the late talker criteria. Overall, the results showed that applying a brief, highly structured parent - based intervention increased the rate of remediation of language delays of children at age 3.

Of all parent implemented therapy programs, The Hanen Program® and Milieu Teaching have been extensively investigated. Within the above-mentioned meta-analysis by Roberts and Kaiser (2011), the most common type of intervention was The Hanen Parent Program® which comprised almost 50% of all studies analyzed. The Hanen Parent Program® encompasses several programs designed to target distinct populations of children (e.g., Target Word®-The Hanen Program® for Parents of Children who are Late Talkers). Although this program has been found to be effective in teaching parents to

employ language facilitating strategies, it is "specifically designed for groups of parents of children under the age of 30-months who are using few words or who, by the age of 24 months, are not using several two-word combinations" (The Hanen Centre®, 2011, para. 2). Thus, a preschool-age child over age 30-months or a preschool-age child who is using more than two word combinations would not be an ideal candidate for this program. Additional resources are available to promote more specific skills sets such as play and literacy. Lastly, a program geared for a wider range of children is called, You Make The Difference® (YMTD®). The program is based on the philosophy that children are more apt to engage in language interactions when they are feeling supported and confident. YMTD® program is designed to provide parents with a variety of language facilitation strategies that are ideal to use across contexts within their daily routines.

Although the strategies of YMTD® are evidenced based, according to a Elaine Weitzman, Executive Director at The Hanen Centre, YMTD® training for professionals has been discontinued due to the results of the Wake at el. (2011) research findings. The Australian-based research team found this program to be of no impact on toddlers' language development with mild expressive language delays. Even though the program was designed as a preventative program for preschool-age children who demonstrate greater deficits than mild expressive language delays, The Hanen Centre® reviewed the study's results and determined the program could benefit from some revision. Therefore, further research is needed to determine if this program is equally effective in increasing the linguistic skills of preschool-age children with more severe language deficits.

An additional evidence-based language intervention that is commonly implemented by parents is Milieu Communication Training. According to Hancock and

Kaiser (2006), Milieu Teaching is composed of three principles: (a) environmental arrangement, (b) responsive interactions, and (c) capitalizing on a child's interests and initiations as opportunities to model and prompt conversational interactions during daily routines and settings. The environment (e.g. materials, activities, etc.) is carefully arranged by the clinician to promote the child to initiate communication. When the child initiates or responds, natural consequences are provided by the adult. Under the umbrella of Milieu Communication Training includes Incidental Teaching (Hart & Risley, 1975), Mand-Modeling (Rogers-Warren & Warren, 1980), Prelinguistic Milieu Teaching (Warren et al., 2006), and Enhanced Milieu Teaching (Kaiser, 1993).

EMT has received much attention over the last 30 years. This naturalistic method of intervention uses a child's initiations and interests as instances to prompt or model functional language (Kaiser, 1993). Natural contexts extend to any typical, daily routine experienced by the child. A combination of techniques and strategies are implemented to increase the frequency and complexity of language. EMT strategies are the same as those found in Milieu Teaching but caregivers are additionally taught various techniques. The techniques included (a) setting the environment to encourage joint attention and engagement during play (e.g., eye level with child, follow the child's lead), (b) notice and respond, (c) turn taking (d) mapping and mirroring language, (e) modeling and expanding play, (f) modeling language (g) expanding communication, (h) manipulating the environment to promote communication, and (i) utilizing prompting strategies to prompt practice.

Parent implemented EMT skills have been shown to generalize within the home environment (Kaiser & Hancock, 2002) and can maintain for 6-18 months after training

(Kaiser & Delaney, 2001). Likewise, EMT has been found to increase expressive language in use and frequency, as well as, generalize across person and place for toddlers (Roberts & Kaiser, 2012). Even though EMT has been found to be an effective treatment that can be implemented by SLPs and parents, candidates with an MLU over 3.5 are not ideal for this program (Paul & Norbury, 2012).

Overall, training parents to implement language facilitation techniques has been found to increase children's language development, rate of remediation of linguistic deficits, generalize of new language across person and place, and be cost effective. However, additional research supporting the efficacy of parent-training programs extended to target preschool-age children with a language disorder is limited and therefore, warranted.

Vocabulary

Vocabulary: An Essential Component of Language Development and Academic Success

Fostering all aspects of language is essential for academic success; however, vocabulary plays a particularly prominent role in literacy and academic achievements (Beck et al., 2008). According to the National Institute of Child Health and Human Development (2000), vocabulary is identified as a supportive skill necessary for literacy. Moreover, vocabulary has been recognized as one of the greatest predictors of reading comprehension (Davis, 1972). Specifically, expressive vocabulary in kindergarten has been associated with later overall reading achievements (Scarborough, 1998). The greater the amount of vocabulary words known, the easier it is to decode and comprehend written language (Blachowicz et al., 2006; Ouellette, 2006). However, many children entering kindergarten present with a vast variety of vocabulary skills (Blachowicz et al.,

2006). Understandably, some children may demonstrate an insufficient level of vocabulary knowledge necessary for reading success (Blachowicz et al., 2006). In particular, children of low socioeconomic status (SES) present lower levels of vocabulary skills, in comparison to children of high SES (Chaney, 1994). Likewise, children with language impairments also demonstrate limited size and variety of vocabulary. Beyond a limited vocabulary, children with SLI are said to acquire vocabulary at a slower rate and require additional exposures to novel words to commit words to long term memory (Alt et al., 2004). They also recall fewer semantic features of recently learned words and have difficulty understanding that words can have multiple meanings (Alt et al., 2004). Consequently, a lack of word knowledge leads to difficulty understanding advanced forms of language such as figurative language (Norbury, 2004). Narrow vocabulary skills presented by these children likely follow the children throughout their development (Beitchman et al., 2008) and academic career (Beck et al., 2002).

Vocabulary ability is also associated with social acceptance. In particular, receptive vocabulary relates to children's popularity amongst same-aged children. Gertner, Rice, and Hadley (1994) explored social popularity across three different groups of children ranging from 43 to 70 months: (a) children with typically developing language (TDL), (b) children with speech and/or language impairments (S/LI) , and (c) children learning English as a second language (EEL). The groups were formed based on results from an array of formal and informal language assessment including: the Reynell Developmental Language Scales-Revised (Reynell & Gruber, 1990), the Goldman-Fristoe Test of Articulation (GFTA; Goldman & Fristoe, 1986), the Peabody Picture Vocabulary Test-Revised (PPVT-R; M. Dunn & Dunn, 1981), and a language sample to

determine mean length of utterance (MLU). Social popularity was determined by two sociometric tasks (a) positive nominations and (b) negative nominations for choosing partners when given the opportunities to engage in dramatic play. Each child was presented with pictures of all the children within their classroom. After they had identified each child accurately, the rater was instructed to, "Point to who you do/do not like to play with." The children's responses were categorized into four groups: (1) Liked, (2) Disliked, (3) Low Impact, and (4) Mixed. The results indicated that children with typical language development were judged to be more "likeable" by their peers, while the latter two groups were either disliked or had a low impact on their peers. Children who were in the S/LI group were the least favorable mates chosen to play during dramatic play. Furthermore, language ability was found to be a better predictor of popularity than age or intelligence. Upon further investigation, children with speech and expressive language deficits were found to have more positive nominations than children with significant deficits in receptive vocabulary. Therefore, children with language deficits were less likely to have reciprocal friendship than children with ELL and TDL and the type of language deficit contribute to a child's peer-rated popularity.

Parent-child interactions: Impact on vocabulary development. The connection between parents' speech and language input and their children's vocabulary development has been examined. According to Hart and Risley (1995), vocabulary growth before school entry is most influenced by parent-child dialogues. Mothers have been found to significantly influence their child's vocabulary growth by their amount and diversity of words used (Pan, Rowe, Singer, & Snow, 2005). A correlation between children with larger vocabularies and mothers who purposefully sought to stimulate conversation with

their child during parent-child interactions has also been determined (Huttenlocher, Vasilyeva, Cymerman, & Lavine, 2002). Children's vocabulary growth is greater when parents have been trained to apply language facilitation techniques. Children whose parents were trained were found to say 52 more words (p = .01, 95% CI), than children of parents who did not receive training (Roberts & Kaiser, 2011). Buschmann et al. (2009) also pointed out that children who increased expressive vocabulary during treatment session were able to maintain their progress after 12 months. Therefore, research suggests that the variety of words used by parents significantly and positively affects a child's lexicon and parent-training has also been demonstrated to facilitate the process. Furthermore, the selection of vocabulary words taught as well the strategies used are important elements to consider when parents intend to facilitate their child's vocabulary growth.

Vocabulary selection and effective strategies: The center of the training program. A large body of research has investigated how to select vocabulary words and strategies that are best to teach parents. Justice, Meier, and Walpole (2005) found elaboration rather than incidental exposure of words was more effective when teaching new vocabulary words. Penno, Wilkinson, and Moore (2002) also found that providing elaborations in the form of synonyms and definitions increase the acquisition of novel words.

Based on a word's utility, Beck et al. (2002) developed a three-tiered system to select words to teach. Tier One is comprised of basic words that do not require direct teaching in school (e.g., dad, toy, book, run). Tier Two encompasses words that are frequently occurring across contexts by "mature language users" and are key to

comprehension (e.g., curious, gazing, drowsy). Lastly, Tier Three consists of words that are low-frequency and associated with a specific discipline (e.g., phoneme, neutrons, Revolutionary War). Beck et al. (2002) suggested that Tier Two words should be the center of instruction at school as these words are found within adults' daily conversations, reading and writing.

In a more recent study, Lefebvre, Trudeau, and Sutton (2011) coupled Beck et al. (2002) Tier Two words with vocabulary facilitation strategies (e.g., elaboration, explanations, synonyms, etc.); which resulted in an increase in vocabulary for preschool-age children from low-income families. Additionally, the authors found an increasing phonological awareness and print awareness during shared-storybook reading routines when dialogic, print and phonological awareness strategies were implemented.

Kaderavek and Justice (2002) recommend a guideline for reading interactions as well. They advise parents to increase their child's appeal for shared book reading, create a more collaborative environments between themselves and their child (e.g., letting the child choose a place to read, allow the child opportunity to manipulate the book, etc.) and encourage their child to use novel words outside the parameters of storybook reading events. Lastly, the authors discuss the importance of highlighting parents' attention to their own linguistic behavior during shared book reading (e.g., make verbal comments about print). Parents' nonverbal and verbal references to print may increase a child's print awareness. Justice and Kaderavek (2004) recommended the use of the "embedded-explicit model" as a means to target vocabulary and encouraged children to be submerged in "high-quality daily opportunities for naturalistic, meaningful, intentional, and highly contextualized interaction with oral and written language" (Justice & Kaderavek, 2004, p.

205). Thus, targeting emergent literacy skills and vocabulary can occur during one activity. Lastly, Girolametto, Pearce, & Weitzman (1996) taught parents to use focused stimulation when interacting with their children. A control group was used in which participants were not provided parent-training. The results revealed that children whose parents were in the experiment group demonstrated significantly greater diversity and overall production of words and multiword phrases. To more thoroughly explore the effects of parent-training on children's vocabulary growth, an investigation of parent-training to specifically use the context of shared storybook reading or play, by way of conversational intervention, is further discussed in the following sections.

Targeting Vocabulary through Storybook Reading

Early storybook reading is found to positively impact a child's language and literacy acquisition (Snow & Goldfield, 1983). The use of pictorial referents provides parents the opportunity to turn-take, ask question, and comment; which ultimately creates the opportunity for language focused interactions (Cole, Maddox, & Lim, 2006). Additionally, shared book reading routines are natural, highly predictable and allow for repeated exposure of new contextual language (Penno et al., 2002). Thus, storybook reading has increasingly been promoted as an ideal context for new vocabulary learning in children with language impairments (Dickinson, Griffith, Michnick Golinkoff, & Hirsh-Pasek, 2012).

In comparison to children without language impairments, children with LI are reported to be more passive communicators with limited verbal productions during storybook reading routines (Crowe, 2000). In response, parents of children with LI may attempt to simply their own language to meet their child's linguistic level (Crowe, 2000);

however, this is reported to limit the exposure to new language forms (Crowe, et al., 2004). In other instances, parents' language used within the story may be too advanced for the child to understand and leave him/her feeling less confident in contributing to the interaction. Consequently, an extensive body of research has investigated the effects of teaching parents how to increase their child's vocabulary growth during storybook reading routines.

Parent-implemented therapy: Increasing vocabulary through storybook reading. Using Whitehurst, Fischel, Caulfield, DeBaryshe, and Valdez-Menchaca's (1989) *dialogic reading*, Arnold et al. (1994) provided parents with an affordable video to teach parents how to implement dialogic reading strategies. Children were between the ages of 24-34 months and had average to above average expressive and receptive language. Dialogic reading strategies engage the child by (a) asking the child to recall information, (b) ask open-ended questions, and (c) ask wh-questions. The adult assesses and expands the child's output and asks the questions again at a later time to ensure acquisition of the vocabulary word. Both studies found storybook reading to be an effective context for teaching new vocabulary words.

Crowe et al. (2004) evaluated the effects of a parent-training program which aimed to increase the communicative participation of preschool-age students by shared-reading routines. The goal of the program was to instruct parents on how to promote their child's active engagement in shared book reading by increasing parent's responsiveness to their child's efforts to communicate. A routine called Complete Reading Cycle was utilized. All participants were between the ages of 3: 2 – 3: 5 and exhibited a language impairment. The authors found a significant increase in the number

of total words produce, lexical diversity, as well as, the frequency of turns-taken during shared book reading. Thus, trained parents were found to be effective facilitators during shared book reading to increase the variety and amount of vocabulary words, as well as, frequency of communicative exchanges.

Most recently, Pile et al. (2010) explored the effects of a shared book reading intervention on comprehension and use of print concepts and oral language for preschool-age children with language impairment. Parent-child dyad were randomly assigned to an experimental group (n=19) or control group (n=17). Within the experimental group, an adaptive version of the emergent literacy program created by Justice and Kaderavek (2004) was used to teach parents how to implement shared book reading with their child within the home environment. Parent participants were required to observe their child participant in 8, 60-minutes group therapy sessions led by a SLP who received one day of training. In addition to watching their child engage in group therapy, parents were allotted 15 minutes to converse with the SLP at the end of each treatment session. Pre- and post-intervention videos captured and coded parents' strategies used, turns-taken in relation to their child, and the child's oral language. The results revealed that parents within the treatment group increased their use of print concepts; however, no significant difference was found for the children's language outcomes. It is suggested that the dosage and content of the parent-training could contribute the lack of change observed. Overall, the body of research regarding training parents to utilize shared book reading as a means to increase vocabulary skills has proven to be effective; although, further investigation of some aspects of training are needed. An even smaller body of research supports play as a context for facilitating vocabulary.

Play goes hand-in-hand with language and cognitive development. Beyond the context of storybook reading routines, play is another naturalistic environment for parents to teach their children new vocabulary words. Play is a unique context because it is not goal oriented, which decreases the pressure for children to perform (Sachs, 1983). While engaging in play, children are able to problem solve, explore and exercise their creativity (Lockhart, 2010). Play provides children a reason to socialize with peers (McConnell, 2002), as well as, a context to develop their physical, cognitive, imaginative and emotional strength (Ginsburg, 2007).

Play is an important tool for cognitive and linguistic development. The development of play (e.g., object permanence, constructive, pretend play) requires various cognitive skills. Piagetian ideology proposed that specific cognitive levels are necessary for the acquisition of particular language stages (Piaget, 1954). However, more contemporary research suggests that cognitive milestones, often gauged by levels of play, are not necessarily perquisites to general language development (Watt, Wetherby, & Shumway, 2006). Rather, the development of cognition and play have been found to occur at similar points in development as particular communicative milestone (Watt et al., 2006). Additionally, according to Vygostsky (1962), during the preschool period language begins to influence thought. At this stage, the roles of thought and language begin to interrelate, and this integration increases both domains sequentially. Although, for children with language difficulty, converging both domains may take longer than typically developing peers (Paul & Norbury, 2012). For children who lag behind in play and language development, play-based interactions can simultaneously facilitate growth

in both domains due to their apparently parallel development and harmonious relationship.

Play is also important for pragmatic and literacy development. For example, play reflects constructs found in conversation. Games, often used in play, follow rules of turn-taking and topic sharing, as well as, mutual role structures and various ways to order elements (Sachs, 1983). Culatta (1994) also found child-centered play enhances turn-taking, narrative abilities, vocabulary, emergent literacy and overall communicative intentions. Children who engage in play are free to experiment with new language forms (Paul & Norbury, 2012). According to Westby (2008), skills found in pretend play are similar to those utilized in reading comprehension. Such skills include comprehension of casual and temporal relationships among people, objects and events. Additionally, the use and comprehension of decontextualize language during pretend play sets the foundation for more literate language used within the school setting, for both written and oral modalities. Consequently, a deficit in using decontextualized language is related to difficulty meeting academic demands (Michaels & Collins, 1984).

Although research supporting the benefits of play development is evident, recent efforts to decrease the amount of playtime within the preschool setting has been observed (Singer, Golinkoff, Hirsh-Pasek, 2006). The source of such change is due to the increasing attention for more focused emergent literacy activities within the early education setting. A disregard for the importance of play in the acquisition of emergent and later literacy skills may result in further disadvantage for children who are already struggling to meet age-appropriate play and language milestones. Therefore, it seems to

be more important than ever for parent to use the context of play to support the development of play, cognition, language and literacy.

Parent-implemented therapy: Increasing vocabulary through play. There is limited research in regards to teaching parent how to engage in play interactions with their children as a means to increase vocabulary for children with specific language disorder. Research regarding parent-mediated language intervention through play has primarily studied parents and children with autism. Most of these studies have also investigated the effect of play-based intervention on responsive parental communication (Siller, Hutman, & Sigman, 2013), and children's attachment (Siller, Swanson, Gerber, Hutman, & Sigman, 2014), but not vocabulary. However, several parent-training programs (e.g., EMT, focused, and general language stimulation) have incorporated play, as one of many contexts, to teach children novel vocabulary words. One study to date by Gaines and Gaboury (2004) examined play as the "constant" context while parents observed SLPs implementing language facilitation techniques (i.e., focused stimulation, mand modeling and environmental manipulation). The study involved a group-based parent-training program called Toddler Talk, which utilized group-play sessions as the context of intervention. All toddlers had a language and/or speech delay, with the majority of children demonstrating expressive language and phonological delays. Parents participated in two workshops and eight play-based, group sessions with either children over 12-14 weeks. The MacArthur Communicative Development Inventories (Fenson, 1993) was used to evaluate any change within the children's vocabulary. Outcome measures revealed that all children within the treatment group demonstrated an increase in expressive vocabulary. Children who began the program with less than 50 words, with

an average of 20.78 words, acquired an average of 70.12 words by the end of the program. Children who entered the program with greater than 50 words, with an average of 215.66 words upon entrance, acquired an average of 129.21 words at the post test. Thus, children who had greater than 50 words prior to the program were observed to attain a greater amount of new words at the end of the program, in comparison to the children who initially demonstrated a less than 50-word lexicon. Regardless of initial words known, the number of the total words produced increased for all children whose parents used vocabulary fostering techniques during play.

To determine what extent play-based intervention increases vocabulary development, Han, Moore, Vukelich, and Buell, (2010) researched the difference between implementing only a storybook reading program and a storybook reading plus a play program. The authors had previously created and conducted a study using Explicit Instructional Vocabulary Protocol (EIVP; Roskos, Vukelich, Han, & Moore, 2007). The EIVP is a seven-step procedure used to discuss new vocabulary words (i.e., clinician says the word, clinician asks the child to say the word, clinician says what the word means, etc.). Although the program was found to significantly increase expressive and receptive vocabulary skills, the children's scores were only found to meet benchmark standards. In an effort to further promote vocabulary skills beyond age-appropriate levels, the authors hypothesized that adding play as an eighth step of the EIVP program would further promote vocabulary for children at risk. Thus, the current study assigned 49 students of a Head Start Program into two groups: (a) receiving EIVP or (b) receiving EIVP + Play. Inclusion criteria for participants included (a) poverty level family income and (b) scored at least one standard deviation below mean on Peabody Picture Vocabulary Test – III

(PPVT; Dunn & Dunn, 1997) and (c) no diagnosis of a disorder. During treatment, the EIVP group received instruction of steps 1-6 for thirty minutes; whereas, EIVP + Play received 20 minutes of EIVP and 10 minutes of dramatic play. Both groups participated in bi-weekly treatment sessions, where 2 words per session were taught. Tutors implementing therapy were provided props and play scripts to maintain consistency across groups. The results indicated that both groups significantly made gains in their expressive vocabulary. The EIVP + Play group made significant higher gains in mean vocabulary growth in comparison to children in the EIVP only group. Additionally, a higher percentage of children (62.5%) within the EIVP +P group performed at age-appropriate levels compared to (44%) children within the EIVP only group. Thus, the combination of play and storybook reading activities is more effective than only implementing strictly storybook reading to promote vocabulary growth in high-risk preschool-age children without a disability. Further research is needed to determine if the findings from this study correlate with children with specific language impairments and if the same results would be observed if parents implemented therapy instead of tutors.

Overall, play has not only been proven as a beneficial context to increase expressive vocabulary, but also general language, cognitive, social, emotional, and literacy skills for many children (Culatta, 1994; Gainsburg, 2007; Han et al., 2010; McConnell, 2002; Westby, 2008). For children with speech and language disorders, play-based intervention is important for two reasons (a) help children generalize new language forms to meaningful situations and (b) maximize the child's zone of proximal development, which allows children to use language to access higher levels of symbolic and conceptual elements while in a supportive environment (Paul & Norbury, 2012).

Targeting Vocabulary through Conversational Intervention

Parent-child dyad conversations across various contexts, including storybook reading and play activities, favorably influence language outcomes for children. Although conversation is also part of the daily routine, studies focusing on specific aspects of conversational intervention have issued mixed results. For example, according to Pretti-Frontczak and Bricker (2004), children's language development can benefit more from continuous, contextualized interactions in everyday settings, rather than decontextualized experiences. Conversely, others have found that children who experience more decontextualized language within the home setting exhibit higher outcome scores on language assessments (Curenton, Craig, & Flanigan, 2008). Regardless, conversations allow children to attempt verbal contributions, learn reciprocal roles of conversation, and learn the cohesive nature of listener-speaker exchanges (Owens, 2008). Overall, children benefit from exposure to conversations rich in sophisticated syntax and varied vocabulary (Hoff, Laursen, & Tardif, 2002).

For children with language disorders, Brinton and Fujiki (1995) advocate using conversational contexts to target language development. Although conversational skills, along with comprehension and use of narratives, is an area of pragmatics that is expected to naturally grow the most during the preschool period (Paul & Norbury, 2012); indirectly targeting social communication through a hybrid-language approach can support language and social knowledge needed to participate in effective conversational exchanges. Furthermore, Brinton and Fujiki (2006) found that repeated support, scaffolding, and practice of new language, within the familiar context of conversations,

should be introduced early in intervention and maintained throughout subsequent intervention.

Several researchers have provided instructions for speech language pathologists or preschool teachers on how to apply conversational techniques to increase their students' vocabulary or overall language performance during play or storybook reading activities. Gilliam and Ukrainetz's (2006) Contextualized Language Intervention uses conversational discourse to discuss book readings and complementary activities to promote several aspects of language simultaneously. Likewise, Culatta, Blank, and Black (2010) suggest that "talking through" expository text in the early school years can be beneficial for all students. Instructional discourse is reported to increase comprehension skills by encouraging students to discuss, question, respond, or comment about the text within the preschool settings. Similarly, researchers have also examined conversational discourse during play to promote vocabulary.

Parent-implemented therapy: increasing vocabulary through conversations. Although parents were not specified as the adults who implemented therapy, only one study within the last 10 years has investigated the effectiveness of conversational intervention during play to promote vocabulary development in prekindergarten children with low vocabulary levels (Ruston & Schwanenflugel, 2010). The researchers examined a conversational intervention which aimed to stimulate linguistic and cognitively complex dialogs between children and adults. "Low vocabulary level", for the child participants, was defined as a pre-experiment assessment score on the EVT-2 falling within the bottom one-third of a normal distribution curve. Each adult participant- "Talking Buddy"-, attended a four-hour workshop to learn and practice general

conversational techniques (e.g., child-directed topics, allow sufficient time for the child to respond, demonstrate active listening, use familiar/interested topics to stimulate conversation, etc.), as well as, specific conversational techniques to target vocabulary (i.e., recast the children's simple words and grammatically incomplete sentence and ask open-ended questions to emphasize novel words and accurate syntax). Seventy-three children, age 4, were divided into two groups: (a) treatment group (b) control group. The treatment group received bi-weekly, 25-minute therapy sessions for a total of 500 minutes. The EVT-2 and a language sample were used to measure expressive language. The results found that children within the treatment group scored higher on the EVT-2 compared to the control group. Likewise, children with low pretest performances who were also in the intervention group were found to have a greater increase in vocabulary diversity, in comparison to children within the control group. Thus, briefly training adults how use conversational strategies during play to increase the depth and breadth of vocabulary for children with low vocabulary levels was found to be effective. However, further demographic information for the child participants would be helpful in determining what population the participants most accurately resemble. Furthermore, the inclusion criteria for this study did not include students who were already receiving language remediation services. Thus, further research is needed to examine if similar results from this study would be found for children with language impairments.

Parents' Outcomes After Parent-Training

Parents' Perceptions

In recent years, published research concerning persons with disabilities has shifted from investigating pathological perspective of families to a perspective that

emphases effective coping strategies used by families for the purpose of positive change (Romski et al., 2011; Turnbull & Turnbull, 1993). In an effort to identify common perceptions of parents who are raising a child with a disability, Hastings and Taunt (2002) reviewed view several articles. The researchers found that parents of children with disabilities reported to have higher stress levels than parents of typically developing children. However, parents of children with disabilities were found to have similar or even greater levels of positive perceptions in comparison to families raising children who are typically developing (Hastings & Taunt, 2002). Thus, the researchers purported that positive perspectives held by mothers were found to act as a coping strategy for parents raising children with disabilities.

A more recent article by Romski et al. (2011) speculated that the finding from Hasting and Taunt (2002), regarding positive perceptions, could be applied to parents' perspective of toddlers' language skills who had developmental delays. Before and after treatment was provided, each parent completed the Parent Perception of Language Development (PPOLD; Romski, Adamson, Cheslock, & Sevcik, 2000). The PPOLD was a parent questionnaire used to determine parents' perspective of their children's language development. Child participants were randomly assigned to three treatment groups: (a) augmentative communication input by an adult, (b) augmentative communication output skills by the child, and (c) spoken communications by the child. After completing 24-sessions, parents' perspectives were reassessed using the PPOLD. According to Romski et al. (2011), parents' perceptions of their child's communicative development became more positive after the parent–child dyad participated in an early intervention program. Mixed results were found in regards to the parents' perceptions of the severity of their

child's language deficits. Lastly, the perceptions of the parents' own abilities were minimally addressed within the study.

Parents' Knowledge

Changes in parents' knowledge related to language and literacy concepts and milestones of development after parents have participated in a parent-training program has not been reported within previous literature. However, research supports informing parents to increases their knowledge regarding their child's communication impairment is an important part of permitting SLPs and parents to work in an effective partnership (Glogowska, 2002).

Parents Use of Strategies

Previous research has found an association between changes in parents' behavior and children's language growth after parents are taught and apply intervention strategies (Kashinath et al., 2006). Delaney and Kaiser (2001) investigated the short term effects of training parents, of children 41 and 47 months of age at risk for language problems, to use various strategies. Parents were taught to use three broad strategies: (a) to limit the adult's verbal turns, (b) to increase the adult's responses to their child's communication, and (c) to use expansions to increase their child's communication. All four parents learned the strategies and applied the strategies within their home. However, maintenance testing was out of the scope of this study.

In response, Hancock, Kaiser, and Delaney (2002) investigated the maintenance of learned strategies 6 months after the conclusion of a parent-training program. Five mothers were taught strategies to use with their preschool-age children. Child participants were 38 and 46 months of age at risk for language delays as indicated by the

children's scores on the Preschool Language Scale (PLS3; Zimmerman, Steiner & Pond, 1992). Parents were taught various strategies for language modeling and responsive interaction. More specifically, ten strategies were taught that included teaching parents to maintain balanced turn-taking, provide semantically related responses, and give expansions during interaction with their children. The parents' use of strategies were evaluated at the baseline, throughout intervention and 6 months after intervention. All five mothers learned and applied the strategies throughout the intervention and months after the intervention was initially taught. At the end of treatment, parents were found to be more responsive and use more expansions, appropriate pauses, praises, and models of appropriate language. Additionally, parents used less instructions when engaging in play with their children. Lastly, of the instructions given during play, instructions were made more explicit. At the 6-month follow-up, all five parents were observed to have generalized the strategies within the home environment. Overall, once parents are taught language facilitation strategies, they have been shown to apply and generalize the strategies within their home. Additional research regarding the type and frequency of the strategies used within the home after a parent-training would strengthen the existing literature.

Research Questions

According to the studies reviewed above, the following statements can be hypothesized: (a) children's language skills, including vocabulary skills, are influenced by parent-child interactions, (b) training parents to implement language facilitation strategies can increase children's vocabulary skills (c) shared-storybook reading and play are favorable contexts to facilitate vocabulary skills and (d) providing a brief, but

informative parent-training program can impact preschool children's vocabulary growth for children with language impairments. While research seems to promote parent-training as an effective method of intervention for children with deficits in vocabulary, inconsistent results within the current research exist. Limitations of current available literature included (1) the investigation of discrete component of language facilitation strategies (e.g., expansions) or contexts (e.g., solely during shared-storybook reading activities or solely during play), (2) the large focus on the toddler population, (3) interventionists were other caregivers or educators other than parents, (4) parent-training curriculums varied widely and mostly addressed intervention techniques, and (5) minimal research regarding the change in parents' perceptions, knowledge and strategies used after participating in a parent-training program. Two research questions were addressed in this study. When providing a parent-training program utilizing current, evidence-based practices:

1. To what extent does the parent-training program influence children's vocabulary development?

Hypothesis #1: Children whose parents participated in a language facilitating parent-training program will demonstrate an increase in expressive vocabulary ability, as measured by the EVT-2.

2. To what extent does the parent-training program influence a parent's role as a language facilitator?

Hypothesis #2: Parents who participated in a language facilitating parent-training program will demonstrate an increase in perception of their ability, their child's abilities,

knowledge, and strategies used when interacting with their child, as measured by a parent questionnaire.

CHAPTER 3

RESEARCH METHODOLOGY

Purpose

The purpose of the current study was to evaluate the effectiveness of a brief, but informative parent-training program. Utilizing conversation-based interaction during storybook reading activities and play the program aimed to enhance vocabulary skills of preschoolers with and without a formal diagnosis of a language disorder.

The current study intended to fill the gaps found in the existing literature pertaining to efficacy of parent-training programs. Specifically, the current study examined all of the following elements (a) efficacy (b) of a brief, but informative parent-training program (c) to enhance children's vocabulary (d) for children 40-70 months of age (e) with language deficits. Additionally, the program itself uniquely incorporated (f) definition of key terms related to communication, language and language disorders (g) developmental milestones for language, literacy and play, (h) strategies to facilitate vocabulary development within the context of play and shared-storybook reading.

Study Design

The design of this study was a pre-experimental within-subject, /posttest design. For the child participants, pretest data was collected to quantify benchmark performance prior to treatment. Wherein*, EVT-2* was used to evaluate each child's expressive vocabulary. For the parent participants, a pretest questionnaire was used to gather

qualitative data prior to treatment. A parent-training program, the independent variable for this study, was implemented over three sessions over four weeks. Post-treatment data was collected at the conclusion of the program which was five weeks after pretesting and the initial parent-training session occurred. Maturation threat was controlled by limiting the time between the pre- and posttest administration. For the child participants, a parallel version of EVT-2 (Version B) was used to reassess vocabulary skills in order to control for test effect. For adult participants, an identical version of the pre-treatment questionnaire was utilized as the posttest. Quantitative data was evaluated using descriptive statistics. Qualitative data was coded and thematically analyzed.

Participants

Participants were recruited by a convenience sample taken from the CSULB Speech and Language Clinic from April 16-22, 2014. Flyers were dispersed to all parents of preschool-age children who attended the clinic. One parent-child dyad who participated was referred to the study by a local kindergarten teacher. Parents who demonstrated interest in the study signed a consent form which illustrated the potential risks and benefits of participation.

The inclusion criteria required each child to be: (a) a preschool-age student between the ages of 36-70 months and (b) to have a parental concern or a formal diagnosis of a language disorder. Inclusion criteria of the parent participants included: (a) a willingness to participate in three parent-training session and (b) a proficiency in English. A proficiency in English was required of the parent participants since the parent-training was conducted in English. Children participants were excluded if they had a formal diagnosis of a concomitant disorder (i.e., intellectual disability, autism

spectrum disorders, etc.). Although these parent-child dyads did not meet the inclusion criteria for this study, they were allowed to participate in the program and data was collected but not analyzed as part of this study. Six parent-child dyads completed this study.

Description of Child Participants

The six child participants ranged from 47-69 months of age (see Table 1). English was the primary language identified across all participants. At the time of this study, all but one child, participant 4, were diagnosed with a language disorder and enrolled in the CSULB Speech and Language Clinic to receive speech and/or language services.

TABLE 1. Description of Child Participants

Participant	Gender	Age	Bilingual	Language Spoken	Age when Babbled	Age at First Word
1	Male	54	Yes	English/ Spanish	6	16
2	Male	65	Yes	English/ Spanish	2	6
3	Male	63	No	English only	12	36
4	Female	55	Yes	English/ Korean	4	12
5	Male	47	No	English only	6	12
6	Male	69	No	English only	6	6-9

Note: age reported in months.

Description of Parent Participants

Only mother or father caregivers participated in this study. Parent participants 1, 3, 5, and 6 were mothers and participants 2 and 4 were fathers. Only parent participant 1

had previously participated in parent-training program prior to the current study.

Measures Used

Measure for Child Participants

The Expressive Vocabulary Test –Second Edition (EVT-2; Williams, 2007). The current study used EVT-2 to measure the change in vocabulary for each child participant. EVT-2 is an individually administered, norm-referenced test that evaluates expressive vocabulary and word retrieval of person ages 2:6 to 90+. The examinee is presented with a variety of pictures, one-by-one, and asked a variety of simple questions (e.g., "What is this?"). The examinee is required to produce a one-word labels or synonyms. The test is comprised of 190 pictures of nouns, verbs, and adjectives. For preschool-age examinees, the average testing time is 10-15 minutes. Two parallel versions, Version A and B, are available. EVT-2 was administered and scored according to the description in the test manual. The researcher chose to utilize the EVT-2 since it has been found to be more sensitive than other comparable vocabulary assessment tests (Webb et al., 2008). Additionally, because the parent-training was geared to specifically target expressive language, an assessment of expressive vocabulary was appropriate.

Measure for Parent Participants

A parent questionnaire (See Appendix A) was created by the principle investigator. The questionnaire had not been tested for validity or reliability at the time of use. The questions on the questionnaire covered three general topics: parent's perception of their abilities and their child's abilities, strategies parents use when interacting with their child and parent's knowledge of language related concepts. The questionnaire was comprised of 22 questions which incorporated yes/no (5 total

questions), Likert Scale (11 total questions), fill-in-blank (3 total question) and open-ended questions (3 total questions). To ensure sufficient data, 2 of the 22 questions had two parts (Question 5 and Question 12). For example, Questions #5 stated *"During play, my child uses a variety of vocabulary words"*. The examinee was required to answer a yes/no question and an opened ended question-*"please explain"*. Therefore, these questions will be addressed as "Question #___ a. or b." during the analysis and discussion chapters of this thesis. In addition, 7 of the 22 questions were used as foils or indicators of what level the primary investigator should begin the parent-training (Questions # 1, 6, 10, 14, 15, 17, 18). Thus, these 7 questions were not formally analyzed as part of this study.

Data Collection Procedures

Research Assistants

Prior to implementing pre- and posttest procedures, research assistances were trained to administer the test battery. The research assistants were four graduate level students and one undergraduate level student from the Department of Speech and Language Pathology at CSULB. All assistants were proficient in English and had previously attended a course devoted to assessment of speech and language. All assistants were familiar with the administration procedures of EVT-2 and any questions pertaining to administration were answered to obtain the consistency and 100% agreement on the procedures. The one undergraduate assistant participated in an additional, comprehensive 1-hour workshop where the assistant was taught to maintain standardization across all examinees, when to allow the participants to take breaks from

testing, and the importance of upholding a code of conduct during all interactions with participants.

Child Participants

Pretest, utilizing the EVT-2, was conducted within one week prior to the initial parent-training session. All researcher assistants, along with the primary investigator, administered the pretests. Because English was the dominant language reported for all children, English was used during test administration. Each child participant was administered the pretest one-on-one in a quiet clinic room within the CSULB Speech & Language Clinic. Each response was transcribed directly onto the EVT-2 protocol. The posttest assessment was conducted two weeks after the third parent-training session and followed identical procedures as the pretest. All children were provided with breaks from testing when the administrators felt it was necessary (e.g., child demonstrated fatigue, inattention, or appeared to be disinterested) or when a child requested a break. Once all tests were administered, the principle investigator scored each EVT-2 protocol per test manual instruction. An audio recording was available if any response was transcribed unclearly.

Parent Participants

Each parent participant was asked to complete a pencil-and-paper pretest questionnaire at the opening of the initial training session and a posttest questionnaire at the conclusion of the final session. The oral instructions given for the pretest and posttest were, *"Please fill out this questionnaire to the best of your ability. You may or may not know all answers but please answer each question as honestly as you can".* Parents were allowed as much time as they needed to thoroughly complete the questionnaire. The pre-

and post-training questionnaires were identical in format and procedure. In order to control for the Hawthorne effect, the parents were never explicitly told that the intentions of the questionnaire was to measure the effects of the parent-training.

Parent-Training Program

Each parent-participant attended 3 training sessions over a 5 week period. Each session was 2 hours in length. Childcare was provided by research assistance for every session. See Figure 1 below for a flow chart depicting the topics discussed and Table 2 for all language facilitation strategies taught during each session.

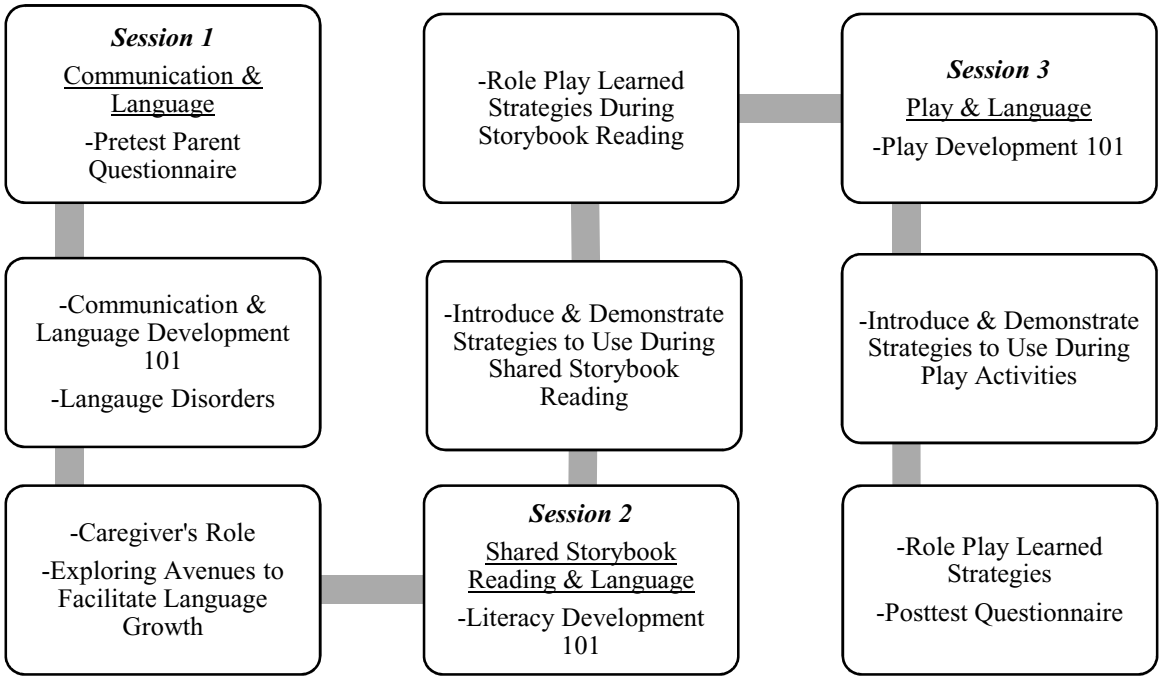

FIGURE 1. Flow-chart of the parent-training program.

The first session included an introduction of both graduate student presenters and each parent participant. Parents were taught the difference between communication and language, aspects of communication (e.g., extralinguistics, paralinguistic), aspects of

language (i.e., content, form, and use), development of language, disorders of language, the importance of a caregiver's role in facilitating a child's language development, and basic language facilitation strategies taught across sessions (see Table 2).

The second parent-training session focused on shared storybook reading as a context to facilitate language growth. Parents were taught the relationship between language and literacy, the importance of early reading experiences on literacy development, developmental milestones of early literacy, and the difference between storybook reading versus shared storybook reading. In addition, parents were introduced to general and specific vocabulary enhancing strategies during shared storybook reading. The researchers used video demonstrations to explicate each strategy taught. Lastly, parents were informed of how to increase their child's appeal to books, implement pre-literacy activities, and to select books to build their child's language.

The third and final session focused on using the context of play to facilitate language growth. Parent participants were informed about the importance of play, the connection between play and language growth, development of play skills, different types of play, selecting toys to build their child's language, how to use language stimulating strategies during play, and language focused game ideas.

The procedures were similar across all training sessions. At the beginning of each session, parents were encouraged to share any updates, experiences, or feedback in regard to practically applying the knowledge, skills or strategies learned from previously attended sessions. Likewise, parents were encouraged to ask questions of clarification to ensure that each parent participant understood the content presented. Supplemental resources were provided throughout each parent-training sessions. Various handouts

included the American Speech and Hearing Association's (ASHA) definition of language disorder, a visual depiction of the oral-to-literate continuum, developmental charts for language, play and literacy, ASHA's recommendations for facilitating language for children 4 to 6 years of age, lists of various language focused activities, a tip sheet promoting vocabulary learning for infants through preschoolers, ideas to prompt language and literacy within the home setting, a description of early literacy components and characteristics of books to promote such components, a referred book list for children 4-5 years of age, the common core reading standards for literature kindergarten through fifth grade, and a types-of-play chart. Furthermore, each parent was given a "Facilitating Language Log" (See Appendix B) to document of their daily implementation of strategies and activities taught during the parent-training sessions. Each parent was asked to record which activity and strategy was used, as well as, the time spent each day implementing the strategies to promote their child's language. Lastly, at the conclusion of each session, parents were asked to complete a 5-6 question quiz that was not collected to test their knowledge gained during that session.

TABLE 2. Language Facilitation Strategies Taught Across Sessions

Session	Content Covered	Language Facilitating Strategies
Session 1 *(2 Hours)*	-General Language Facilitating Techniques	General Language Facilitating Techniques: 1) Eye-to-Eye 2) Follow the child's lead 3) CAR (C = comment and wait, A = ask a simple question and wait, R = respond by elaboration) (Washington Learning Systems, 2010)

TABLE 2: Continued

Session	Content Covered	Language Facilitating Strategies
Session 2 (2 Hours)	Language & Shared Storybook Reading	-Using CAR during shared storybook reading -Follow the hierarchy of asking questions (dependent on child's ability and interest; Owens, 2008) -Linguistic Facilitations (Gillam & Ukrainetz, 2006) -Syntax Expansions • Semantic Expansions • Recasts • Prompts • Elaboration Questions • Vertical Structure -Regulatory Facilitations (Gillam & Ukrainetz, 2006) • State the goal or target of activity • Compare and Contrast words or grammatical structures • Provide informative feedback on whether what the child said was right or wrong. -Increasing Appeal to Shared Storybook Reading: • Allow parent child collaboration • Allow child to direct and control verbal and nonverbal elements • Encourage child to have a more active role • Ask limited questions when looking at a story • Comment about pictures not the words being used in the story. (Kaderavek & Sulzby, 1998) • Use pauses • Allow your child to pick location and book • Let your child manipulate the book • Match books to your child's interests. • Ask your child to "read" to you (Justice,& Kaderavek, 2002) -How to implement a literacy based language intervention activity (Gilliam & Ukrainetz, 2006) • Activate prestory knowledge: use graphic organizer and discussion • Shared reading of the entire book • Post story comprehension discussion • Implement various activities focusing on one aspect of language at a time. (i.e., semantic - vocabulary, syntax, narrative, or pragmatics)

TABLE 2: Continued

Session	Content Covered	Language Facilitating Strategies

		• Example: Vocabulary
		  o Select vocabulary from storybook
		  o Make word book using vocabulary
		  o Define and discuss words so child can understand
		  o Create wall chart to help child remember words
		-Encourage word use across other activities throughout the day

Session 3 *(2 Hours)*	Language & Play	-Play purposefully (Kaiser & Roberts, 2013) • Play and engage • Follow your child's lead • Notice and respond • Model language • Prompt language • Mirroring • Mapping • Expanding • Arranging the environment -Use CAR during play -Learning new vocabulary words: • Use semantic and phonological cues (Gray, 2005) • Use forced choice

The SPSS software, version 20.0, for Macintosh computers was used to analyze the data gathered. Descriptive analysis including mean and standard deviation were generated for the questions answered by the Likert Scale or yes/no questions. See Table 3 for dummy coding for Likert Scale questions' scoring criteria. See Table 4 for the descriptive criteria for the qualitative analysis of error responses.

TABLE 3. Scoring Criteria for Parent Questionnaire Likert Scale Questions

Points	Scoring Criteria
1	Strongly Disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly Agree

TABLE 4. Descriptive Criteria for Qualitative Analysis of Error Responses

Category	Descriptive Criteria
Semantically or Morphologically Related	Semantically or morphologically related to the stimulus or to the correct response
Not Related	Not related to the answer or repeated part of the question
No response	Did not provide a response

CHAPTER 4

RESULTS

Child Participants: Pre- and Posttest EVT-2 Results

Hypothesis #1: Children whose parents participate in a language facilitating parent-training program will demonstrate increase in expressive vocabulary ability, as measured by the EVT-2.

The EVT-2 was the only measure used to evaluate the vocabulary of child participants. Of the 6 participating children, 6 completed the pre-and posttest. Standard scores on the EVT-2 was collected and analyzed. Due to a small sample size, descriptive statistics were used to analyze the data collected from the pre- and posttest for each child participant. Additionally, each student's pre- and posttest standard score mean and standard deviation were compared. Figure 2 shows the pre- and posttest standard scores from the EVT-2 before and after parent-training.

The mean pretest standard score on the EVT-2 was 101.5 (SD = 16.93) for the child participants. The mean posttest standard score on the EVT-2 was 104.33 (SD = 13.45) for the child participants. The mean gain for all child participants was 2.83 and standard deviation decreased by 3.48 from pre- to posttest (see Table 5).

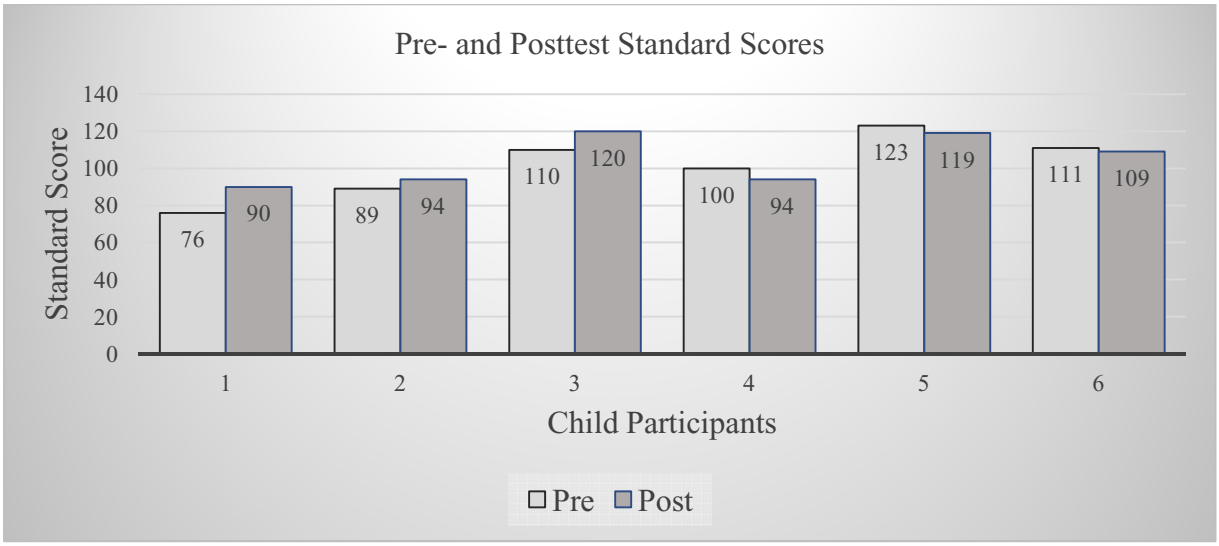

FIGURE 2. Pre- and post-parent-training child participant standard scores on EVT-2.

TABLE 5. Mean and Standard Deviation for Pre- and Posttest EVT-2 Standard Scores for Child Participants

	Mean	Standard Deviation
Pretest	101.50	16.93
Posttest	104.33	13.45
Difference between Pre-and Posttest	+2.83	-3.48

Child participants 1, 2, and 3 demonstrated an increase in their standard scores from pre- to posttest evaluation. Participant 1 received a standard score of 76 and 90 on the pretest and posttest respectively. Participant 1 increased their standard score by 14 points. Participant 2 received a standard score of 89 and 94 on the pretest and posttest respectively. Participant 2 increased their standard score by 5 points. Participant 3 scored a standard score of 110 on the pretest and 120 on the posttest. Participant 3 increased their standard score by 10 points. For participants 1-3, the mean standard score

for the pretest was 91.67. The mean standard score on the posttest, for participants 1-3, was 101.33.

Child participants 4, 5, and 6 demonstrated a decrease in their standard scores from pre- to posttest evaluation. Participant 4's standard score decreased from 100 on the pretest to 94 on the posttest, a 6 point decrease. Participant 5's standard score decreased from 123 to 119 on the pre- to posttest respectively. Participant 5's standard score decreased by 4 points. Participant 6's standard score decreased from 111 on the pretest to 109 on the posttest, a 2 point decrease. For participants 4-6, the mean standard score on the pretest was 111.33. The mean standard score on the posttest was 107.33.

Table 6 below shows the percentage of correct responses per part of speech (i.e., noun, verb or attribute) for each participant at pretest and posttest evaluation.

TABLE 6. Percentage of Correct Responses Per Parts of Speech on EVT-2 Pre and Posttest

Participants	Pretest/Posttest	Ceiling Item	Nouns	Verbs	Attributes
Participant 1	Pretest	50	65.79 %	0%	62.50%
	Posttest	55	75%	0%	100%
Participant 2	Pretest	70	63.33%	66.66%	71.43%
	Posttest	81	60%	75%	83.33%
Participant 3	Pretest	84	85.37%	75.00%	66.67
	Posttest	114	70.77%	50.00%	81.82%
Participant 4	Pretest	74	72.50%	33.33%	63.63%
	Posttest	63	69.70%	100%	100%
Participant 5	Pretest	95	77. 14%	50.00%	52.94%
	Posttest	89	76.06%	60.00%	69.23%
Participant 6	Pretest	93	89.36%	60.00%	63.64%
	Posttest	119	65.21%	44.44%	54.55%

Participant 1 demonstrated an increase in the percentage of correctly identified nouns and attributes from pretest to posttest. Additionally, this participant increased the number of answered item on the posttest than pretest as demonstrated by the ceiling item increase.

Participant 2 demonstrated a decreased in the percentage of correctly identified nouns but an increased in correctly identified verbs and attributes from pretest to posttest. Participant 2 showed an increased in the number of answered items on the posttest in comparison to the number of items answer on the pretest.

Participant 3 was observed to increase in the percentage of correctly identified attributes but a decrease in the percentage of correctly identified nouns and verbs from pre- to posttest. However, this participant increased the number of items identified from pretest to posttest.

Participant 4 was observed to increase in the percentage of identified verbs and attributes but decrease in the percentage of nouns identified. This participant also decreased in the number of questions answered from pre to post test.

Participant 5 was observed to increase in the percentage of identified verbs and attributes but decrease in the percentage of nouns identified from pretest to posttest. This participant also decreased in the number of questions answered from pre to post test.

Participant 6 was observed to decrease in the percentage of identified nouns, verbs and attributes from pretest to posttest but did increase in the number of questions answered from pre to post test.

In summary, most (5/6) participants were found to increase the percentage of identified attributes from pretest to posttest. Half (3/6) of the participants were found to

increase in the percentage of identified verbs and one participant was found to increase in the percentage of nouns when comparing pretest to posttest performance. Lastly, only 1 participant was found to decrease in all three word categories.

An analysis of participants' error responses provides additional qualitative data for each participant's performance. Table 7 below depicts the percentage of each participant's error response as it relates to the type of responses observed (i.e., semantically or morphologically related, unrelated, or no response).

TABLE 7. Percentage of Each Type of Error Response on EVT-2 Pre-and Posttest

Participant	Pre- or Posttest	Total Number of Incorrect Items	Semantically or Morphologically Related Response	Unrelated Response	No Response
Participant 1	Pretest	20	55.55%	11.11%	33.33%
	Posttest	9	77.78%	11.11%	11.11%
Participant 2	Pretest	14	12.18%	0%	81.82%
	Posttest	19	61.11%	11.11%	27.78%
Participant 3	Pretest	9	66.67%	22.22%	11.11%
	Posttest	25	40.00%	12.00%	48.00%
Participant 4	Pretest	17	76.47%	11.76%	11.76%
	Posttest	10	60%	40%	0%
Participant 5	Pretest	27	48.15%	0%	51.85%
	Posttest	22	40.91%	27.27%	31.82%
Participant 6	Pretest	10	10%	50.00%	40.00%
	Posttest	34	39.39%	9.09%	51.51%

Participant 1 demonstrated a decrease in the number of items incorrectly identified from pretest to posttest. Participant 1 also increased their percentage of semantically or morphologically related responses from pretest to posttest. This participant maintained their percentage of unrelated responses but decreased the percentage of no response responses from pretest to posttest evaluation.

Participant 2 was found to increase in the number of items incorrectly identified from pretest to posttest. Participant 2 also increased their percentage of semantically or morphologically related responses and decreased the percentage of no response responses from pretest to posttest. However, this participant also increased the percentage of unrelated responses from pretest to posttest.

Participant 3 demonstrated an increase in the number of items incorrectly identified from pretest to posttest. Participant 3 decreased their percentage of semantically or morphologically related responses yet decreased the percentage of unrelated responses from pretest to posttest. This participant also increased the percentage of no responses from pretest to posttest.

Participant 4 demonstrated a decrease in the number of items incorrectly identified from pretest to posttest. Participant 4 decreased their percentage of semantically or morphologically related responses and increased in the percentage of unrelated responses from pretest to posttest. This participant was also found to decrease their percentage of no responses from pretest to posttest.

Participant 5 was found to increase the number of items incorrectly identified from pretest to posttest. However, participant 5 decreased their percentage of semantically or morphologically related responses and increased in the percentage of unrelated responses from pretest to posttest. This participant was also found to decrease their percentage of no responses from pretest to posttest.

Participant 6 decreased the number of items incorrectly identified from pretest to posttest. Participant 6 decreased their percentage of semantically or morphologically related responses and increased in the percentage of no responses from pretest to posttest.

However, the participant was also found to decrease their percentage of unrelated responses from pretest to posttest.

Overall, pretest to posttest comparisons reveal that half of the child participants increased their use of semantically or morphologically related error responses and decreased their use of no responses. However, the majority of the participants increased their use of unrelated responses. No other trends could be determined from the mixed results.

Parent Participants: Pre- and Posttest Questionnaire Results

Hypothesis #2: Parents who participated in a language facilitating parent-training program will demonstrate an increase in perception of their ability, their child's abilities, knowledge, and strategies used when interacting with their child, as measured by a parent questionnaire.

Due to a small sample size, descriptive statistics (i.e., mean) was used to analyze the data collected. In the following section, comparison data was used to explicate the differences observed in the pre-and posttest data gathered for each question. The questions have been separated based on the type of the question (i.e., yes/no, Likert Scale, open-ended, and fill-in-the blank questions) for the purpose of clarity.

Yes/No Questions

Question # 5a: *During play, my child uses a variety of vocabulary words. Yes/No?* The pretest revealed 2/6 (33%) parents selected "yes"; whereas, 6/6 (100%) parents selected "yes" on the posttest.

Question # 8: *I use the strategy C. A. R. when interacting with my child. Yes/No?* The pretest revealed 0/6 (0%) parent selected "yes"; whereas, 6/6 parents selected "yes" on the posttest.

Likert Scale Questions

Table 8 displays the mean scores for the pre-and posttest as well as the difference between the pre- and posttest mean scores and standard deviations.

TABLE 8. Parent Participants' Likert Scale Questions' Mean Score

Question Number	Pretest *Mean Score*	Posttest *Mean Score*	Difference between Post and Pretest Scores
2	2.33	2.83	0.5
3	4.67	3.83	-0. 84
4	3.00	3.17	0.17
7	3.00	4.17	1.17
12a	4.00	4.83	0.83
13	3.67	4.50	0.83
19	4.67	5.00	0.33
20	3.00	4.50	1.5
21	3.67	4.17	0.5
22	3.67	4.33	0.66

Question #2*: I feel my child's language is adequate to meet the demands of kindergarten*. The parents' pretest mean Likert Scale score for Question #2 was 2.33 and posttest score was 2.83. For this question, the mean score from pretest to posttest increased by .5.

Question #3: *I feel comfortable and confident helping to facilitate my child's language development.* The parents' pretest mean Likert Scale score for Question #3 was 4.67 and posttest score was 3.83. For this question, the mean score from pretest to

posttest decreased by .84. Question #3 was the only Likert Scale question observed to decrease from pretest to posttest.

Question #4: *When my child speaks, his/her words are usually in the correct order*. The parents' pretest mean Likert Scale score for Question #4 was 3.00 and posttest score was 3.17. For this question, the mean score from pretest to posttest increased by .17.

Question #7: *I use strategies to facilitating my child's language growth.* The parents' pretest mean Likert Scale score for Question #7 was 3.00 and posttest score was 4.17. For this question, the mean score from pretest to posttest increased by 1.17.

Question #12a: *There is a difference between book sharing and book reading*. The parents' pretest mean Likert Scale score for Question #12a was 4.00 and posttest score was 4.83. For this question, the mean score from pretest to posttest increased by .83.

Question #13: *I feel comfortable selecting books that my child would find interesting and facilitate language development.* The parents' pretest mean Likert Scale score for Question #13 was 3.67 and posttest score was 4.50. For this question, the mean score from pretest to posttest increased by .83.

Question #19: *I believe that play is NOT strongly connected to language development.* The parents' pretest mean Likert Scale score for Question #19 was 4.67 and posttest score was 5.00. For this question, the mean score from pretest to posttest increased by .33.

Question #20: *I feel comfortable selecting toys that are best for enhancing my child's language and play skills.* The parents' pretest mean Likert Scale score for

Question #20 was 3.00 and posttest score was 4.50. For this question, the mean score from pretest to posttest increased by 1.5.

Question #21: *When I play with my child I am often at eye level.* The parents' pretest mean Likert Scale score for Question #21 was 3.67 and posttest score was 4.17. For this question, the mean score from pretest to posttest increased by .5.

Question #22: *When I play with my child I often follow my child's lead.* The parents' pretest mean Likert Scale score for Question #2 was 3.67 and posttest score was 4.33. For this question, the mean score from pretest to posttest increased by .66.

Pretest mean score for the all Likert Scale questions was 35.67. Posttest mean score for all Likert Scale questions was 41.33. The difference between the pretest and posttest mean scores was +5.66. Thus, posttest scores increased by 5.66 points from the pretest (see Table 9).

TABLE 9. Parent Questionnaire: Total Likert Scale Scores Before and After Training

	Pretest	Posttest	Difference Between Post- and Pretest Scores
Mean	35.67	41.33	5.66

Open-ended Questions

Question #5b: *During play, my child uses a variety of vocabulary words. Please explain.* The pretest revealed 4/5 (80%) parents reported their child to use limited vocabulary. Whereas, 3/3 (100%) parents stated their child was observed to attempt the use of a greater depth and breadth of vocabulary on the posttest. One parent on the pretest and two parents on the posttest did not respond to this question. Additionally, one

parent, on the posttest, stated examples of words his/her child was observed to use instead of reflecting on the overall quality of their child's vocabulary.

Question #12b: *There is a difference between book sharing and book reading. Please explain.* The pretest found that 3/6 (50%) parents demonstrated an accurate distinction between book sharing and book reading. Whereas, 5/5 (100%) parents demonstrated an accurate distinction between book sharing and book reading on the posttest. However, one parent did not respond on the posttest.

Fill-in-the Blank Question

Question # 9: *I use C.A.R. approximately ____ times a day with my child.* The pretest revealed parents used C.A.R. 0 (0%) times a day. The posttest results found that 6/6 (100%) parents used C.A.R during a given day. Of the 6/6 (100%) who used the strategy C.A.R., 4/6 (67%) parents reported to use C.A.R. 1-5 times a day and 2/ 6 (33%) parents reported to use C.A.R. during all interactions throughout their day.

Question # 11: *I read storybooks with my child _____ times a week.* Pretest results found 5/6 (83%) parents read with their child 4+ times a week. Post test revealed 6/6 (100%) parents read with their child 4+ times a week.

Question #16*: I play with my child _____ time a day/week (circle one) for approximately ____ minutes.* The pretest found 2/6 (33%) parents reported playing with their child 5 times a week or more and 3/6 (50%) parents reported playing with their child for 130 minutes per week or more. The posttest revealed that 5/6 (83%) parents reported playing with their child 5 times a week or more and 4/6 (67%) parents reported playing with their child for 130 minutes per week or more. A comparison of pretest to posttest

scores revealed an increase in the frequency and duration in which parents' engaged in play with their child per week.

CHAPTER 5

DISCUSSION

The objective of this study was to understand the extent to which a parent-training program was effective in increasing (1) vocabulary skills of children between the ages of 40-70 months with a suspicion or diagnosis of a language disorder and (2) parent's perception of their ability to facilitate their child's language learning, perception of their child's language ability, use of language facilitating strategies, and knowledge as it relates to concepts of language and literacy. The parent-training program focused on teaching parents how to increase their child's expressive language by implementing strategies and activities intended to promote language development. The data collected revealed several trends. For the purpose of simplification, results will be discussed based on the two research hypotheses.

Hypothesis #1

Hypothesis #1: Children whose parents participate in a language facilitating parent-training program will demonstrate an increase in expressive vocabulary ability, as measured by the EVT-2.

Despite the results regarding individual parts of speech (i.e., nouns, verbs and attributes) and types of error responses (i.e., semantically or morphologically related, unrelated, and no response) which demonstrated mixed results; overall, the trained parents participating in the study had a positive effect on their child's vocabulary ability,

as indicated by a mean increase in child participants' expressive vocabulary outcomes at posttest evaluation. Therefore, the results supported Hypothesis #1.

The results of this study found that the majority of child participants were able to identify more attributes than nouns and verbs after their parents' participated in the parent-training program. Additionally, half of the child participants were found to increase their percentage of verbs identified from pretest to posttest. Comparing pre-and posttest data regarding an increase in each type of speech is unique to this study as other parent-training efficacy studies that have analyzed expressive vocabulary have only investigated the diversity of parts of speech (Crowe et al., 2004; Girolametto et al., 1996).

The analysis of error responses revealed that half of the child participants demonstrated an increase in their use of semantically or morphologically related responses to stimulus questions on the EVT-2 from pretest to posttest. Additionally, half of the children were found to use more semantically or morphologically related error responses in comparison to no response or unrelated responses across all pre and posttest evaluations. One participant primarily used unrelated response errors at pretest; however, posttest results revealed that that not one participant used unrelated responses most frequently. Thus, the results from the error response analysis led to a possible conclusion that the parent-training may potentially expand the children's semantic knowledge. However, these results were only observed in half of the children. As found in previous research, many children with language disorders recall fewer semantic features of learned words (Alt et al., 2004). The results from this study coincide with the finding of Barachetti & Lavelli (2011). The authors found that children with SLI were only able to

provided minimally correct responses, even when mothers provided semantically related information.

The mean increase in expressive vocabulary standard scores at posttest evaluation indicated that the trained parents participating in the study had a positive effect on their child's vocabulary growth. Further, analysis of each child participants' performance on the pretest and posttest revealed mixed results. Half of the child participants were observed to perform better on the posttest than the pretest; whereas, the other half did not perform as well on the posttest in comparison to the pretest. Nevertheless, the children who demonstrated an increase in their posttest standard score were observed to make considerably more gains in comparison to those who demonstrated a decrease from pretest to posttest. Thus, children who demonstrated lower levels of expressive vocabulary prior to the parent-training were observed to make a greater increase after the parent-training. Additionally, those who demonstrated a decrease in standard scores had 3 out of the 4 highest pretest scores. Thus, a possible reason for not seeing an increase in the 3 participants who did not improve standard scores may be attributed to higher pretest score.

In light of the findings, children who have lower levels of expressive vocabulary may benefit more from their parents participating in a parent-training program, in comparison to children who start with higher levels of expressive vocabulary. This finding is contrary to Gaines & Gaboury (2004) finding as they determined that children with less than 50 words before a parent-training program were observed to acquire less new words than children who demonstrated more than 50 words prior to the training program. However, this study used participants who were toddlers with language delays

instead of preschool-age children, as found in the current study. Although the current study did not investigate the approximate number of words used by child participants prior to the study, the parent-training focused on teaching strategies to help children who demonstrated a variety of vocabulary levels. Therefore, the results of the current study provide supplementary information in regards to the effectiveness of training parent-training on preschool-age children with vocabulary deficits.

The aggregate of the current study's results are congruent with previous investigations in finding that parent-training is effective in increasing children's vocabulary outcomes (Buschmann et al., 2009; Roberts & Kaiser, 2011). In a meta-analysis, Roberts & Kaiser (2011) found a statistically significant increase in expressive vocabulary after parent-training was administered. Furthermore, a collection of raw data from all studies that investigated vocabulary growth after parent-training indicated at least a 52 word increase for children who parents were trained in comparison to children whose parents were not trained. Although the current study did not reveal as statistically significant results due to the small sample size, it enhanced the large body of research supporting the efficacy of parent-training. Within the meta-analysis, studies that investigated vocabulary growth used either MacArthur-Bates Communication Development Inventory (CDI) or mother's report of total words or number of different words collected in a language sample. Whereas, the current study measured expressive vocabulary growth through a norm-referenced test.

Similarly, the results of the current study were found to align with Buschmann et al. (2009) where a comprehensive, German standardized assessment (SETK-2) was used in addition to the MacArthur-Bates CDI. Results indicated that toddlers whose parents

received training were found to have greater gains in vocabulary growth as measured by parent report and the standardized subtest, in comparison to children who did not receive intervention. Additionally, language outcome scores indicated that the majority of the participants within the treatment group surpassed the late talker criteria. However, the participants of Buschmann et al. (2009)'s study were toddlers with specific expressive language delays (SELD). Therefore, the findings of the current study provided new information pertaining to the preschool population with a language disorder. Together, Buschmann et al. (2009) and the current study supported parent-training as an effective means to increase a broad population of young children who have language deficits.

The present study also supported the findings from previous parent-training efficacy studies that promoted vocabulary learning through play and storybook reading. The parent-training program used in the present study emphasized use of play and storybook reading to encourage language growth. The findings from this study aligned with studies that taught parents to use strategies to encourage vocabulary growth during play (Gaines & Gaboury, 2004) and storybook reading (Crowe et al., 2004). Overall, the results of the present study indicated that applying a brief, highly structured parent-training may facilitate expressive vocabulary for some young children.

Hypothesis #2

Hypothesis #2: Parents who participated in a language facilitating parent-training program will demonstrate an increase in perception of their ability, their child's abilities, knowledge, and strategies used when interacting with their child, as measured by a parent questionnaire.

For the purpose of clarity, the questions were categorized into three different groups to align with each component stated within hypothesis 2. The categories were as follows: category 1-parent's perception of their own abilities and their child's abilities (7 total questions), category 2-general knowledge about the parent's engagement with their child (3 total questions), and category 3-the type and frequency of strategies or contexts used by the parent (7 total questions). Examples of each type of question and the questions assigned to each topic category are provided in the Table 1 below.

TABLE 10. Parent Questionnaire Topic Categories

Category	Example Question	Questions
Perception of Their or Their Child's Ability	I feel comfortable and confident helping to facilitate my child's language development	2, 3, 4, 5a, 5b, 13, 20
Knowledge	There is a difference between storybook reading and shared storybook reading?	12a, 12b, 19
Strategy	When I play with my child I often follow my child's lead.	7, 8, 9, 11, 16, 21, 22

Perception of The Parents or Their Child's Ability

Seven questions from the parent questionnaire were used to examine Hypothesis #2, as these questions were concerned with parents' perceptions of their own abilities and their child's abilities. Overall, the parent's perspectives of their child's abilities demonstrated an increase from pretest to posttest evaluation. The current investigation strengthens literature supporting parent-training to increase parents' perceptions of their child's abilities, as Romski et al. (2011), determined that parents' perceptions of their child's communicative development became more positive after parent-training.

However, one question regarding perceptions of parents' ability was observed to decrease from pretest to posttest. Question #3 stated, "*I feel comfortable and confident helping my child to facilitate language".* The mean decrease observed for this question was contrary to the results found in Romski et al. (2011). Although only two questions on the parent questionnaire from Romski et al. (2011) study were related to parent's perceptions of their own ability, posttest mean scores were observed to increase from the pretest. The possible decreasing mean scores could be attributed to an increase in the parent's awareness of 1) how influential their linguistic output can be in effecting their child's language growth 2) a discrepancy between their child's performance and age appropriate developmental milestones, or 3) the resources now available, which may increase ownership of their role in positively influencing their child's language.

Gain in Knowledge: Regarding Concepts Related to Language and Literacy

Three questions from the parent questionnaire were utilized to support to Hypothesis #2, as these questions were concerned with the knowledge gained by parents participating in the parent-training program. After the parent-training, mixed results were found for such questions. For the statement on the questionnaire, *"There is a difference between book sharing and book reading. Please explain",* parents demonstrated an increase in their agreement with the statement and their ability to accurately explain the difference between the concepts from pretest to posttest. However, when asked if parent's agreed or disagreed to the statement, *"I believe that play is NOT strongly connected to language development"*, all parents were found to agree with this statement on the posttest. The negative statement may have confused the parent participant when responding to this question. Overall, parents were observed to increase their knowledge

as it relates to language and literacy concepts due to the majority of questions on the posttest had increased scores. Providing parents the understanding of basic definitions, developmental milestone charts, and related information allowed parents to better understand their child's current and predicted needs. Furthermore, Glogowska (2002) found that giving parents access to information that increases their knowledge of the nature of their child's communication difficulties is an important part of permitting SLPs and parents to work in an effective partnership.

Strategies Used By Parents

Seven questions from the parent questionnaire were used further investigate Hypothesis #2, as these questions were concerned with the use of language facilitation strategies utilized by parents participating in the parent-training program. After the parent-training, parents demonstrated considerable gains from pretest to posttest scores for these questions. Questions that yielded the most improved scores from pretest to posttest included Question #7 (i.e., *I use strategies to facilitate my child's language growth*), Question #8 (i.e., *I use the strategy CAR when interacting with my child*) and Questions #9 (i.e., *I use CAR ____ times a day with my child*). However, all questions pertaining to strategies were found to increase from the pretest to posttest. The results from the current study align with studies that investigated similar strategies taught to parents (Girolametto et al., 1996; Kaiser & Hancock, 2003; Roberts & Kaiser, 2011). Girolametto et al. (1996) taught parents to use focused stimulation when interacting with their children to facilitate language growth. Furthermore, Kaiser & Hancock (2003) found that parent-training is most effective when new strategies taught are empirically based, tailored to their child's developmental needs, and implemented in a skillful and

individualized matter. The parents in the current study were taught various strategies as suggested by Kaiser and Hancock (2003) and parents were reported to apply the instructed strategies with their children.

Clinical Implications

The parent-training program results provided many clinical implications for both parents and speech-language pathologist (SLPs). SLPs can offer and periodically implement a parent-training program to parents who have children at risk for language deficits or disorders and consequently language learning disorders. SLPs will not burden parents with additional work or materials but explain how to better use current materials and routines they are already engage in. Moreover, parents will recognize the importance and usefulness of techniques to facilitate their children's language development. The program benefits clinicians, related professionals, and parents but most importantly children who present with a language disorder.

Contributing Factors for the Vocabulary Outcomes Observed

The increase in both the child and parent participants' outcomes may be attributed to the design of the parent-training program. The design of the parent-training program was unique in that it educated parents regarding the importance shared-storybook reading and play activities as means to increase the depth and breadth of children's vocabulary during parent-child interactions. Storybook reading has increasingly been promoted as an ideal context for new vocabulary learning in children with language impairments (Dickinson et al., 2012). Play, another naturalistic environment for parents to teach their children new vocabulary words, provides a context to develop their physical, cognitive, imaginative and emotional strength (Gainsburg, 2007). Han et al. (2010) revealed the

combination of play and storybook reading activities is more effective than only implementing one type of activity to promote vocabulary growth in high-risk preschool-age children without a disability. The current study's results found the combination of storybook reading and play to be an effective intervention contexts for children with a language disorders. Conversations throughout all parent-child interactions was also encouraged in the parent-training program. Engagement in conversations across contexts was strongly advised due to the correlation between mothers who purposefully sought to stimulate conversation with their children and children with larger vocabularies (Huttenlocher et al., 2002). In addition, the current study revealed that parents can learn concepts related to language through a short and highly structured parent-training program. This was evidenced by parent participants' application of the learned strategies to interaction with their children and the increase in their children's expressive vocabulary growth.

Beyond the Demographics of Other Studies

Similar parent-training program have observed an increase in vocabulary ability; however, many studied have focused on various demographic factors besides preschool-aged children with a language disorder. For example, several studies have focused on the effects of parent-training on toddlers and children with language delays (Buschmann et al., 2009; Gaines & Gaboury, 2004; Girolametto et al., 1996). The current study extended the finding of parent-training efficacy studies by examining the effects of a comprehensive training program that incorporated current literature to target vocabulary growth for preschool-age children with specific language disorders.

Explicit Details of Parent-training Program for Practical Application

Many parent-training efficacy studies have not provided details of the actual training provided to parents. More specifically, the majority of studies have not provided explicit details of which strategies and components they taught the parents. Without the detailed procedures of a parent-training, replication of the findings cannot be completed. Kaiser and Roberts (2013) originally stated this concern and consequently sought to explicitly describe Enhanced Milieu Teaching principles and how to perform a parent-training within their study. The current study also specified parent-training procedures and components for SLPs to easily implement the training in the future.

Limitations

Limitations to External Validity

The most prominent limitation of this study was the small sample size. Increasing the sample size in the future or using a control group would increase external validity of the research finding. Additionally, increasing the sample size would allow for statistical analysis of the data collected. Participant selection criteria used in the current study may prevent similar results to be replicated; therefore, the stringent selection of parent participants may weaken the external validity of this study.

Limitations to Internal Validity

Confounding variables that could not be controlled for included: participant selection, history effect, participant bias, regression, and instrumentation effect. Participant selection threat could have been a confounding variable to the outcome of this present study. The participants were recruited by a convenient sample within the CSULB Speech and Language Clinic.

For parent participants, participant bias could have been demonstrated when parents completed the posttest questionnaire, as they may have anticipated that the researchers' hypothesized an increase in scores from the pretest. Likewise, the Hawthorne effect or the placebo effect could a have influenced their responses to the post-training questionnaire. Lastly, test effects were not controlled for in the parent questionnaire, as all the questions were identical to the pretest.

Several confounding variable may have influenced the child participant results. History effect could have influenced the results because the majority of the children were receiving speech and or language services at the time of the study. Additionally, the three children who decrease their posttest standard score on the EVT-2 had received three of the four highest scores of all participants included in this study. Thus, statistical regression could have influenced the high scores to move toward the mean and therefore decrease. The instrument used to measure vocabulary growth within this study may not have demonstrate the most accurate changes in vocabulary growth for child participants. Specifically, the format of the EVT-2 may have limited the true representation of the child participant's vocabulary ability. Bishop et al. (2000) found that compared to children with TD language, children with SLI were found to produce significantly more inadequate responses when responding to an adult. Thus, using a language sample during a less structured environment could have provided a more comprehensive depiction of each child's expressive vocabulary repertoire. Furthermore, the small increase in child participants mean standard EVT-2 scores from pretest to posttest could be attributed to (1) the short duration between pretest and posttest administration, (2) parents not following through with the suggested strategies, (3) the children's familiarity with the

examiners or (4) other internal changes the child participants may have experienced (e.g., fatigue or lack of motivation).

Lastly, controlling for test effect limited the comparable data to be suitable for deriving qualitative information from pretest to posttest performance on the EVT-2. For example, comparing percentages of error responses from pretest to posttest provided limited information in determining the overall effectiveness of the parent-training. Due to the large variation of questions completed, from pretest to posttest, the numbers are not very comparable. Children who reached the ceiling on the pretest more quickly than the posttest may look to have fewer "errors" however, the may have answered less question in totality on the pretest in comparison to the posttest and vice versa. Therefore, determining the percentage of each type of error was found to lend more accurate qualitative information, as this method was less dependent on the total questions answered. These are all possible threat to this research; however, this study can be used as a catalyst for more exacting data collection in the future.

Recommendations for Future Research

Several recommendations for future research are suggested. First, future research is encouraged to use a randomized, controlled trials with more than thirty participants in order to determine the presence of a cause and effect relationship between the parent-training program and language outcomes for parent and child participants. Second, the fidelity of parents implanting therapy could be enhanced. Future research could possibly video record parents' interaction with children. This would lend further qualitative data regarding parents' performance over time. Third, more comprehensive measures could be utilized to detect changes for both the parent and child participants. For example, a

parent questionnaire could ask more open-ended questions, more specific questions, such as questions related to vocabulary ability, etc.

Conclusion

The results from the present study indicated that training parents to implement language facilitation strategies was effective for young children with suspected or diagnosed language impairments whose parents participated in a short and highly structured parent-training program. Moreover, parents can be taught to implement general and specific strategies and the strategies implemented can positively impact children's vocabulary growth.

APPENDICES

APPENDIX A

PARENT QUESTIONNAIRE

Pre/Post-Training Parent Questionnaire

Demographic Information

My name: _____
My child's name: _____

Information about your child:
Age: _____

Speech & Language Development:
Babbled at _____ months or _____ years old.
First words at _____ months or _____ years old.
My child's language growth seemed delayed to me because_____
_____
My child is bilingual: YES NO If yes, what language: _____
He/ She began learning both languages at the same time: YES NO

Directions: Please read each question and provide an answer to the best of your ability. Write answers in the spaces provided. If you feel the need to further explain your answers, please circle the item number and use the last page.

1.	I have attended a parent-training program before.	Circle one: YES NO If yes, the organization/affiliation: _____
2.	I feel my child's language is adequate to meet the demands of kindergarten.	Circle One: Disagree Agree 1 2 3 4 5
3.	I feel comfortable and confident helping to facilitate my child's language development.	Circle One: Disagree Agree 1 2 3 4 5
4.	When my child speaks, his/her words are usually	Circle One:

	in the correct order.	Disagree Agree 1 2 3 4 5 Please Explain:
5.	During play, my child uses a variety of vocabulary words.	Circle one: YES NO Please Explain:
6.	Please list what type of activities you generally use to develop your child's language.	_____ _____
7.	I use strategies to facilitate my child's language growth.	Circle One: Disagree Agree 1 2 3 4 5
8.	I use the strategy C.A.R. when interacting with my child.	Circle one: YES NO
9.	I use C.A.R. approximately ____ times a day with my child.	Circle One: 0 | 1-5 | 6-10 | More than 10 | During all interactions
10.	I read storybooks with my child.	Circle one: YES NO
11.	I read storybooks with my child ____times a week.	Circle One: 1 2 3 4 5 +
12.	There is a difference between book sharing and book reading.	Circle One: Disagree Agree 1 2 3 4 5 Please Explain:

13.	I feel comfortable selecting books that my child would find interesting and facilitate language development.	Circle One: Disagree 1 2 3 4 5 Agree
14.	Please briefly describe how you usually read a story with your child.	_____ _____ _____
15.	I play with my child.	Circle one: YES NO
16.	I play with my child ____ times a day/week (circle one) for approximately _____minutes.	
17.	The games I play with my child include:	_____ _____
18.	An example of a typical play interaction with my child is:	_____ _____ _____
19.	I believe that play is NOT strongly connected to language development.	Circle One: Disagree 1 2 3 4 5 Agree
20.	I feel comfortable selecting toys that are best for enhancing my child's language and play skills.	Circle One: Disagree 1 2 3 4 5 Agree
21.	When I play with my child I am often at eye level.	Circle One: Disagree 1 2 3 4 5 Agree
22.	When I play with my child I often follow my child's lead.	Circle One: Disagree 1 2 3 4 5 Agree

APPENDIX B

FACILITATING LANGUAGE LOG

Facilitating Language Log

	Strategy Used	Activity	Wednesday	Duration of Activity
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				
Sunday				

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