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Providing Parents with Young Children's Performance Feedback Information: Effects on Vocabulary and Pre-Literacy Development

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PROVIDING PARENTS WITH YOUNG CHILDREN'S PERFORMANCE FEEDBACK
INFORMATION: EFFECTS ON VOCABULARY AND PRE-LITERACY DEVELOPMENT

A Dissertation Presented

by

AMANDA ALEXANDRIA NNACHETAM

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of
DOCTOR OF PHILOSOPHY

May 2010

School Psychology

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PROVIDING PARENTS WITH YOUNG CHILDREN'S PERFORMANCE
FEEDBACK: EFFECTS ON VOCABULARY AND PRE-LITERACY
DEVELOPMENT

A Dissertation Presented

by

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DEDICATION

To my Lord and Savior, Jesus Christ, with whom nothing is impossible; and to my best friend, my Grandma Amanda Hadley*, who taught me how to trust in God.

I pray that I am pleasing my Cloud of Witnesses

“FAITH GUIDES US AND BRINGS US PEACE”

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ABSTRACT

PROVIDING PARENTS WITH YOUNG CHILDREN'S PERFORMANCE FEEDBACK
INFORMATION: EFFECTS ON VOCABULARY AND PRE-LITERACY DEVELOPMENT

MAY 2010

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This study examined the effects of performance feedback information on parenting practices that contribute to development of vocabulary and pre-literacy skills. Fifty-one dyads of parents and their pre-school aged children were randomly assigned to one of three treatment groups. Group one received full treatment including a workshop and feedback. Group two, designated as the control group, did not receive the feedback portion of the treatment; and group three, designated as a wait list control group, received neither the workshop nor performance feedback. All participating parents were administered a survey of parenting practices that lead to vocabulary and pre-literacy development. Treatment produced significant results for the vocabulary measure; however, the data did not yield a significant result for the cognitive measure. There appeared to be a significant difference between the treatment group and the wait list control group. This difference was not found when comparing the treatment group to the control group, or when comparing the control to the wait list control. Also, feedback was shown to have an effect on only one of the five parenting practices surveyed.

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CHAPTER 1

INTRODUCTION

School Readiness

School Readiness is a complex issue and the subject of much debate in the field of education. A report from the National Reading Panel in 2000 stated current educational initiatives tend to focus attention on several readiness goals including every child entering school healthy and ready to learn. Concerns about the state of public education have led to the establishment of the National Education Goals (National Education Goals Panel, 1999). In a study about family partnerships in early education, Fantuzzo, Tighe, and Childs (2000) presented information that these goals represent a strategic plan to enhance learning opportunities for all students by targeting what experts believe to be the most fundamental components of effective intervention. Two cardinal foci of the strategic national plan are school readiness and parent involvement.

A 1995 report from the National Center for Educational Statistics found that opinions about what young children should know or be capable of doing to be ready for kindergarten vary widely. Nationally, there appears to be a lack of agreement on what actually constitutes school readiness. However, Boethel et al. (2004) reported what is agreed upon is that a child's entry into formal schooling is a critical passage. In a 2001 study, Pianta, Kraft-Sayre, Rimm Kaufman, Gercke, and Higgins posited readiness for school is not solely a function of a child's skills; a child's adjustment in the transition to school is also a product of relationships among a wide array of contexts and person including the child, his or her family, the school, and his or her peers. Researchers have found that as many as 80% of the children who enter school significantly behind their peers encounter negative outcomes such as failing third grade requirements, disruptive behavior in school, dropping out of school, involvement in criminal activity, and teen pregnancy. Stanovich (1986) names this phenomenon the "Matthew Effect". This theory, based

on a biblical principle, finds that in terms of reading or academic development over time, poor students become poorer, while richer, or more advanced students become richer. By intervening earlier with the necessary research based instruction known to be effective, we can make an effort to decrease the occurrence of these problems for students.

Parents as Teachers

Children become prepared for school across a variety of settings including childcare facilities, pre-schools, Head Start programs, and in-home care with parents and relatives. Parents are their children's first and most enduring teachers (Kaiser & Hancock, 2003). This idea leads on to postulate that a child's home, in many ways, can be thought of as his or her first school. In the course of normal development, parents support their children's language, social, and academic development (Hart & Risley, 1995). In a study conducted on the Head Start parent involvement model, it was found that children had better school readiness outcomes when parents spent more time helping them at home (Parker, Boak, Griffin, Ripple, & Peah, 1999).

Families play a critical role in young children's literacy development (Hill & Kantaylieni, 2005). A young child's success as a reader is related to his or her early literacy experiences in the home. Family literacy practices determine young children's literacy skills prior to formal instruction. More recognition is being directed toward the importance of literacy instruction at home with parents serving as literacy role models for their children (Saracho, 1997). Families may not be aware of best practices in preparing their child for literacy instruction. The National Center for Education Statistics (1995) reports that parents tend to hold a range of beliefs about what attributes and attitudes their children will need to succeed in kindergarten. These beliefs influence the activities parents engage in with their children and the programs and experiences they arrange for them. Parents are often unaware of the basic elements that teachers deem necessary for the child to be ready to enter school or progress at an adequate rate. They may

also be unfamiliar with the assessment procedures that are used to determine their child's level of readiness.

The value of parents being involved in their child's educational progress has been demonstrated through a multitude of studies. Many of these studies focus on parent-child reading practices while at home. One study conducted by Tizard, Schofield, and Hewison (1982) found that children who read aloud to their parents two to four times a week showed greater and significant gains in reading achievement as compared to those who did not receive any intervention or those who read with a tutor in school. This study demonstrates the effectiveness of parent involvement in literacy development. Another study explored the relationship between parenting behaviors and children's school performance, indulging academic socialization. Hill (2001) questioned these relationships, primarily among African-American and low-income parents. A total of 103 African-American and Caucasian-American kindergarteners and their mothers from a southeastern semi-urban city provided pre-reading and pre-math child data from two subscales of the Metropolitan Readiness Test. Parents responded to their involvement, parenting behaviors, and parent's expectations of their child's school performance. Parenting behaviors and teachers' perceptions supported the hypothesis that parents influence early literacy development of children from low-income households. The study supports the notion that parents play an important role in their child's success because early interactions have shown to affect later school performance.

Preschool

Currently, there are few quality universally available pre-school programs that all parents can access for their children. Some states do provide publicly funded pre-school programs. New Jersey's Abbott Program provides free schooling to low-income families and Head Start is a national program that is known to provide some basic elements of school readiness. However,

while in these programs, pre-school children may not have access to intervention services such as early reading intervention and leveled instruction, thus reducing the number of children properly served in these and other publicly funded programs (McConnell, Priest, Davis, & McEvoy, 2000). Since the turn of the 21st Century, publicly funded intervention programs have been made available primarily to children with developmental or other disabilities, children living in poverty, and children with other perceived special needs.

The United States may be moving toward some version of universal access to educational services for all pre-school aged children. However, childcare facilities and congregate care programs do not appear to be adequately equipped to assess or identify the instructional needs of certain children. Consequently, although there has been a tremendous growth in the number of children served in congregate care situations like day care, there is very little explicit, common, and systematic organization of these services in ways that would support expanded assessment activities (Missall & McConnell, 2004). In many instances, unless children have pervasive developmental disorders such as autism or mental retardation, parents are not made aware of the instructional issues their children may encounter as they enter formal schooling. Also, with some children, the full spectrum of their academic difficulties may not be disclosed until years into their education. Many of these children enter kindergarten with physical, social, emotional, and cognitive limitations that could have been minimized or eliminated through early attention to child and family needs (Boethel et al., 2004). This lack of knowledge places at-risk children at an even greater disadvantage than their counterparts in terms of entering school ready to learn. In some cases, despite intensive and expensive intervention during the primary grades, children who enter school significantly behind their peers never catch up (Boethel et al., 2004).

A longitudinal study by Ramey et al. (2000) was conducted to report on the national Head Start/Public Early Childhood Transition Demonstration. Thirty-one demonstrations across the country focused on the hypotheses that comprehensive, transition services like Head Start,

provided through third grade, would address the negative effect of children's academic gains. Over 7,500 former Head Start children and families were enrolled in two cohorts. Transition services were provided to randomly assigned project and comparison schools, whose majority children lived in low-income households. Various measures examined children's reading, math, and social skills. Teachers were asked to rate children's abilities and progress. Findings showed most significant gains in the first two years of public school and continued through third grade. Although reading scores at kindergarten entrance were below the national average, scores at the end of second and third grade years increased to national averages.

Results concluded that transition services provided through third grade may support comprehensive school readiness needs of children. In summary, this study does provide consideration for future research in policy, practice, and training to support parents as they facilitate young children's entry into kindergarten and pre-literacy development. Although generalizability is limited, it is important to consider themes that emerged from the findings of this study: Low-income communities and families, in particular, may benefit from additional comprehensive, quality, early (intervention) and educational programs. Such programs can provide a brighter future for at-risk children.

Vocabulary Development

Vocabulary acquisition is a primary accomplishment of pre-school aged children. It is estimated that between the ages of one and six years, children learn to comprehend more than 14,000 words, which is an average of about nine words learned per day. (Templin, 1957 as cited in Rice, Huston, Truglio, & Wright, 1990). Children manage to acquire their overall vocabulary without explicit instruction by absorbing new meanings as they encounter them in conversational interactions. Hart and Risley's 1995 study, conducted in an urban community, found that children's vocabulary varied greatly across income groups. The study also found that vocabulary

is closely correlated to overall language ability. The researchers observed that by the time the children were three years old, the rates of vocabulary growth between parental socio-economic statuses were already established.

There were vast differences between the rates of children whose parents were low-income, those who were working class, and those who were considered professional. Language experiences also varied greatly for children from the three types of families. By the time the children turned four years old, their differences in vocabulary development were even more evident. Children from professional families experienced an average of 45 million words and children from working-class families, 13 million words, on average (Hart & Risley, 1995). These findings show the growing discrepancy between socio-economic groups and the evidence needed to make parents aware of their impact on their children's vocabulary development.

As a child reaches school age, the perception of his or her language skills becomes particularly influential. Education professionals place much importance on language maturity (DeThorne & Watkins, 2001). The most common problem that restricted student's school readiness, as cited by teachers surveyed by the Carnegie Foundation, was deficiency in language. When children's communication skills do not meet teacher's expectations, children are likely to be perceived negatively and consequently may experience less academic and social success.

Receptive Vocabulary

Receptive vocabulary is one of several language skills. It is defined formally as words a child can name when he or she sees pictures representing the word. An increase in receptive vocabulary will have a positive impact on children's language skills (White et al., 1988 as cited in Kotaman, 2008).

Expressive Communication

Proficiency in expressive communication has been posited as an important outcome in early childhood that is necessary for cognitive and social development (Luze, Linebarger, Greenwood, Carta, & Walker, 2000). Children need communication skills to gather information, grow cognitively, and interact appropriately with others in their environments. In the process of successfully conveying expressive communication, a child uses gestures, sounds, words or sentences, including sign language, augmentative and alternative communication, to convey wants and needs, or to express meaning to others. The child responds to other's communication with appropriate gestures, sounds, words or word combinations. The child also uses these gestures, sounds and words to initiate, respond to, or maintain reciprocal interactions with others.

Delayed development of communication skills can lead to additional development problems. Children with expressive communication problems often experience problems early on in literacy, school achievement, behavioral development, and establishing relationships with friends and family (Luze et al., 2000). Communication problems are one of the most prevalent reasons for referring children for special education services. Findings from one 1995 study cited that at least 70% of preschool children with disabilities had communication impairments and 12% of all services provided to infants and toddlers that year were for speech and language . This finding again indicates the importance of children being identified for instructional or speech and language delays as early as possible. Research found that children who receive intervention services for communication develop improved language and may be at reduced risk for early failures in school (Luze et al.).

Pre-Literacy Development

One important element of school readiness that continues to garner attention is literacy development. The National Education Goals 2000 Project highlighted by Boethel et al. (2004),

states that in order to obtain high levels of success, all children should read at grade level by third grade. Research has shown that children learn most of their pre-literacy skills in the first few years of life. Some skills important to pre-literacy, such as phonemic awareness, language skills, awareness of print, and vocabulary knowledge, begin before a student even enters school (Adams, 1990). All of these skills can be developed by being taught and talked to by guardians during the early years of life. The acquisition of reading skills also begins well before formal schooling. Children need to master the preliminary skills to effectively master proper literacy acquisition (Snow, Burns, & Griffin, 1998). There are a number of language, literacy, and communication skills needed by children as they enter formal schooling. One of the ways early interventionists can more clearly know who might benefit from focused early intervention efforts is progress monitoring of children's skill development.

Progress Monitoring

Progress monitoring is demonstrated to be an effective method of formative assessment that has been linked to improvements in children's educational outcomes. Progress monitoring outside of an academic setting may resemble a growth chart that parents can use at home to periodically record the progression of their child's height throughout the years. Progress monitoring within the classroom can utilize curriculum-based measurements to monitor student progress in specific academic skill areas over time. A skill, such as the number of words a child reads correctly on a reading probe, is administered on a periodic basis to assess the student's progression and can assess the effectiveness of any interventions that may be implemented. The proximity in which each assessment is administered is determined by the amount of time deemed to show effective change in the skill being observed. With this information, parents and education professionals can evaluate the extent to which a child is on a developmental path to achieve desired outcomes, for instance, whether a child is on trajectory to be an independent reader by the end of third grade (McConnell et al., 2000).

Curriculum Based Measurement (CBM)

Curriculum-based measurements (CBMs) are measures developed in the 1970's that can be used for both formative and summative evaluation (Deno, 1985). The subtests for CBMs have to be tied to the curriculum, of short duration to facilitate frequent administration by teachers or educators, capable of having multiple forms, inexpensive to produce in terms of time in production and in expense, and be sensitive to improvements of student's achievement over time (Shinn, 1989). Through frequent and repeated assessment and by using common measurement procedures and metrics, use of progress monitoring produces empirical movies of the rate of change in a particular domain over time (Shinn, 1989).

Performance Feedback

Performance feedback is a process when information is exchanged concerning the performance expected and the performance exhibited. Constructive feedback can praise good performance or correct poor performance and should always be tied to the performance standards (Duncan & Brunwelheide, 1985). It is the process of providing information about one's performance after completing a task or meeting a designated criterion. Some examples of performance feedback are progress reports and report cards that children may receive at the end of a school semester. The assigning of letter grades can be seen as identifiers of a student's academic progress. Students who receive good grades are expected to continue making progress, while the expectation for students who receive lower grades is to adjust their performance to achieve higher grades.

Purpose for Current Investigation

Despite a growing emphasis on parents as teachers, the effectiveness of providing progress monitoring data to teachers, and performance feedback, there is very little evidence of research conducted connecting these elements for parents and examining the possible effect of

doing so on children's achievement. Although there has been some research on parent delivered instruction to kindergarten children and progress monitoring effects on teacher decisions made in regards to curriculum change, the effects of providing progress monitoring information to parents of pre-school aged children require further inquiry.

It would benefit parents to know such information provided by progress monitoring to allow them the opportunity to intervene at an earlier point in their children's academic development. Presenting parents with progress monitoring information will also allow them to continuously examine their child's improvement while making critical changes to parenting practices that can promote school readiness. For example, in a study by Fuchs and Stecker (2000) focusing on progress monitoring, it was found that students whose teachers tailored instructional adjustments based on their own CBM data performed significantly better than students who did not receive individualized adjustments to their educational program. Knowing such information may also indirectly improve parent and teacher relationships.

In a study focusing on successful methods for kindergarten transition, Pianta et al. (2001) found that in general, pre-school staff perceived parents less positively and less competent in teaching skills and participating in their children's education. As parents become more knowledgeable about difficulties their children may have, they will be able to better advocate on their children's behalf and communicate more effectively with their children's teachers about his or her strengths and weaknesses. Teachers, in turn, will be able to rely on parents as a greater resource, ensuring a more positive home-school relationship. Collaboration increases the likelihood that early interventions will not only be successful, but also sustained overtime (Pianta et al.).

In a review of considerations in emergent and early literacy, Nelson (2005) suggested there is a need for further research on early identification and intervention for young children at

risk for reading failure, including investigation of optimal parent and caregiver support for emergent literacy skills. Therefore, the purpose of the present study is to investigate the direct effects of providing parents of pre-school aged children with a progress monitoring program on parenting practices that lead to language development, pre-literacy skills, and overall school readiness.

Research Questions

1. For pre-school aged children in the summer prior to kindergarten entry, what are the effects of providing parents with progress monitoring feedback information on the child's vocabulary and pre-literacy skill development?

Hypothesis: Pre-school aged children whose parents are provided with progress monitoring feedback information will exhibit higher rates of vocabulary and pre-literacy skill development than children whose parents participate in the workshop alone.

2. For pre-school aged children in the summer prior to kindergarten entry, what are the effects of providing parents with progress monitoring feedback information, on parenting practices that lead to vocabulary and literacy development?

Hypothesis: Parents of pre-school aged children who are provided with progress monitoring feedback information will engage more frequently in specific activities that promote vocabulary and pre-literacy development than those parents who participate in the workshop alone.

3. For pre-school aged children in the summer prior to kindergarten entry, what are the effects of providing parents with progress monitoring feedback information on the child's readiness for school as demonstrated by scores achieved on an early screening measure?

Hypothesis: Pre-school aged children whose parents are provided with progress monitoring feedback information will exhibit elevated levels of school readiness

evidenced by scores on a kindergarten readiness measure as opposed to children whose parents participate in the workshop alone.

CHAPTER 2

LITERATURE REVIEW

The purpose of this chapter is to review and critically summarize literature from the past thirty-five years that focus on the following content areas: Vocabulary development, pre-literacy development, and performance feedback. Studies on vocabulary were selected if they focused on children between ages two to eight years or in pre-school through kindergarten. Additional studies were included because they focused on children from backgrounds that placed them at risk. Pre-literacy development studies were selected based on the following criteria: Their contribution to the discussion of the role of the home in children's educational achievement and because they provided specific information on parental involvement in initial skill development. Also, studies for both content areas were included that highlighted the effects of a child's home environment on school success and future outcomes. Studies about performance feedback were chosen to examine the effectiveness of this tool on intervention implementation and outcomes. These studies also provide a basis for the chosen intervention implemented in this study.

Vocabulary Development

There has been a growing amount of research focusing on the role of parental involvement in pre-literacy and vocabulary development. This section will evaluate some studies in these content areas. Learning new vocabulary is a major part of acquiring language (Senechal & Cornell, 1993). The process of learning new words starts at birth and continues throughout the lifetime. Children with reduced vocabularies may have increased difficulty learning and understanding words in context because they do not have a well-developed understanding of known words (Senechal, Thomas, & Monker, 1995). There are many ways that parents can foster their children's vocabulary development, including a host of incidental practices such as watching educational television and reading aloud with their children. The following studies highlight some

effects of these incidental teaching activities, as well as examine possible hindrances to the acquisition of Standard English vocabulary for certain populations.

A longitudinal investigation of pre-school children's viewing of the educational television program "Sesame Street" examined the program's affects on vocabulary development (Rice et al., 1990). Several other studies have been conducted examining the efficacy of the "Sesame Street" program and other educational programs as teaching tools (e.g., Anderson & Freebody, 1981; Anderson, Hiebert, Scott, & Wilkinson, 1985; Anderson, Lorch, Field, & Sanders, 1988; Ball & Bogatz, 1970; Bogatz & Ball, 1971). However, the content area of language development was often largely overlooked. The authors' set out to study how young children's language is affected by viewing the program both in the presence of adults and alone. The authors' chose this particular program to add to the existing studies and to explore the claim that the dialogue on "Sesame Street" closely resembles that of a mother talking to her child, with simple sentences, much talk about the here and now, repeated emphasis on key terms, and an avoidance of abstract terminology. These factors would suggest that the program is well suited for introducing new words and meanings to young children (Rice et al., 1990).

The two-year longitudinal study consisted of 326 children and their families in Topeka, Kansas. The children were within three months of their third or fifth birthdays at the beginning of the study. Subjects were recruited through multiple sources, including newspaper birth records, churches, Laundromats, preschools, etc. The sample was predominately Caucasian and the majority lived in two parent homes. However, the sample did appear to represent a wide range of educational and occupational levels. The average educational attainment was some post high school training, and the average occupations were in sales, management, or clerical work. The design was a combination of cross-sequential and cohort-sequential methods. Children were divided into two cohorts by age: Those within three months of their third birthday (n=160) and those within three months of their fifth birthday (n=166). They were then again divided into two

additional sub-cohorts to begin the study. Children with birthdays from February through August began the study in the spring. Children with birthdays from September through the following February began in the fall. Parents were asked to complete television viewing diaries that were collected every six months for five viewing sessions.

Two-hundred, seventy-one of the subjects returned either four or five diaries and were included in the data analysis. All children were given the Peabody Picture Vocabulary Test [PPVT] (Dunn & Dunn, 1959) as a pretest and posttest measure and parents were also interviewed about their level of encouragement with their child's television watching and if they watched along with them. A series of multiple regression analyses were performed separately for each cohort to predict "Sesame Street" viewing on (PPVT) scores and to partial out the affect of family and child variables. In the first regression, early view of "Sesame Street" was tested as a predictor of the final (PPVT) score. For the younger cohort, early viewing (ages 3-3 ½) was significantly related to scores at age five. For the older cohort, viewing at ages 5-5 ½ did not contribute significantly to scores at age seven. The results suggest a cumulative effect of "Sesame Street" viewing during the age period from three to five, with declining benefits after age five. Adult co-viewing had an effect. Viewing without an adult, between the ages of 3-3½, predicted vocabulary at ages 5 ($B = -.22$, $t = 3.05$, $p = .01$). Viewing with an adult was unrelated to later vocabulary ($B = .08$, $t = 1.03$). For the older cohort, there were no relations of viewing at age five to later vocabulary.

As for the parent-child variables, parent education was the most consistent positive predictor of receptive vocabulary. Children without older siblings performed better than those with older siblings. Parents with positive attitudes to television, in general, had children with relatively low vocabulary scores. The authors questioned whether those parents were less apt to engage their children in activities other than television viewing because of their attitudes and therefore may also respond to slow development by encouraging "Sesame Street" viewing,

because they consider it educational television. These findings suggest that the medium of educational television may be well suited for the introduction of new word meanings to young children. It allows for the introduction of familiar and novel words in a manner that focuses young viewer's attention, with visual and verbal redundancies, and potential of repeated experiences with the same material (Greenfield, 1984 as cited in Rice et al., 1990.) However, as children grow, a variety of skill-based interventions will need to be put in place in order to further learning.

In another study by Kotaman (2008), the effect of parent's dialogical storybook reading on their child's receptive vocabulary and attitudes toward reading were assessed for seven weeks in Bursa, Turkey. Through this study, the author sought to answer the following questions: (1) Will children's dialogical storybook reading with parents increase their receptive vocabulary level?; (2) Will children's dialogical storybook reading with parents have a positive impact on children's reading attitudes?; and (3) Is there a relationship between children's receptive vocabulary and reading attitudes? The study's population included parents over the age of 18 years old who had at least one child, aged 36-48 months old, attending a private pre-school. There was a total of 80 participants, consisting of 40 parents and 40 children. Of the 20 children in the experimental group, 45% were girls and 55% were boys. Sixty percent of the control group were girls and 40% were boys. Age ranges for both groups was 3.25 years, with a mean age of 3.9 (SD=1.2) for the experimental group and 3.9 (SD=1.3) for the control. The majority of the parents included in the study were female (80%- 85%), had university education (70%- 80%), and could be considered middle class (80%). All of the parents reported that they read to their children.

A pretest / posttest design with random assignment was utilized in which parents were assigned to either a no treatment control group or an experimental treatment group. Parents in the experimental group participated in a two-hour instructional workshop where they received education on dialogic storybook reading techniques. At the end of the workshop, all participants

received dialogic storybook readings prepared by the trainer. Parents also received a checklist to report how many times they applied the techniques during the week. Outcome measures were the Peabody Picture Vocabulary Test (PPVT), adapted to Turkish, and the Pre-school Reading Attitudes Scale [PRAS] (Saracho, 1988), also adapted for language and content due to 15 of the test items focusing on library reading activities.

Paired-t-tests were used to compare within group mean differences and Analysis of Covariance (ANCOVA) was used to analyze between group differences. The experimental group's pretest/posttest mean scores from PRAS were 42.8 and 49.4 (SD=8.9, 6.x, respectively). The paired t-test revealed a statistically significant difference between the means of pre-test and the post-test ($t(19) = 3.47; p < 0.01$). The control group's pretest/posttest mean scores were 43.8 and 46.3 (SD=10.2, 6.4, respectively). The paired t-test revealed a statistically significant difference between the means of the pretest and the posttest ($t(19) = 3.47; p < 0.01$). The increase in means scores was not statistically ($t(19) = -1.34; p > 0.05$). ANCOVA with the pretest as a covariate indicated that the difference between the mean scores were not significant ($p = 0.06$).

Children in the experimental group had a higher mean score ($M = 40.25$) on the PPVT than that for the children in the control group ($M = 39$). ANCOVA results of the PPVT post-test scores with the pretest as the covariate indicated significant differences ($F(1) = 6.91; p < 0.05$). PPVT scores for the children in the experimental group increased significantly more than those of their peers in the control group. The study showed that the receptive vocabulary level significantly increased for the children in the experimental group. . It also confirmed that changing the quality of the storybook reading to the dialogical reading technique has a positive impact on different aspects of children's language development, including receptive language. Data revealed significant increases in experimental group children's reading attitude scores; however, there is no significant relationship between the increase in PPVT and reading attitude scores.

Another study focused on the acquisition of words and how children build their vocabularies over time. This study, conducted by Goodman, Dale, and Li (2008), focused on the relation between input frequency and age of acquisition for large samples of words. It provided the first comprehensive evaluation of the role of parental input frequency in early vocabulary acquisition. The authors based the study on the belief that the more often a specific word is heard, the earlier it should be learned by a child. The goals set forth were to investigate the relation between word frequency and children's early lexical acquisition, look at the role that input frequency based on child-directed speech plays in word learning, both across and within lexical categories and examine the role of frequency in the development of comprehension vocabularies, as well as production vocabularies.

Two-norming database were utilized to obtain word lists: The MacArthur-Bates Communicative Development Inventories [CDI] (Fenson, Marchman, et al., 2003) and the Child Language Data Exchange System [CHILDES] (MacWhinney, 2000). Parents were presented with a list of words organized by categories and asked to fill in one bubble if their child understood a word and another bubble if their child both understood and said the word. Parental frequency was estimated by searching all parental/caregiver's speech transcripts from interviews in the CHILDES database for every use of the items on the MacArthur CDI forms. Children, whose information was recorded in the transcripts, ages ranged from 0.7 to 7.5 with a mean of 36 months. Three notable aspects of results were prominent. The first is that across vocabulary as a whole, highly frequent words are not learned earlier. Nouns are least frequent, individually used by parents, but are the earliest learned by young children. Closed-class words are the most frequent items individually, yet the slowest to be acquired. This result goes against prior belief, however, the more frequently the word is heard, the earlier it is acquired in expressive vocabulary. The second notable result is the demonstration that age of acquisition is more strongly related to parental frequency, as estimated from transcripts of parent-child interaction,

than from norms based on adult-adult communication or written materials prepared for older children. And finally, the findings suggest a difference between comprehension and production, with respect to the role of input frequency. Parental frequency is a substantially more consistent predictor of age of acquisition for production than for comprehension. This difference might reflect lower validity for parental report of vocabulary comprehension on the CDI.

Factors that Disrupt Vocabulary Development

Children from low-socioeconomic status (SES) families on average, arrive at school with smaller vocabularies than children from high-SES families (Rowe & Goldin-Meadow, 2009). This gap is believed to begin in the toddler years while children are spending most of their time at home with their caregivers. Through previous research it has been found that on average, parents from higher-SES groups talk more, use more diverse vocabulary, and use more complex syntax with their children than parents from lower SES groups (Hoff, 2003). These differences relate to child vocabulary development. A study conducted by Roberts, Burchinal, and Durham (1999) examined how child and family factors affect individual differences in the language development of African-American children between the ages of 18-30 months. Eighty-seven African-American mother-child dyads were recruited over a 24-month period from nine community based childcare centers. Children were between the ages of 6 and 12 months ($M=8.2$ months) while mean maternal age was 24.2 years. 29 (33%) mothers were married, 12 (15%) were separated or divorced, and 45 (52%) were single. Upon entry into the study, the majority of the families (60) were from low-income households, according to federally defined poverty levels. Mean maternal educational level was 12.4 years ($SD=2.3$) and 31.8% of the mothers had less than a high school education. Mean IQ of the mothers was 87.1 ($SD=9.8$).

The McArthur Communicative Developmental Inventory McArthur CDI (Fenson, Dale, et al., 1993) was given to parents to assess their children's vocabulary and grammatical

development. A shortened version of the McArthur CDI words and sentences was used for this study. It consists of (a) Expressive Vocabulary, (b) Irregular Nouns and Verbs, and (c) Maximum Sentence Length. The assessment was completed in an interview format by researchers who became familiar with the families when their children were 18, 24, and 30 months in age. Children were also administered the Communication and Symbolic Behavior Scales [CSBS] (Wetherby & Prizant, 2001) at 18 and 24 months of age, the Peabody Picture Vocabulary Test-Revised at 3 years, and the Sequenced Inventory of Communication Development-Revised [SICD-R] (Hedrick, Prather, & Tobin, 1984) at 1, 2, and 3 years of age. Scores were corrected for gestational age for children born prematurely. Also, the Home Observation for Measurement of the Environment-Inventory for Infants [HOME] (Caldwell & Bradley, 1984) was administered at 9 and 18 months of age to assess the quality of children's home environments. These measures were administered by one of three trained examiners.

The first analysis described language development for the children in the study from ages 18 to 30 months. It included examining the distribution of the three McArthur CDI scores at each age and correlating them with other standardized measures of language. The second analysis tested for response bias in the McArthur CDI scores. After examining the subject's percentile scores, the authors compared them to a standardized measure to examine questions about over and under-reporting by parents. Preliminary inspection of the data indicated a high proportion of subjects who received percentile scores at or below the 10th percentile at 30 months on vocabulary (45%) and on irregular nouns and verbs (25%). The proportion under-reporting increased from the 18th month to the 30th amongst assessments. The results showed that African-American children's vocabulary and grammatical skills as reported by children's parents varied greatly and grew linearly over time between 18, 24, and 30 months of age. Due to this, over (8%, 13%, 7%) and under-reporting (25%, 40%, 39%), a secondary analysis was conducted by the researchers eliminating data from those children whose parents over or under-reported vocabulary

and grammatical skill on the McArthur CDI. The authors believe that these findings suggest that McArthur CDI percentile scores should be used cautiously with samples of African-American children from predominately low-income families.

Children from more stimulating and responsive homes were reported to have larger vocabularies, use more irregular nouns and verbs, have more rapid rates of acquisition of irregular forms, and longer utterances over time than children from less responsive and less stimulating homes. Girls also appeared to have larger vocabularies and quicker rates of acquisition of irregular nouns and verbs. The study's findings provide further evidence that early language development in a primarily low-income at-risk sample is linked to the responsiveness and stimulation that the child receives within the family environment.

In an effort to identify precursors to and remedies for inequalities that may place children at risk for failure, Rowe and Goldin-Meadow (1999) examined gestures that young children use to communicate before they develop the ability to use speech. This was deemed important because a positive relationship has been established between parent gestures, child gestures, and later child vocabulary development. Fourteen-month-old children from 50 families were videotaped engaging in ordinary activities with their primary caregivers at home for 90 minutes. Parents had an average of 15.8 years ($SD=2.2$) of education and average family income was \$60,000 ($SD=\$31,365$). All speech and gesture used by parents and children were transcribed during the interactions to glean measures of spoken vocabulary and gesture use. Children produced an average of 20.6 ($SD=11.9$) gesture types and parents produced an average of 39.3 ($SD=25.6$) gesture types. There was a positive relation between spoken word types and gesture types for both children (correlation coefficient $r=0.61, p < 0.001$) and parents ($r=0.67, p < 0.001$). Furthermore, parents who produced more gesture types had children who produced more gesture types ($r=0.44, p < 0.001$). SES was positively related to child gesture ($r=0.45, p < 0.001$) and to parent gesture ($r=0.45, p < 0.001$). However, there is no relation between SES and child

word types, though there was a positive relation between SES and parent word types ($r=0.44$, $p < 0.001$).

A correlation and regression analysis was used to determine whether the positive relation between SES and children's early gesture use is mediated by parent's gesture use during interactions with their children. The PPVT was introduced when children reached 54 months to test the correlation between amount of early gesture use (14 months) and later vocabulary development (54 months). At the conclusion of the study, the following assumptions were made: Parents from higher SES groups use gesture to communicate a broader range of meaning than parents from lower SES groups when interacting with their young children; and by 14 months of age, children from these higher SES families are using gestures to communicate more meanings than children from lower SES families. This concludes that as early as 14 months of age, children from different SES groups may be socialized to communicate more or fewer meanings via gesture. These early gaps in gesture may help to explain large disparities in vocabulary size at school entry. Even before they comprehend their own gestures, children may comprehend the gestures of others. Thus, child gesture could play an indirect role in word learning by eliciting timely speech from parents (i.e. child points to a doll and parent follows gesture with "Yes, that's a doll," thus providing a word for the object that is the focus of the child's attention) (Rowe & Goldin-Meadow, 2009). The researchers found that when parents translated their child's gestures into words this way, those words tended to become part of their child's spoken vocabulary.

Pre-Literacy Development

Long before they become readers, children acquire skills such as alphabet knowledge, sound awareness, and vocabulary that form the foundation of more sophisticated conventional literacy skills (Adams, 1990). Through daily experiences, they encounter opportunities to develop oral language skills, gain knowledge and skills of the forms and functions of written language,

and practice their emerging literacy skills (Weigel, Martin, & Bennett, 2005). These rudimentary skills are the key to pre-literacy development. Children must grasp these concepts in order to become successful, fluent readers. The following studies highlight interventions to foster pre-literacy skills as well as the importance of involving parents in the process.

An experimental project by Jordan, Snow, and Porche (2000) focused on training parents how to engage their children in specific literacy practices and examined the effects of a year-long intervention on language and literacy outcomes for 248 kindergarteners. The study utilized a pretest/posttest group design and was conducted in four designated Title 1 schools, where poverty rates were slightly higher (18 to 21%) than the district average (15%). The median family income for this district was \$41, 731, suggesting that many of the families were middle class. The intervention group consisted of 8 classrooms ($n=177$) of students and their families. The control group consisted of three classrooms ($n=71$.) Pre-test measures included a parent survey of home literacy activities, administration of PPVT, and vocabulary, story comprehension, letter recognition, concepts of print, environmental print and invented spelling subtests of the Comprehensive Assessment Program [CAP] (American College Testing, in press). The independent variable involved 5, one-month parent training sessions conducted by a parent educator using scripted lessons. The five trainings were broken into monthly themes, including vocabulary development through parent-child book reading and flashcards, storybook understanding, concepts of print, storybook discussions, letter-sound learning using letter books and follow-up art activities, story retelling using oral language and spelling/writing exercises, and explanatory talk about nonfiction books. Each session was followed by opportunities for participants to practice parent-child literacy activities. Teachers sent home a set of scripted activities incorporating the lessons that were the focus of that month's training.

An analysis of the pretest measures indicated that both experimental and control groups were closely matched on the PPVT and at least 12 different CAP measures. However, there were

two instances of statistically significant difference on the CAP pretest measure as a function of group affiliation. The control group started out higher on the story sequence subtest and the experimental group started out scoring higher on the sound awareness. A repeated measure ANOVA was used to examine the interaction of group and time. This indicated that the experimental group made more statistically significant gains than the control group on the following CAP measures; vocabulary ($F = 32.08; p < .001; d = .94$), story comprehension ($F = 6.85; p < .01; d = .43$), story sequence ($F = 12.86; p < .01; d = .59$), sound awareness (ending sound) ($F = 7.45; p < .01; d = .45$), and concept of print/reading ($F = 8.13; p < .01; d = .47$). Language, sound, and print post-test scores had moderate to strong relationships to each other. Correlations for these constructs ranged from .32 to .72. Regression analysis demonstrated that participation in at-home scripted activities produced significant gains on post-test language composite measures. In addition, this was also correlated with gains in sound and print awareness outcomes.

A longitudinal study looked at the effects of the collaboration of teachers and parents on children's reading at home (Tizard et al., 1982). This study followed children for two years as they progressed from pre-school to first grade. Children were monitored reading at home to their parents from books sent home by their teachers. Researchers visited the homes either two or three times each year to observe the selected children reading to their parents. In some cases, parents were advised on appropriate procedures and reading practices. A total of six kindergarten classrooms in six different inner city schools participated in the study. There were no significant differences found between treatment group and control group children within each school on demographic factors, such as father's occupation, language spoken at home, pre-school experience, length of residence in the community, and frequency of school attendance. In the control group classes, a teacher also listened to the children read twice per week at school and in two classes the children received no extra help.

A series of reading assessments were conducted at the end of each intervention school year. The tests were specific to each age level and focused on several literacy skills, including word recognition, reading comprehension, and phonics. Within-school comparisons were conducted between treatment and control group children at the end of the first intervention year. At that time, significant differences were found on the National Foundation for Education Research Test for students in one of the treatment schools ($p < .006$). However, the authors noted that the interventions did not become operational until later in the school year, so the effects being measured by the test may not have been reflective of a full year of intervention. At the end of the second year of intervention, children's reading performance was tested again. Results indicated significant differences between treatment and control groups in each home collaboration school ($d = .62$; $p < .0001$ and $d = .30$; $p < .01$, respectively). Mean reading scores were higher for children who read books at home. A further analysis also yielded evidence of main effects for initial reading level ($p < .001$), school enrollment ($p < .007$), and experimental group assignment ($p < .001$) concluding that although initial reading level was a powerful predictor of reading outcomes, parent involvement was demonstrated to benefit children of all reading levels.

Shared Book Reading

A program to promote the activity of shared book reading between children and parents was evaluated by Hannon (1987). The study focused on groups of children, ages 5 to 8 years old, and their parents. Census data, unemployment figures, and numbers of children receiving free and reduced lunch were used to determine socioeconomic status of participating families. Subjects were followed for a period of three years. Reading outcomes for the children enrolled in the program were compared to pre-program subjects. The program consisted of classroom teachers encouraging parent-child reading by sending appropriate level books home with the children along with a card on which parents were to record the frequency of times when children read to

their parent or another adult in the home. Teachers also sent home suggestions for different reading activities. The pretest measure of children's reading ability was obtained by grading the difficulty of books taken home prior to the beginning of the intervention. There were no significant differences on this measure between the treatment and non-treatment groups. Outcome measures included two reading tests, the National Foundation for Educational Research Reading Test A (National Foundation For Education Research, undated) and Young's Group Reading Test (Young, 1974). These tests were administered to treatment and non-treatment groups at the end of the intervention period.

Results did not indicate a significant difference on the reading measures between treatment and non-treatment groups. However, since the study did not account for the effects of history on treatment and non-treatment children, an interview process was added that indicated that parents of both cohorts spent similar amounts of time reading to their children. Analysis of interview data and self-report data from the cards given to parents indicated a significant correlation between increasing frequencies of reading at home and reading test scores ($p < .02$). The study demonstrated to have several limitations including, a lack of control for the effects of history on groups, small amounts of pretest data obtained for subjects making it difficult to control for pretest differences, and treatment integrity was not monitored to ensure that parents were listening to their child read on a regular basis. Also, qualitative measures such as self-report often prove to be less reliable than quantitative measures such as obtaining observational data. A study conducted by Morrow and Young (1997), focused on promoting family literacy through the use of family-based literacy activities. A total of 54 first grade children and their families participated in the study. Six first grade classrooms were randomly assigned to treatment or control groups. The study lasted throughout the entire school year. Children in the experimental group participated in both a home and school-based program. Children in the control group participated in the school-based program only. The treatment was called the Family Writing and

Reading Appreciation Program for Parents and Pupils [WRAP] (Morrow & Young, 1996). The treatment included parents reading to and with their children, journal writing, writing and reading words. Parents also participated in other home-based print awareness activities, such as reading mail and road signs and completing activities in a literacy-based magazine. Parents were given a parent handbook, which explained how to conduct the home-based WRAP program. The school-based portion of the WRAP program included literacy centers with books, felt boards with story characters, writing centers, and taped stories. Another component had teachers modeling reading, storytelling, writing, performing shared reading, and focusing on print awareness.

Measures of reading achievement and motivation for reading/writing were administered to all children at the end of the intervention. These measures included tests of story recall (rewriting, retelling) and comprehension, teacher ratings of children's interest in reading and writing, and interview data regarding after-school family literacy activities. ANCOVA results indicated that the experimental group significantly out-performed the control group on story retelling ($p < .001$), story rewriting ($p < .001$), and comprehension ($p < .001$). Furthermore, teacher evaluations rated children in the experimental group as showing more proficiency in reading and writing ($p < .001$). Concerning the given results, it is unclear whether the teachers were blind to which children were participating in the home-based WRAP intervention. Interviews with children yielded evidence that those in the experimental group read or looked at books more than those in the control group ($p < .002$). This study provides more evidence of the effects of literacy-based parenting practices in conjunction with school-based activities. Most of the research focused largely on developmental reading activities and avoided looking at specific skills. However, a portion of the outcome data was based on less reliable measures, such as teacher ratings and child self-report.

The final study focuses on the effects of joint book reading on the child's future reading achievement between pre-schoolers and their parents. A meta-analysis of 29 previously

conducted studies was performed by Bus, Van Ijzendoorn, and Pellegrini in 1995. In these studies, book reading was operationalized in two different ways. The researchers examined the number of times per week that parents read to their children and the frequency of book reading as a composite variable including more qualitative components of reading. Three categories of outcome measures were included in the meta-analysis. First, book reading was linked to language measures such as the PPVT and the Illinois Test of Psycholinguistic Abilities [ITPA] (Kirk, McCarthy & Kirk, 1967). Since there were no standardized measures of emergent literacy available, the second category, emergent literacy skills, was created using a combination of name writing or reading, letter naming, and phoneme blending. The final category examined reading achievement studies and measured literacy skills during school aged children. The meta-analysis yielded an overall effect size of $d = .59$ on measures of language growth, emergent literacy and reading achievement. According to Bus et al., (1995) this in effect, explained approximately 8% of the variance on these outcome measures. The authors further point out that joint book reading was shown to be a greater predictor of reading outcomes than the inability to read non-words as a predictor of reading disability ($d = .48$). Effects of parent-child book reading were largest for language growth ($d = .67$). However, medium effect sizes were also found for emergent literacy ($d = .58$) and reading skills ($d = .55$). This analysis provides further evidence of the effects of parent-child book reading during pre-school aged children on language development, their pre-literacy and later reading skill development. This supports the premise that parent-child literacy activities are powerful predictors of reading development. However, the meta-analysis does fail to address the effects of home literacy environments on young children prior to kindergarten entry.

Summary

The review of studies in vocabulary and pre-literacy development suggests several key findings; First, language development in children is at its height during the early years of life (Adams, 1990). Second, parental involvement is key to literacy development, and third,

vocabulary and language acquisition is an important prerequisite for pre-literacy skill development in young children (Hart & Risely, 1995). Early childhood is thus a critical educational period, as SES differences in language skills first emerge during these years (Rowe & Goldin-Meadow, 2009). Findings from these studies suggest that early literacy interventions should focus on efforts to combine parenting practices with vocabulary development to enhance pre-literacy skills. This research illustrates the complex nature of vocabulary and pre-literacy skill development and the potential lasting effects of different types of parental involvement needed to foster these constructs. According to these results, first grade reading skills are strongly predicted by emergent literacy and receptive language. The skills needed to thrive are developed through parent-child activities, such as storybook exposure and parents teaching children how to read words. Also, vocabulary is a key predictor of school success and is the primary reason why low SES children enter school at greater risk for failure.

Performance Feedback

Literature on performance feedback appears to focus on similar themes. Performance feedback has been defined as a method of providing information or knowledge of processes and results to promote transfer or maintenance of skills and behaviors. Through these studies, performance feedback has shown to be a key factor in initiating change (Noell, Witt, Gilbertson, Rainer, & Freeland, 1997). Generally speaking, for performance feedback to be effective, the individual administering the feedback must be able to manipulate rewards and punishers related to the target persons' performance, which has significant bearing on the effect of the feedback (Duncan & Brunwelheide, 1985). An early feedback study conducted by Cossart, Hall, and Hopkins (1973) evaluated the impact of performance feedback on the rate of praise statements delivered by teachers to students. In this study, an examiner recorded the rate of the teacher's praising statements and then provided feedback or feedback plus social praise to the chosen teachers. The major purpose of this experiment was to study the causal factors in increasing

teacher praise by measuring and recording behaviors of all participants, including the experimenter's verbal interaction with the teacher. This study featured an examination of the complete chain of behaviors from experimenter, through teacher, through student (Cossart et al., 1973). It utilized a multiple baseline design with multiple subjects (three elementary school teachers). After concurrent baselines of behaviors were recorded, three experimental conditions that included instructions, feedback, and feedback plus social reinforcement were introduced to teachers at different points in time, providing a means for component analysis within this study.

The study was carried out in two elementary schools in a low socio-economic area of Kansas City, Kansas. Two fourth-grade teachers and one third-grade teacher participated. All three teachers were effective in controlling their classes and little disruptive behavior occurred in their classrooms as this study was carried out. The three teachers had no knowledge of experimental conditions or hypotheses. Each teacher selected four students who exhibited attention and instruction-following behavior. These students were seated at the same table in the classroom to enable more reliable observation of their behavior. Target students selected for this study included five boys and seven girls. Data was recorded twice daily as students alternately worked on one of two specially prepared math sheets. Teachers read the specific instructions aloud for each sheet to the class. Math sessions were approximately 15 minutes in length. Observational data on student attending behavior was taken only during teacher's specific instructions. One minute of post-instruction time was allowed for the students to work each row of problems. During this post-instruction interval, any comments by the teacher were recorded by the observer as well as student attending. The four target students were observed one-by-one in a clockwise sweep of their table. Each target student was observed for the duration of one instruction. This method produced good reliability of observation in that both observers were cued by the instructions to look at the same student simultaneously. The experimenter had a post-session conference with the teacher after each session throughout the experiment. The

experimenter recorded each post-session conference with the teacher using a cassette tape recorder. Tapes were played back and the durations of these post-session conferences were recorded, as well as the number of the experimenter's positive comments for teacher praise, on a second recording sheet. The experimenter purposely made separate and complete sentences to facilitate a reliable count of contingent praise statements to teachers. To determine the extent to which data was reliably transferred or observed, a second observer was utilized for each phase of the experiment. The percent of agreements was computed as the number of agreements divided by the number of agreements plus disagreements times 100. Reliabilities were taken in each phase of the experiment on teacher praise, intervals of student attending, and experimenter's praise. Reliability ranged from 80% to 100% and means of all reliabilities taken was 93%.

Baseline conditions for all three teachers consisted of recording percent of intervals that students attended to the teacher, number of intervals of teacher praise for student attending, and number of intervals of teacher attention to non-attending, as the teacher read the instructions for each math sheet. Teachers were then introduced to the instructions condition, where they were given information about how important it was to praise student behavior. After the instructions condition, the teacher then moved into the feedback condition. During the feedback condition, Teachers A and B were given verbal feedback at the end of each session. This feedback consisted of the experimenter telling the teacher the number of intervals during which the students attended to her instructions and the number of intervals of teacher praise for student attending behavior. At the conclusion of this phase, teachers moved into the feedback plus social praise condition. The teachers were given social praise for their praise of student behavior, along with a verbal report of the number of intervals of student attending and the number of intervals of teacher praise. Both teachers received feedback and social praise during each post-session conference with the experimenter for the first eight sessions of their feedback plus social praise conditions. Beginning with session nine of this phase, they received only intermittent feedback and social praise for the

remainder of the experiment. Teacher C's baseline was 10 sessions long and was carried out using the same procedures as were used with Teachers A and B. All experimental conditions were introduced simultaneously to Teacher C as a package.

During baseline, the mean percent of students attending Teacher A was 7% and the mean percent of students attending Teacher B was 16%. Neither Teacher A nor B gave any teacher praise for appropriate attending during baseline conditions. The experimenter deliberately did not comment on teacher attention during baseline or in the first two experimental conditions. After the instructions condition was introduced, Teacher A's rate of positive attention to student attending rose from zero to a mean of 1.4 intervals for 12 sessions of the instructions condition. The mean percent of intervals students attended Teacher A during the instructions condition increased to a mean of 31% from the baseline mean of 7%. Teacher B's baseline rate of teacher praise for student attending, along with the percent of student attending to her, remained stable through session 20. The introduction to the instructions condition to Teacher A initially produced teacher praise for student attending. Coinciding with increased teacher praise were higher percentages of intervals in which students attended. Instructions to Teacher B produced no significant changes in Teacher B's behavior. Teacher praise for student attending remained at zero throughout the sixteen sessions of the instructions condition. Intervals of student attending increased from a mean of 31% during baseline to a mean of 36% during the instructions condition. The institution of the feedback condition to Teacher B initially produced teacher praise for attending, which had previously remained at 0 through the baseline and instructions conditions. The mean rate of this behavior was one instance of teacher praise per session for the eight sessions of the feedback condition. Intervals of student attending increased to a mean of 47% in Teacher B's feedback condition.

Feedback plus social praise resulted in an immediate increase in Teacher A's praise for student attending. Teacher A's mean number of intervals of teacher praise rose to five per session

during this phase, and intervals of student attending behavior increased from a mean of 36% per session in the feedback condition to a mean of 85%. The experimenter's mean number of positive comments for teacher praise was 2.6 per post-session conference with percent of intervals students attended to Teacher A. Teacher B increased from 47% per session during the feedback plus social praise which resulted in an increase in Teacher B's praise. The mean per session during the feedback condition with the number of the experimenter's positive comments was 14.5 per session. The mean praise for Teacher B was 2.1 per session. Teacher C's baseline rate of praise was zero, which was identical to the rates of praise by Teachers A and B during their baselines. As in the case of Teachers A and B, the experimenter made no comments about teacher attention during baseline. The mean percent of intervals students attended Teacher C was 62% during the baseline sessions. Introduction of the -package (condition of instructions and feedback plus social praise) resulted in an increase in teacher praise from 0 during baseline to a mean of five times per session. Intervals of student attending behavior rose during this phase from the baseline mean of 62% to a mean of 94%. The experimenter averaged three positive comments for teacher praise per session.

Two post-checks were taken in Teacher A and Teacher B's classrooms three weeks after termination of continuous observation. The post-checks revealed a decrease in teacher praise for student attending behavior from previous high rates of praise reached by teachers in the later sessions of the feedback plus social praise condition. Teacher C's post-checks, made two weeks after continuous observation, was terminated and produced the following means: teacher praise, four per session; percent of intervals students attended teacher, 97%; thus, it was indicated that high rates of teacher praise and intervals of student attending were being maintained. Overall data indicated that instructions (antecedents) produced inconclusive results in increasing teacher praise, in that Teacher A was under the experimenter's instructional control and Teacher B was not. Also, even though Teacher A initiated teacher praise, this behavior change was not durable.

The Feedback Condition data indicates that feedback preceded by instructions may or may not be effective in increasing teacher praise. In the case of Teacher A, the feedback condition produced less teacher praise than did instructions. Teacher B did initiate teacher praise during the feedback condition, but it was not durable in that teacher praise quickly dropped back to zero after only four sessions. As in the case of instructions (an antecedent manipulation), feedback (a consequence manipulation) produced inconclusive results that call for further research.

The final condition for Teachers A and B, and the package condition for Teacher C, combined feedback and social praise for teacher praise of pupil attending behavior. The increased rates of praise by all three teachers suggest that social praise is a necessary ingredient in changing teacher praise behavior. As shown with Teachers A and B, feedback plus social praise, when preceded by instructions and feedback, effects significant changes in teacher praise. In the case of Teacher C, in which the package condition of instructions, feedback, and social praise was introduced as a unit, significant increases in teacher praise were noted. Data recorded on teacher attention to non-attending student behavior showed that no significant change occurred throughout the study. The results of the permanent product data (specific instructions followed and problems corrected on math sheets) for Teachers A and B showed that little significant change took place during the experiment other than a slightly ascending trend. This upward trend might be attributed to daily practice. Permanent product data on Teacher C's target students indicated an increase over baseline during packaged experimental condition but concrete conclusions about cause cannot be reached. Intervals of student attending behavior increased with the introduction of teacher praise. Higher means of intervals of teacher praise within conditions generally coincided with higher means of the percent of intervals students attended teacher. Data on intervals of student attending completed the chain that began with the experimenter and ended with the student, thus indicating that student's behavior was indirectly sensitive to the experimenter's behavior. Teacher praise maintained and even increased when teachers were

placed on an intermittent schedule of social praise. Operant principles of reinforcement systematically applied would therefore seem to be functional in helping improve instruction. It would also seem that this could be done with a minimal amount of time and effort.

More recent studies extend this work examining feedback effects on treatment integrity. Mortenson and Witt (1998) investigated the effects of performance feedback on the implementation of a reinforcement -based classroom intervention. Levels of teacher treatment integrity and student academic performance were examined and compared across experimental conditions in a multiple baseline design. To further evaluate the effect of the independent variable, a maintenance phase, where feedback was no longer provided, followed a demonstration of experimental control. The maintenance phase was not implemented if idiosyncratic aspects of the case contraindicated it. The study yielded data on two outcomes: teacher pre-referral intervention implementation (treatment integrity) and student academic performance (general outcomes). Measurement of both treatment integrity and student academic performance was conducted by review of permanent products. Performance feedback increased teacher implementation of pre-referral intervention in three of the four cases presented. Student data demonstrated improvement but were more variable than teacher data throughout the study. The participants included four teacher-student dyads in regular education in two public school systems in southeastern Louisiana. All teachers were female, certified to teach at the elementary level, and had teaching experience ranging from four to 12 years. Teacher participation was voluntary and limited to those who taught in grades two through five and who initiated a referral with the multi-disciplinary team at the school. All students in the study exhibited academic performance deficits, which were determined by the materials required for implementation of the intervention.

Each teacher was provided with a typed list of intervention steps to which the teacher could refer to during implementation, a student folder to collect all intervention permanent products, a student self-monitoring form that represented a weekly history of the students'

academic performance on daily assignments and all extra academic assignments, a packet of bonus worksheets, pre-printed paper reward slips, a supply of forms that contained summaries of the student's daily performance, one standard 8.5 x 11 inch clipboard to secure all paper intervention materials during the intervention phases, and tangible reinforcements used throughout the course of the intervention pre-treatment assessment procedure.

Inclusion of each teacher and student in this study was based on a two-phase process. The first phase consisted of a teacher interview with questions pertaining to the student's attendance, medication status, behavior, and past performance. Students who were absent too frequently or exhibited severe behavioral problems were judged to be unlikely to successfully complete the study. Students who were administered medication routinely were excluded because administration of the medication was beyond the control of the experimenter. Teachers of students who were excluded from the study were provided with verbal recommendations for enhancing student performance. The second phase of the process consisted of a brief student screening. The student screening was part of the treatment validation process, which was designed to ensure that the treatment was appropriate for the problem and that the child would benefit from the treatment.

Following initial validation of the treatment by the consultant, the results were communicated to each teacher. Teachers were told the student's academic problems appeared to be one of "won't do" rather than "can't do." Because the treatment steps differed from the teacher's normal daily routine, the skills needed to implement the intervention were systematically taught to the teacher on the first day of implementation both outside the classroom and inside the classroom during the regularly scheduled time for the designated subject. During the no assistance phase, if the student's academic performance on the daily assignment was at or greater than the academic performance goal set by the teacher, he or she received a reward slip and was prompted to place the reward slip in their folder. Before the end of the school day, the

student removed the reward slip from the folder and indicated a preference for one reinforcement. The performance feedback phase was initiated when treatment integrity scores were stable or decelerating and revealed treatment implementation below 70%. Student performance was taken into consideration when the treatment implementation was marginal. The duration of performance feedback meetings varied depending on the amount of corrective feedback needed. In general, performance feedback meetings were five to seven minutes in duration. For teachers who demonstrated improvements in implementation integrity during performance feedback, the maintenance phase was initiated.

The effects of performance feedback were evaluated on both treatment integrity and student academic performance. The provision of performance feedback resulted in immediate increases in overall teacher treatment integrity for each of the three teachers whose performance feedback was given to in the study. A fourth teacher did not receive performance feedback due to initially high levels of treatment integrity. All teachers implemented the treatment with 100% integrity during the in-class training. The first performance feedback session for three of the teachers, occurred after the third, fifth, and seventh days of the no assistance phase. During performance feedback, implementation of the intervention steps varied for all four teachers. The data for Teacher One indicated that implementation during the no assistance phase ($M = 48\%$) increased when provided with feedback ($M = 80\%$) and decreased in variability. The maintenance phase for Teacher One resulted in a slight decrease in implementation ($M = 72\%$); however, levels were higher than the no assistance phase. The results for Student One indicated gains in academic performance when he entered treatment during the teacher training (score = 100%) and no assistance ($M = 80\%$), and performance feedback ($M = 85\%$) phases from student academic baseline ($M = 60\%$). Student One continued to show academic gains during the maintenance phase ($M = 93\%$).

The data for Teacher Two indicated implementation during the no assistance phase ($M = 61\%$) increased during performance feedback ($M = 71\%$). Teacher Two's data during the performance feedback phase overlapped with the data during the no assistance phase. The authors' reported that this overlap may indicate a lower level of experimental control compared to the other teachers. The student for Teacher Two missed the last two full weeks of the school year, so additional data collection to strengthen the demonstration of experimental control was not possible. For Student Two, mean increases from student academic baseline ($M = 54\%$) were evident during teacher training (score = 75%). During the no assistance phase ($M = 26\%$), his performance indicated a sharp decline and remained low until the implementation of the performance feedback phase ($M = 68\%$). During performance feedback, the student had considerable improvements on three out of the four assignments.

The data for Teacher Three shows an increase in implementation from the no assistance phase ($M = 61\%$) to the performance feedback phase ($M = 79\%$). During performance feedback, Teacher Three's implementation suggested a slightly more modest trend with decreasing variability but it did increase. Teacher Three continued stable implementation during the maintenance phase ($M = 84\%$). The greater stability of Teacher Three's maintenance data compared to Teacher One's maintenance data may be a result of the length of time Teacher Three was in the performance feedback phase. The results for Student Three indicate gains in academic performance during the teacher-training phase (score = 75%) from student academic baseline performances ($M = 71\%$). During the no assistance phase ($M = 54\%$), the student exhibited an initial decrease in performance followed by a steady increase on three of four assignments. His performance continued to improve during the performance feedback phase ($M = 80\%$) and maintained this performance level in the maintenance phase. The data for Teacher Four shows stable implementation during the no assistance phase ($M = 86\%$). Teacher Four never entered the

performance feedback phase, due to acceptable levels of intervention implementation during the treatment phase.

Overall, the data shows that three of four teachers in this study exhibited descending levels of pre-referral intervention implementation during the no assistance condition. The introduction of performance feedback resulted in immediate increases in levels of treatment integrity for all three teachers to whom it was applied. The effect of the intervention on student behavior is more variable and more difficult to interpret than the data for teachers. In general, student academic performance also improved when the teacher implemented the treatment with integrity, which can be seen when comparing student's academic baseline with the student academic performances during each phase.

Treatment Integrity

Another study by Coddling, Feinberg, Dunn, and Pace (2005) also examined the performance feedback effects on treatment integrity but the feedback implementation was immediate. This study represents an example of the effects of performance feedback on the data collection aspect of behavior interventions. It was conducted in a private school for students with acquired brain injury who exhibited significant behavior problems. Students were all male and ranged in age from 10 to 19 years. Three of the students had non-traumatic acquired brain injuries, and two students had been diagnosed with a traumatic brain injury. The sample of students observed comprised approximately 10% of the total population of the school. Observational data was collected in two special education classrooms on a total of five teacher–student dyads. Two dyads were identified from Classroom One and three dyads were identified from Classroom Two. All teachers participating in the study had earned a bachelor's degree and were enrolled in a master's level program in special education.

Teachers' experience working in this environment ranged between six and thirty months. All teachers received formal training in basic principles of applied behavior analysis and

implementing behavior support plans prior to the study. Teachers also received in-service training on general behavior principles four times a year and two weeks of specific training on individual students' plans at the time they were developed. The latter training included reviewing the written plan with a consultant, modeling by the consultant in the classroom with the target student, prompting the teacher to employ the components as written and immediate performance feedback given by the consultant. Teachers were not trained to a standardized criterion; however, training continued until they could verbally report each component of the plan and reported that he or she could implement the plan. Consultants were present in the classrooms on a daily basis and provided informal feedback to teachers.

A concurrent multiple baseline across teacher–student dyads design was selected for each classroom to evaluate the efficacy of performance feedback. Maintenance sessions were employed to examine the short-term effects of the intervention when feedback was no longer provided. Inter-observer agreement was collected across 20% of the sessions. Mean agreement across dyads was 95% (range, 91% to 100%). Observations were conducted an average of every two and a half weeks for each dyad with a range between one and three weeks and were sixty minutes long. This was maintained throughout the baseline, intervention, and maintenance phases of data collection. To reduce reactivity, the researchers conducted observations on a variable time schedule and used consultants who routinely worked in the classrooms as primary observers.

Baseline consisted of observing each student–teacher dyad and completing the integrity data sheet without the teachers' knowledge of the observation. Performance feedback was implemented following this observation after stable or decreasing performance in baseline was demonstrated by either the percentage of antecedent components or consequence components implemented to address inadequate plan implementation. On the same day as each following observation, the experimenter met with the target teacher outside the classroom to review the behavior support plan (BSP). Feedback was provided on all the components that were observed.

Feedback included providing praise for components sometimes, but not always followed as written and constructive feedback. Performance feedback was terminated after improved performance had stabilized. The first maintenance session occurred five weeks after the last feedback session. Each follow-up session occurred at five-week intervals across dyads. In Classroom One during baseline, a decreasing trend was evident for the percentage of consequence components that Teacher One implemented as written ($M = 31\%$). Performance of antecedent components implemented correctly was stable ($M = 69\%$) during baseline. Following performance feedback, there was an immediate increase in the percentage of consequence components correctly implemented ($M = 92\%$) and a gradual increase in the percentage of antecedent components correctly implemented ($M = 92\%$).

Teacher Two's performance during baseline was variable for the correct implementation of antecedent and consequence components. It appears that his data was difficult to interpret. He correctly implemented 100% for 8 sessions, 50% for three sessions, and 0% for two sessions. The mean percentage of components correctly implemented during baseline was 85% for antecedents and 73% for consequences. Following performance feedback, he demonstrated 100% correct implementation across consequence components for three consecutive sessions ($M = 100\%$). There was also very little change in his correct implementation of antecedent components ($M = 89\%$). In Classroom Two during baseline, a decreasing trend occurred for the percentage of antecedent components correctly implemented by Teacher Three ($M = 40\%$). She did not correctly implement any consequence components during baseline ($M = 0\%$). Following performance feedback, substantial improvements were demonstrated in the percentage of correctly implemented antecedent ($M = 78\%$) and consequence components ($M = 95\%$). As for Teacher Four, correct implementation of antecedent components remained stable ($M = 47\%$). Correct implementation of consequence components appeared to be increasing in baseline ($M = 27\%$). Attempts were made to have stable or decreasing trends in baseline prior to the

implementation of performance feedback. However, the researcher decided to initiate feedback when the implementation of antecedent components was stable.

Following performance feedback, correct implementation of antecedent ($M = 95\%$) and consequence ($M = 95\%$) components improved. However, much like Teacher Two in Classroom One, the sequence of baseline and performance feedback was varied for Teacher Five. During the initial baseline phase, Teacher Five displayed stable performance for the implementation of antecedent components as written. He did not correctly implement any consequence components. Following the initial baseline, an increase in the frequency and intensity of his student's physical aggression required three revisions to his behavior support plan. During the maintenance phase, treatment integrity was maintained at high rates across all teachers. The percentages of antecedent ($M = 83\%$) and consequence ($M = 100\%$) components correctly implemented were maintained five and ten weeks following the termination of performance feedback for Teacher One and Teacher Two. High levels of correct implementation were maintained across antecedent ($M = 83\%$) and consequence ($M = 100\%$). For Teacher Three, high percentages of correctly implemented antecedent ($M = 89\%$) and consequence ($M = 92\%$) were maintained up to 15 weeks without performance feedback. Teacher Four also implemented high percentages of antecedent ($M = 92\%$) and consequence ($M = 100\%$) as written during three follow-up observations. Five weeks after performance feedback was terminated, Teacher Five correctly implemented 100% of antecedent and consequence components. This study showed that the results of performance feedback can be maintained for up to 15 weeks. Performance feedback resulted in greater percentages of both antecedent and consequence components correctly implemented for four of five teachers. For the fifth teacher, performance feedback resulted in increases in correct implementation of consequence components.

A more recent study by Hagermoser-Sanetti, Luiselli, and Handler (2007) compared the effects of verbal performance feedback and verbal plus graphic performance feedback on

implementation of a student specific BSP. Four members of a second grade teaching team at a public elementary school in a suburban city were chosen to participate in this study. The team consisted of a general education teacher, a special education teacher, and two instructional aides. There was one student participant, an eight-year old Caucasian male, who was diagnosed with a pervasive developmental disability.. An individualized BSP had been created for the student and was ongoing at the time of the study. The BSP targeted noncompliance, inappropriate verbalizations, verbal outbursts, tantrums, and learning activities. An integrity data sheet was used that included an operational definition of each component in the BSP. Using the integrity data sheet, the primary researcher conducted a one hour classroom observation approximately every six days throughout the study. Inter-observer agreement (IOA) for the treatment integrity measure was assessed by having a second person record data independently with the consultant during 31% of classroom observations.

The study utilized an A-B-BC-B-BC reversal type design. The baseline phase included consultation to the teaching team prior to performance feedback. First, the consultant trained the student's teaching team to implement his BSP using methods previously shown to promote treatment integrity. Intervention consisted of the consultant observing the teaching team implementing the student's BSP, followed by check-in sessions with them at which time they received either verbal performance feedback or verbal and graphic performance feedback. When percentage of BSP components implemented as written dropped below 80% for three consecutive observations, the verbal performance feedback phase began. Immediately following a classroom observation, a meeting would follow. When percentage of components implemented as written dropped below 80% for three consecutive observations with verbal performance feedback, the graphic and verbal performance feedback phase also began. Immediately following an observation, a meeting would take place in which the researcher presented the student's teachers with verbal critiques and a graphic display of collected data via a computer generated graph.

During the baseline phase, the teaching team had 100% treatment integrity on the day of training, and decreased continually over the subsequent weeks. Treatment integrity did not improve when the consultant gave the teaching team verbal performance feedback (M=42.9%). The combination of verbal and graphic performance feedback increased treatment integrity to an average of 91%. Integrity decreased to 49.2% when verbal performance feedback was maintained without graphic performance feedback and increased to an average of 87.2% when both procedures were combined a second time. During baseline, appropriate behavior averaged 70.7%. The student's appropriate behavior during activities increased to an average 77.8% when the consultant provided verbal performance feedback to the teaching team. His appropriate behavior during the first verbal and graphic performance feedback phase increased to an average of 94.7% of activities per day, decreased to an average of 83.7% when only verbal performance feedback was delivered, and increased to an average of 85.7% when the combination of verbal and graphic performance feedback was reinstated.

The study extends the line of research investigating the effect of performance feedback on the implementation of school-based interventions in three ways. First, the study compared two types of performance feedback to improve treatment integrity in the context of delivering school-based consultation. Second, the study supports the effectiveness of performance feedback that is given immediately following an observation, instead of later in the school day or on the day or week following an observation. Third, the study contributes to the literature on the relationship between treatment integrity and student outcomes.

An evaluation of a computer assisted method of performance feedback was conducted by Reedy, Luiselli, and Thibadeau (2001). This study examined the observation and documentation of instructional activities conducted by staff at a residential school for children with developmental disabilities. The study utilized a multiple baseline design. The participants were 19 teachers who were employed at a private residential school for children with developmental

disabilities. All teachers had received college undergraduate degrees in psychology or special education related fields. Teachers were assigned randomly to a permanent work assignment within three community-based group homes. Six teachers were in group home number one, seven worked in group home number two, and three worked in group home number three. Teachers were responsible for the daily implementation of resident's individual education plans. Three operant definitions were developed to assess the degree to which teachers conducted these observations correctly. Each day teachers in the group homes collected data and recorded the session results on children's data sheets. Correct observations were transcribed into the computer and incorrect observations were omitted. The computer printed a feedback form using Microsoft Excel listing all incorrect observations for each group home and the percentage of assigned observations conducted correctly in each group home for that day. The results indicated that feedback was effective in improving the performance of staff at each group home. Average correct performance by staff was 30% during baseline and 48% during feedback for group home number one, 44% during baseline and 61% during feedback for group home number two, and 39% during baseline and 53% during feedback for group home number three. It is believed that the content of the feedback helped the supervisors determine the source of errors quickly while providing objective data about daily performance. The feedback generated as a by-product of the regular data entry routines required minimal effort by administrative personnel and may have also contributed to the changes. However, the changes in staff behavior were modest, and in group home number one change stabilized at 50%. This suggests that although performance feedback can increase desired staff behavior, additional procedures may be required to achieve further gains.

Summary

The majority of the literature presented on performance feedback looked at the scheduling effects when feedback was provided and the method in which it was delivered. The

data finds that both of these elements play a key role in the effectiveness of performance feedback on the desired outcome (Mortensen & Witt, 1998). A limitation found in the research is that many of the studies focused on single subject design to implement treatment (Coddington et al., 2005; Hagermoser-Sanetti et al., 2007; Mortenson & Witt, 1998). However, feedback has shown to be an effective method of intervention resulting in behavior change and promoting treatment integrity. It has also been shown to have the potential of being a low demand intervention that can be applied in several ways and in a variety of contexts.

Summary of Review

The previous literature has contributed to the knowledge base of this study and has provided vital background information needed to formulate testable hypotheses on the subject matter. The present study consists of a program that examines elements of each topic summarized in the review. The study was initially modeled after a Fuchs and Stecker (2000) progress monitoring performance feedback study, but was adjusted to examine the construct of parenting practices. Dyads of pre-school aged children and their parents were matched by the child's age and randomly assigned to one of three groups. Both the American Guidance Service Early Screening Profiles [AGS-ESP] (Harrison et al., 1990) and Peabody Picture Vocabulary Test –III (PPVT-III) were given as pretest and posttest measures with the PPVT-III scores co-varied out to control for receptive language skills, cognitive ability and SES, using vocabulary as a proxy measure of cognitive ability for SES (Hart & Risley, 1995) and prior letter naming skill. Children whose parents were in the treatment group were given a workshop on school readiness and bi-weekly feedback on their child's performance on selected progress monitoring measures. Children whose parents were in the control group did not receive bi-weekly feedback. Instead, these parents were given the workshop and asked to continue with their regular parenting practice activities they had been engaged in prior to volunteering for the study. The waitlist control group

parents did not receive the feedback or the workshop. These parents received access to the workshop and feedback at the conclusion of the treatment phase.

CHAPTER 3

METHODOLOGY

The focus of this chapter is to describe the methods used in conducting this research study. Specifically, this chapter provides information on subject recruitment, participation, research design, training, and the data collection procedures. The primary research question examines the effects of providing parents with progress monitoring feedback on young children's vocabulary development and pre-literacy skills. A secondary research question examines what effects the aforementioned performance feedback has on the frequency of parenting practices that previous research shows lead to language and literacy development. The third component of this study examines the effects participation in a progress- monitoring program has on young children's school readiness.

Design

The study utilized a between groups pretest / posttest design with three groups: (a) parent training with feedback, (b) parent training without feedback, and (c) a no intervention waitlist group. Participants were randomly assigned to groups which were arranged in the following manner. Group 1 served as the treatment group. Group 2, the inert comparison treatment group, and Group 3 was designated as a waitlist control group. Treatment effects were examined through group comparison. Parents in the treatment group received a workshop on parenting practices that promote vocabulary and pre-literacy development as well as bi-weekly, individual feedback on their children's performance on the progress monitoring measures administered. Comparison group parents received the workshop only. Their children's progress was monitored throughout the data collection phase; however, parents received the performance feedback information only at the conclusion of the data collection phase. Waitlist parents acted as a no treatment control

group and were not given the workshop or performance feedback information until the conclusion of the study.

Independent Variables

The primary independent variable is a parent support program with two components where varied amounts of support were given to each parenting group. The first component of the intervention was a school readiness workshop which was given to parents to teach them about activities they can do in the home believed to promote children's vocabulary development and pre-literacy skill development. During the second component of the intervention, each treatment group parent received information by way of bi-weekly reports concerning their child's performance on the selected progress monitoring.

Dependent Variables

The primary dependent variables for child outcomes were the difference scores from the pretest and posttest administrations of the AGS -ESP and PPVT-III. A secondary variable was the children's rate of growth on the selected progress monitoring measures the Dynamic Indicators of Basic Early Literacy Skill [DIBELS], Letter Naming Fluency [LNF] (Marston & Magnusson, 1988) subtest, which is predictive of future reading success; and the Individual Growth and Development Indicator [IGDI] Picture Naming [PN] (Early Childhood Research Institute, 1998) subtest, which is an indicator for vocabulary development (Kaminski & Good, 1998). Parenting engagement in practices that are believed to lead to vocabulary and pre-literacy skill development were assessed by means of collected self reports from telephone surveys, conducted over three phases during the study. A frequency count of parent engagement was taken during weeks one, seven and fourteen of progress monitoring.

Participants and Setting

Fifty-one parent-child dyads from one southern New Jersey community were successfully recruited for the study. The dyads contained one parent or guardian and one pre-school aged child in the months prior to his or her kindergarten entry. Participating children were those from families living in school districts eligible for New Jersey Abbott pre-school funding and whose scores placed them at or below the 3rd screening index (<30% percentile) on the AGS-ESP. The Abbott pre-school program began as a court mandated supplemental education program in which children living in New Jersey cities with the lowest socioeconomic status and assigned to the lowest categories on the New Jersey Department of Education's District Factor Groups scale were granted free pre-school at the ages of 3 and 4 (Retrieved October 31, 2009 from www.state.nj.us/njded/).

An initial letter describing the study was presented to the director of each facility. Flyers were then posted in common areas in the participating childcare facilities requesting volunteers for the study. A recruitment letter was sent home with each child to inform each parent that participation was voluntary (Appendix A). This notice also informed parents that the study was not directly connected to the participating childcare centers. Eligible children of volunteer parents (n=70) were matched based on age and organized into groups of three. From within each group of three, each parent-child dyad was randomly assigned to one of three groups by the researcher using an online random assignment program. Matching on age was used to control for any income differences that may occur between volunteer families. In this particular community, the Abbott pre-school program was also used by some parents as a method of free childcare in the year prior to kindergarten entry. However, parents whose children were identified by early child find services were placed in the program at the age of 3 to provide an extra year of support. Thus it is assumed that children from lower income families were placed in the program at an earlier age than children from higher income families which may have lead to some variation in school readiness preparation.

Exclusionary Criterion

Children diagnosed with significant emotional or developmental disabilities were not included in the study. Also, parents and children who lacked basic written and spoken proficiency in the English language were excluded as well. This information was obtained through a review of student files and consulting with each center's parent liaison. To minimize reactivity, parents in the comparison group were given the workshop portion of the progress-monitoring program but were told they would be given the progress monitoring data at the conclusion of the data collection phase. Participants in the waitlist control group were informed that due to scheduling and space availability, they would receive both the workshop and the feedback portion of the study at the end of the data collection phase. The parents and guardians were asked to continue doing any activities that they had been engaged in prior to entrance in the study. Parents across all three groups were informed that participants were chosen randomly, that this was an experimental program not guaranteed to produce school readiness, and those outcomes would be reported at the group level, excluding any personal information. State demographic data was collected pertaining to median household income, family status, education enrollment data, and ethnic makeup in the chosen community. The most up to date information on median household income was obtained from city data reports for the year 2000 (Retrieved May 25, 2007 from <http://www.city-data.com>). Median household info for the city was \$26,923. This household income is less than half the median for the state of New Jersey that same year which was \$61,672. Also, 22.7% of the community's population lives below the poverty line which is set at \$22,050 (Retrieved October 27, 2009 from <http://www.atdn.org/access/poverty.html>). Average income for study participants was \$18,354 yearly. This information was retrieved from food program applications at each child care center. The civilian labor force of the community was examined and 38.8% reported being currently laid off or unemployed while 55.1% reported as not being a part of the labor force at all. The racial makeup of the community is as follows: 41.84% African-American, 38.88%

Caucasian and 24.49% Hispanic. The Hispanic population is largely comprised of Mexican immigrants and migrant farm workers. There is also a large semi-transient population resulting from the establishment of a minimum-security prison located on the south side of the city (Retrieved May 25, 2007 from <http://www.cityofbridgeton.com>). According to the 2000 census data, 32.4% of the city's registered households listed themselves as non-families. Single females ran 37.7% of the households with children and no husband present, while 3.35% of households were listed with grandparents as primary care givers (Retrieved May 25, 2007 from <http://www.census.gov>). The New Jersey Department of Education enrollment data for the school year 2005-2006 indicated that in the community, more than 51% of the public school children received free and reduced lunch (Retrieved May 25, 2007 from <http://www.bridgeton.k12.nj.us>).

Procedure

The study was conducted in the 14 weeks prior to each child's kindergarten entry, which allowed for the collection of 7 data points and 7 feedback sessions from bi-weekly progress monitoring. For the present study, pre-testing also served as an initial screening process during which the children were administered the AGS-ESP and the PPVT-III. Those children who scored at or below the 30th percentile on the AGS-ESP were included in the study. Initial progress monitoring data was then collected for the progress monitoring measures the following week. All testing took place at the childcare facility; subsequently, 16 children who missed more than two progress-monitoring sessions were removed from the study, as were one child who missed post-testing and two treatment group parents who did not attend the workshop. Subject attrition was 13.3% for the study; as a result, a total of 51 subjects were included in data analysis.

During the data collection phase, all children in the study were progress monitored on the first two working days of the week. On the third working day, the researcher and research assistants contacted each parent by phone to provide them with information about how their child scored on the progress monitoring assessments. This call was repeated until the participating

parent was reached. Parents were able to ask questions, and were also invited to call the researcher at the child facility if they had any concerns or questions about the procedures. During each report session, a scripted phone message was delivered that informed parents of the number of letters and pictures their child named during the session for that week (See Appendix B for sample script). This process, potentially, afforded parents enough time between progress monitoring sessions to make desired adjustments to parenting practices. Parents were contacted even if their child was absent during that week's progress monitoring testing and the score from the previous session that the child did attend was repeated. Post-testing took place the week after the final progress monitoring session.

At the completion of the data collection phase, each of the parents in the comparison group were given a graph created by the data collectors showing their child's performance on the progress monitoring measures over the course of the study. These parents also received information on practices they could incorporate into their daily routine to help their children to improve in specific skill areas. Parents in the waitlist control group were given the opportunity to receive both the workshop and the progress monitoring information at the conclusion of the study. Throughout the study, all parents were contacted by phone to assess the frequency of participation in certain desirable parenting practices that were related to vocabulary and pre-literacy development. This process involved three different contact phases conducted on week one, week seven, and week fourteen. Parents across each group were randomly assigned to survey groups using an online random assignment generator.

Materials

Several materials were utilized during this study to promote proper implementation of workshop and assessment materials. Different materials were produced for use by data collectors and parents. Data collectors received study information packets to assist them in communicating with parents and properly evaluating child outcomes. Parents received packets with activities and

practices that they could utilize in the home that may promote vocabulary and pre-literacy development.

Data Collector Materials

Data collectors received a training kit containing all materials needed to collect information at their initial training session. These kits consisted of a training manual with information on how to administer each assessment, scoring forms for each assessment, a stop watch, stimulus cards for the IGDI's picture naming subtest, Letter sheets for the DIBELS letter naming subtest, a script for feedback phone calls, script for parent surveys, and stickers to give as rewards for students.

Parent Materials

Build your own coloring books and alphabet sheets were distributed to all parents who participated in the study. Parents in groups 1 and 2 received a workshop handbook that provided them with the information taught during the workshop. Treatment group parents were instructed to utilize prepared graphs located in the back of the handbook (line graph printed in color landscape on plain white 8 ½ by 11 paper;) on which they were to chart their child's progress on Letter Naming Fluency (LNF) and Picture Naming (PN)PN. Also, a lending library with vocabulary and picture books was set up in each facility at the completion of the study. Before the parent training session began, students in a graduate school psychology program with knowledge of early literacy skills instruction and assessment assisted in constructing the training materials and checked them for age appropriateness and clarity of teaching procedures and activities. Furthermore, the principal investigator reviewed and practiced the techniques, as part of a graduate research group. These reviews provided the researcher feedback and suggestions that were applied in the final training sessions.

Data Collector Training

Data collectors were the principal investigator and two graduate students enrolled in a masters-level school psychology program. The data collectors had familiarity with the chosen measures, but the researcher also held a formal training of the administration and scoring of the four measures. The AGS-ESP, IGDIs (PLNF), PPVT-III, and DIBELS (LNF) were presented in one training session considering the students had received prior instruction in assessment procedures. During the training, the collectors were given information on the process of administration and scoring and were given an administration and scoring manual. Using triads including the principal researcher, one person administered the measure to a second individual, while the third person watched the administration and scored the items along with the administrator. The administering data collector and the observer compared scores at the end of each administration. Each data collector administered and scored a minimum of three probes of each measure, and met the criteria of scoring on three administrations of each test with 95% inter-observer agreement prior to collecting data for the study. Data collectors were also instructed to be cognizant of any dialectical differences that were found amongst the varied participants during verbal administration of the testing measures.

Inter-scorer Agreement

Inter-scorer reliability was assessed on 20% of all of assessment probes administered by each individual data collector. An independent scorer scored the probes and the primary data collector scored the discrepancies. Accuracy for the selected probes was at or above 90%, which aided in maintaining proper scoring adequacy. Using Cohen's Kappa, inter-scorer reliability was found to be 94% for LNF probes (n=71), 95% for PN (n=71) and 90% for the general outcome measures (n=40).

Parent Training Procedures

Parent volunteers in the study participated in a one and a half hour workshop focused on pre-literacy skills and vocabulary development, intended to address their lack of formal training in educational procedures. The workshop was divided into three sessions and provided parents with a basic overview of the importance of school readiness. It highlighted several activities that parents could use to promote vocabulary and pre-literacy development in the home. The workshop made use of several skills found in the Pearson Early Learning Dialogic Reading Program, *Read Together Talk Together* (2002). The workshop also provided parents with an overview of progress monitoring. Each parent that attended received a handbook describing the procedure and a description of the score analysis and graphing techniques for each measure utilized.

Prior to the progress-monitoring phase, there were four workshop dates scheduled to accommodate participating parents. These workshops were delivered during the evening, in a centralized location, in the week prior to the initial progress-monitoring phase. In addition, two parents received individual training in their respective homes, as they were unable to attend the group workshop. The workshops were set up as family fun nights where food and childcare was provided. Following an interactive ice breaker (Bingo for Books), the first half-hour of each workshop focused on teaching parents about the background for the study and the importance of vocabulary development and pre-literacy skills in attaining school readiness. The second half-hour of the workshop introduced parents to progress monitoring and dialogic reading. The final half-hour allowed parents to practice activities and skills they obtained with each other and their children. At each workshop, participating parents were also given the opportunity to win one of three \$20 gift cards from a local business during a raffle held at the end of each half-hour session.

Dialogic Reading

The goal of dialogic reading is for the child to become the storyteller and for the adult to facilitate, expand, and respond to the child's verbalizations. Through scaffolding, adults encourage the child to engage in conversation more than he or she would naturally. As a result, the child's language skills are thought to develop at a higher rate (Zevenbergen & Whitehurst, 2003). Techniques that are described by the acronyms CROWD and PEER (See APPENDIX D for the strategies in each acronym) help adults to encourage discussion and interaction. These techniques are based on the idea that practice in using language, feedback regarding language, and appropriately facilitated adult-child interactions in the context of picture book reading will facilitate language development. PEER strategies reflect what adults should do when reading with their child and CROWD reflects the types of prompts that can be used to facilitate conversation.

Practice

To assure treatment fidelity during the workshop, participating parents were divided into pairs to practice both the dialogic reading tools and vocabulary skills they were taught. One parent acted as the "parent" and read the story while using the techniques. The other parent acted as the "child", and answered the questions incorrectly to give the "parent" an opportunity to go through all the -PEER- and CROWD procedures. This was done so that parents could practice and become comfortable with the procedures. The roles were then reversed so that each parent got an opportunity to practice teaching and corrective procedures. The researcher observed the role-play and provided feedback on the use of the techniques and corrective procedures. The children of participating parents were then brought in and parents were able to practice the newly acquired skills with their own children.

Outcome Measures

Prior to initiating treatment, pretest screening of general cognitive ability was conducted. General cognitive ability was assessed using the AGS-ESP. The PPVT-III was also given as a pretest measure. This version was employed due to its widespread use by child find agencies in the area surrounding the chosen community.

AGS Early Screening Profiles (AGS-ESP)

AGS Early Screening Profiles is a nationally normed battery for screening children ages 2 years 0 months through 6 years 11 months. It provides a low-cost method of testing large numbers of children to identify those with possible handicaps or other problems that may interfere with development (Harrison et al., 1990). The battery also identifies potentially gifted children. However, children identified as either handicapped or gifted by the early screening profile must be further evaluated through the use of comprehensive, diagnostic assessment instruments before decisions can be made about the need for specialized services (Harrison et al., 1990). The goal of the battery is to prevent the occurrence of future problems by allowing testers to identify children and intervene as soon as possible.

The AGS-ESP is designed to be used as the first step in providing early intervention and prevention services for at-risk children. The importance of providing early intervention services to at-risk pre-school children and their families has been recognized for many years . Early experiences are undoubtedly important for subsequent development. At-risk children often have a negative and spiraling effect on family and interpersonal dynamics. Early intervention services are also relatively inexpensive compared to the later costs of services for problems left unrecognized or untreated (Harrison et al., 1990). The complete battery consists of seven parts. Testing time for children ranges from 15-30 minutes depending on the age and development of the child. The battery incorporates a flexible ecological approach to early childhood screening

used to measure development in multiple domains including the Cognitive/ Language Profile, Motor Profile, and Self-Help/Social Profile that measure areas of development. The Articulation Survey, Home Survey, Health History Survey, and Behavior Survey are designed to complement the profiles by adding important information from additional resources (Harrison et al., 1990).

The components of the AGS-ESP early screening profiles assessment may be used independently or in any combination, according to the needs determined by the screening agency. For the interest of the current study, only the Cognitive/Language Profiles were utilized. The assessment process was not to be used for referral eligibility, but to determine the child's level of school readiness. The Cognitive/Language Profile consists of four subtests that are directly administered to the child in a total of 10 to 15 minutes. There are two cognitive subtests: Visual Discrimination, in which a child selects from several pictures, all those that duplicate the stimulus picture and Logical Relations, in which a child points to pictures that correspond logically to stimulus pictures and solves visual analogies. These tests measure non-verbal reasoning abilities. There are also two language subtests: Verbal Concepts, in which a child points to pictures of objects named or described by the examiner and names objects shown or described by the examiner, and Basic School Skills, a measure of pre-academic and beginning academic skills, in which the child answers questions about number and quantity concepts, and names and recognizes numbers, letters, and words. These subtests measure both receptive and expressive language abilities.

Test-Retest reliability for the measure falls between .78-.89 for immediate retesting in which profiles were re-administered from five to twenty-one days after initial testing, and .73-.83 for delayed test-retest reliability in which profiles were re-administered 22 to 75 days after initial testing. Delayed test-retest reliability coefficients are somewhat lower than those for immediate test-retest. This change is expected due to the longer interval between testing and the rapid and variable developmental changes of young children (Harrison et al., 1990). There have also been

multiple studies conducted to demonstrate the measures of construct and content validity on the basis of determining its ability to account for developmental changes, internal consistency, inter-correlations, concurrent correlations with other tests like the PPVT-R, and identification of special status students.

Peabody Picture Vocabulary Test III (PPVT-III)

The PPVT-III (PPVT-III Examiner's Manual, Dunn & Dunn, 1997) is a nationally norm-referenced test used for measuring the receptive vocabulary of children and adults, ages 2 years and 6 months to 90 years and above. The measure takes an average of 10 to 15 minutes to administer. The PPVT-III contains sample words that represent 20 content areas, such as actions and tools, and parts of speech, such as nouns and verbs. Its primary purpose is to measure the understanding of the spoken word in standard American English and assess vocabulary acquisition. The measure can also be used to assess the response to vocabulary instruction, screen for verbal development, and detect language impairments across age ranges. Reliability for this measure is high, as all forms are above .89. The internal consistency estimate is especially high with the coefficient at .94, alternate form reliability is at .89 and test-retest reliability is at .93. These indices show that this measure yields consistent, stable and uniform results over time. Correlations with the Expressive Vocabulary Test Second Edition [EVT-2] (Williams, 2007), Comprehensive Assessment of Spoken Language [CASL] (Carrow-Woolfolk, 1999), and The Clinical Evaluation of Language Fundamentals Fourth Edition [CELF-4] (Semel, Wiig, & Secord, 2003) range from .41 to .84. . The PPVT-III assesses vocabulary development in children over 2.5 years and across the adult life span, is untimed and takes approximately 12 minutes to administer to each child. The examiner shows the child a set of four line drawings and asks the child to point to the picture that best matches a stated vocabulary word. The examiner then reads standardized directions to the child and provides prompting on items. Good validity and reliability standards have been established for the PPVT-III. For children between the ages

of 4 - 6 years, internal consistency is .95 for both forms A and B. In addition, test-retest reliability is over .90 over a period of one month (Dunn & Dunn, 1997).

Progress Monitoring Measures

Dynamic Indicators of Basic Early Literacy Skills (DIBELS)

The DIBELS were developed by Kaminski and Good (1998) to serve as formative assessments that are a downward extension of curriculum based measurement. The DIBELS are a set of standardized, individually administered measures of early literacy development. They are designed to be short (one minute) fluency measures used to regularly monitor the development of pre-reading and early reading skills. DIBELS subtests are measures of early literacy skills and have been found to be predictive of later reading success (Kaminski & Good, 1998). Letter naming fluency provides a measure of risk, as it is very predictive of later reading success.

The measures were developed upon the essential early literacy domains discussed in both the National Reading Panel (2000) and National Research Council (1998) reports, to assess student development of phonological awareness, alphabetic understanding, and fluency. Each measure has been thoroughly researched and demonstrates usefulness as an indicator of early literacy development and predictor of later reading proficiency to aid in the early identification of students who are not progressing as expected. When used as recommended, the results can be used to evaluate individual student development, as well as provide grade-level feedback toward validated instructional objectives.

Letter Naming Fluency (LNF)

The recognition of written words can only develop when children gain insight that words are made of letters that map to speech sounds (Snow et al., 1998). DIBELS LNF can help in the development of this skill. It is a standardized, individually administered test that provides a measure of risk concerning pre-literacy development (Kaminski & Good, 1998). It also assesses a

child's accuracy in naming letters presented to them visually in printed format. Students are presented with a page of upper- and lower-case letters arranged in a random order and are asked to name as many letters as they can in one minute. Credit is given for each correctly identified letter within a 3-second hesitation period and correct responses are calculated at the end of the minute.

Letter naming fluency is generally administered in the fall, winter, and spring of kindergarten, and fall of first grade. LNF alternate form reliability coefficients for kindergarten and first grade are .89 (.86 – .92) and .86 (.80 – .87), respectively. LNF strongly predicts other measures of reading and later reading success with predictive validity coefficients of .69 to .72 for predicting Nonsense Word Fluency (NWF), .74 for predicting first grade CBM. The median criterion-related validity of LNF with the Woodcock-Johnson Psycho-educational Battery– Revised reading cluster standard score is .65 and .71 with first grade CBM (Good, Kaminski, Simmons & Kame'enui, 2001).

Individual Growth and Development Indicators (IGDIs)

Pre-school IGDIs are quick, efficient, and repeatable measures of correlates and components of developmental performance designed for use with children between the ages of 30-66 months of age. IGDIs sample child performance in each major developmental domain with special emphasis on assessment related to long-term developmental outcomes that are common across the early childhood years. IGDIs, like CBMs are general outcome measures for monitoring child development and achievement and for producing data that support an ongoing and comprehensive decision making or problem solving model of assessment and intervention (McConnell et. al., 2004). IGDI's can be seen as one part of a comprehensive early childhood education program. McConnell et al., (2000) notes that the measures are specifically designed to help teachers and parents monitor growth of individual children over time. The focus is intended

to identify children needing early intervention and to monitor the effects of such intervention, so that long-term outcomes can be improved.

Three IGDI's are commonly used as indicators of children's language and literacy development in pre-school and early elementary programs: Picture Naming, an assessment of expressive language development, Rhyming and Alliteration, which are both assessments of phonological analysis. These measures were developed by researchers from 1996-2001 at the University of Minnesota, under the auspices of the Early Childhood Research Institute on Measuring Growth and Development. For the proposed study, the picture naming subtest was chosen as a progress-monitoring tool to allow for continual assessment of the participating children's vocabulary development over the course of the study.

IGDI Picture Naming (PN)

Picture naming (PN) administration is completed by presenting children with color pictures (photo graphs or line drawings) of objects found in natural environments, including home, classroom, or community. The children are told to name pictures as quickly as possible. The number of pictures named correctly in one minute is the child's score. If the child does not respond to a given picture within three seconds, the examiner gives a prompt by saying "What's that" or "What is this?" and allows the child an additional two seconds to respond before moving to the next card. Items are selected from a set of approximately 120 picture cards. Examiners are instructed to use four standard sample cards to demonstrate the task and confirm the child understands and then administer a randomly selected set of 1 to 50 cards. According to Missall and McConnell (2004), research is being conducted exploring the possibility of a "standard" set of cards but at this time, each administration can be considered an alternate form or random sample of the 120 total cards. PN scores appear to be relatively stable over time; test- retest reliability across three weeks is .67. In regards to validity, the subtest is also positively correlated with the PPVT-III at (.56-.75.) For the purposes of this study, the DIBELS LNF subtest and

IGDIs PN subtest were always administered in conjunction with one another at each progress monitoring assessment point. These measures were used to assess the growth of the child participant's vocabulary overtime.

Parent Activity Survey

Each parent participant was contacted once at random during the data collection phase and asked to verbally complete a survey created by the principal investigator that summarized his or her parenting practices. The survey contained five questions that focused on activities introduced by the *Dialogic Reading strategies* that promote language and literacy development (Appendix B). Parents were asked the frequency of times they participated in vocabulary and pre-literacy skill activities with their child in a given week. In the absence of observation, frequency count can serve as an optimal measure of home activity (Nelson, 2005). Surveys were conducted during the first, seventh and fourteenth weeks of progress monitoring phase.

CHAPTER 4

RESULTS

This section includes the results for each research question, beginning with those related to the outcome measures (PPVT-III, AGS ESP), dependent measures on early literacy (e.g. PN, LNF), and survey results for parenting practices. To assess child outcomes on vocabulary growth and school readiness, an ANCOVA was conducted analyzing the difference scores of the dependent measures. To determine if the intervention had an effect on between-group variance as measured by DIBELS LNF and IGDI PN and assess rates of change over the course of the study, children's progress monitoring scores were tracked over the 14-week period and the average slope of each group was calculated. These slopes were compared relative to one another via a one-way ANOVA. Finally, to determine the degree of change in parenting practices leading to language and literacy development, a quantitative data (frequency count) was compiled from survey results completed by the participating parents. The results were calculated and the mean response of each group per question was compared.

Descriptive Statistics

Descriptive statistics for the pretest and dependent variables are presented for a combination of treatment, control, and waitlist control groups. The first research question for this study was posed in the following manner:

Hypothesis # 1

Pre-school age children whose parents are provided with progress monitoring feedback information will exhibit higher levels of school readiness evidenced by scores on a kindergarten readiness measure than children whose parents participate in the workshop alone, or parents who are on a waiting list.

An ANCOVA was performed on the two dependent variables (DV) AGS difference scores and PPVT difference scores. The independent variable (IV) was a 14-week progress-monitoring performance feedback program during which parents received a school-readiness workshop and performance feedback information from their child's bi-weekly progress monitoring assessments. The Statistical Package for the Social Sciences [SPSS] (SPSS Inc., 2001) ANCOVA was used for the analyses. There was a total N of 51. Results of the ANCOVA for AGS are listed in Table 2 while results for the PPVT-III are listed in Table 3.

Table 1

Analysis of Variance for Treatment Effects on AGS Difference Scores (AGS)

Source	df	F	MS	p
Intercept	1	.272	10.54	.604
PPVT PRE	1	.345	13.38	.560
Treatment	2	6.94	268.98	.002
Error	47		38.75	

Note. R Squared= .229 (Adjusted R Squared =.180)

Treatment did not produce a statistically significant effect on AGS difference scores after controlling for the effects of pretesting ($F(2, 47) = 6.94, p > .05$ observed power = .87). Examining group comparisons, all effect sizes and power analysis were obtained using effect size and power calculators. All effect size calculation for AGS yielded small effects. With comparisons listed respectively for groups they are as follows (1, 2) $d = .06$; (1, 3) $d = .15$; and (2, 3) $d = .19$. The data appears to show that there is very little difference in how each of the groups performed on the assessment.

Table 2

Analysis of Variance for Treatment Effects on Peabody Picture Vocabulary (PPVT-III)

Source	df	F	MS	p
Intercept	1	.334	11.16	.566
PPVT PRE	1	.175	5.85	.678
GRP	2	.030	.995	.971
error	47		33.44	

Note. R Squared=.006 (Adjusted R Squared =.058)

Treatment did produce a statistically significant effect on PPVT-III difference scores after controlling for the effects of pretesting $F(2, 47) = .030, p < .05$ observed power = .62. Examining group comparisons, effect sizes were again calculated using an online effect size calculator. With comparisons listed respectively they are as follows (Group 1, Group 2) $d = .18$ which equals a small effect. This means, at post-test, little difference was found between the two groups; however, for the comparison between the treatment and the waitlist group there was a large difference found (Group 1, Group 3) $d = 1.01$ a; and for (Group2, Group3) $d = .76$ a medium effect. In this case, it appears that the treatment and control groups performed similarly on the vocabulary measure. Both the treatment and control groups outperformed the waitlist control group with the greatest difference being between the outcomes for the treatment group and the waitlist control.

Results of the analysis on AGS pretest, posttest difference scores do not support this hypothesis. The data shows that group placement did not have a significant effect of child performance on the kindergarten readiness measure. This hypothesis is partially supported by the data concerning the vocabulary measure (PPVT-III); however, it was not supported at all concerning the school readiness measure (AGS). Data analysis found a significant effect for

group placement concerning the vocabulary measure. A comparison of group means reveals staggered difference scores for each group (i.e. group one averaged higher than group two and three, group two higher than group three) Post hoc *Tukey* analysis found a significant effect when comparing group 1 to group 3 $p = .004$. There was not, however, a significant effect for the comparison of group one to group two, or comparing group two to group three.

Hypothesis # 2

Pre-school aged children whose parents are provided with progress monitoring feedback information will exhibit higher rates of vocabulary and pre-literacy skill development, than children whose parents participate in the workshop alone or are waitlisted.

Children were given progress monitoring assessments bi-weekly throughout the course of the study. These assessments focused on specific skills that are linked to vocabulary and pre-literacy development (Kaminski & Good, 1998; McConnell et al., 2000). Data analysis included calculating the slope for each child and using SPSS ANOVA to compare means at the group level. Information on group outcomes on progress monitoring data for LNF ($F(2, 47) = 2.950, p > .05$) and PN ($F(2, 47) = 2.169, p > .05$) over the course of the study are listed in Table 4. As shown in the table, treatment did not appear to produce a significant result for LNF or PN.

Table 3

Analysis of Variance for Treatment Effects Picture Naming (PN) and Letter Naming Fluency (LNF)

Source	df	F	<i>MS</i>	<i>p</i>
LNF				
Between group	2	2.950	.563	.062
Within-group	48		.191	
Total	50			
PN				
Between group	2	2.169	.349	.125
Within-group	48		.161	
Total	50			

These results do not support the first hypothesis. Statistical analysis revealed that treatment did not have a significant effect on PN or LNF over the course of the study. Results varied weekly throughout the progress monitoring phase of the study.

Hypothesis #3

Parents of pre-school aged children, who are provided with progress monitoring feedback information, will engage more frequently in specific activities that promote vocabulary and pre-literacy development than those parents who participate in the workshop alone.

After being randomly assigned to treatment, control, or waitlist control, volunteer parents were again reassigned to one of three groups to complete a telephone survey about their participation in certain parenting practices that contribute to vocabulary and pre-literacy skills (Appendix B). The survey consisted of five questions related to storybook reading and activities

conducted in the context of reading a book. Parents were asked to report the frequency of participation in the given activity during the week in response to each question. Average responses to each question per group, per survey session were recorded. The mean survey results for each group (*trt grp x survey grp*) are presented in Table 5. All group means appear to show little variation across questions.

Table 4

Parenting Practices Survey Results M= present as survey session means

Group	*Group	Question 1	Question 2	Question 3	Question 4	Question 5
		Book	Question	Television	Letter Naming	Talk
1	1	3.20	1.00	2.60	3.60	2.60
	2	3.33	2.00	4.00	3.18	2.18
	3	3.62	1.88	4.75	3.60	2.26
Total M=		3.38	1.63	3.78	3.46	2.35
2	1	4.33	1.38	5.00	3.50	1.83
	2	3.67	1.67	5.00	3.42	1.75
	3	4.50	3.00	3.00	3.27	1.81
Total M=		4.17	2.02	4.33	3.40	1.59
3	1	4.00	1.50	2.33	5.00	0.40
	2	2.50	0.67	3.33	3.11	1.50
	3	2.50	3.00	4.33	3.01	1.58
Total M=		3.00	1.72	3.33	3.70	1.16

Parents reported reading stories to their children and watching educational television with them. However, they were less likely to report frequent teaching activities, such as asking their children questions about a story they read to them by linking the story to their daily lives. In addition, parent's responses indicated less frequency of teaching letters to their children, rather

than reading stories. A number of parents reported that they rarely talked to their children while eating a meal. According to these results, treatment did not produce a significant change in frequency count for questions asked about stories parents read to their children, letter naming practices, or talking during a meal. Treatment does appear to have produced a significant result for the amount of time parents spent watching educational television shows with their children.

The results indicate that the treatment group and the provision of performance feedback information did not have a significant effect on the frequency of most of the parenting practices over the course of the study. However, it did produce a significant change for one area which involved parents watching television shows with their children. This survey may not be a reliable tool due to the lack of standardization, thus it did not produce enough information to fully support this hypothesis.

CHAPTER 5

DISCUSSION

This discussion section examines the results of a study on providing parents with young children's performance feedback information as they relate to the following questions. First, does a progress monitoring performance feedback program have an effect on children's pre-literacy and vocabulary skills? Second, does a progress monitoring performance feedback program have an effect on parenting practices that influence vocabulary and pre-literacy development? Third, does a progress monitoring performance feedback program have an effect on children's school readiness? These questions will be addressed, along with implications for parents and educators, limitations of the current study, considerations for future research, review of results, and how they inform the questions/hypothesis, and the comparison of these results with previous related research.

Do pre-school aged children whose parents are provided with progress monitoring feedback information exhibit higher rates of vocabulary and pre-literacy skill development, than children whose parents participate in the workshop alone, or parents who are on a waiting list?

Two curriculum-based measures were used to answer this question, as well as a standardized vocabulary measure. Test one, LNF was taken from the DIBELS. Test two, PN, was taken from the IGDIs. The vocabulary assessment was the PPVT-III. Information from these assessments answered this question at the group level.

Treatment Outcomes

An ANOVA was used to determine outcomes of group placements on acquired skill development. Results were similar for the two progress monitoring variables. Group placement for both LNF and PN were not significant. However, ANCOVA analysis indicated that there was

a relationship between group placement and vocabulary knowledge. Comparison of group difference scores yielded significant results with medium and large effect sizes respectively. This finding reflects prior research indicating that when children first start to learn language it may be difficult to establish general outcome measures through progress monitoring due to the high variability of their skill acquisition (McConnell et. al, 2000).

Do parents of pre-school aged children, who are provided with progress monitoring feedback information, engage more frequently in specific activities that promote vocabulary and pre-literacy development than those parents who participate in the workshop alone?

Parenting practices were examined through a frequency count survey administered during three different survey periods. This survey was created by the researcher and included activities that families could do at home that were shown to promote incidental learning in pre-schoolers (Hart & Risley, 1995; Zevenbergen & Whitehurst, 2003). Activities focused on the areas of vocabulary development and pre-literacy development.

Treatment Outcomes

Comparison of group means revealed the effect of group placement and time of survey administration. Results indicated group difference on a per question basis. Results for questions one, two, four, and five did not find a significant change in frequency count of activities. However, results for question three, “How many times did you watch educational television with your child,” did appear to produce a significant change in frequency count. This outcome supports prior research where it was found that parents expressed positive views about their children watching educational television programs believing that they are effective teaching tools that require little added intervention (Rice et al., 1990). However, reliability of survey results for the current study may be called into question due to the nature of the survey and absence of data, such as observation that could improve its reliability (Hill & Kantaylieniére, 2005).

Do pre-school aged children, whose parents are provided with progress monitoring feedback information, exhibit higher levels of school readiness evidenced by scores on a kindergarten readiness measure than children whose parents participate in the workshop alone?

This question pertains to the effect of enrollment in the program or lack of enrollment on a child's readiness to enter school. All children were given the AGS-ESP as pretest and post-test measures. This measure was also used as a screener for enrollment into the study. Only children who scored at or below the 30th percentile were included as subjects. Due to starting at such a low level, difference scores were then calculated and analyzed to compare group means with the vocabulary measure co-varied out to control for possible group differences on this construct.

Treatment Outcomes

ANCOVA analysis revealed that treatment did not have a significant effect on AGS pretest / posttest difference scores. All effect sizes for this measure were small and post hoc group comparison also found no significant differences between groups. It is assumed that the duration of the study did not allow for enough time for treatment to cause an effect on the cognitive measure.

This question examined effects of the varying levels of treatment utilized in the study. Parents assigned to the three groups received three phases of the same treatment. Group One received the highest level of treatment by being administered the workshop and feedback information. Group Two received the next level of treatment by only receiving the workshop and the progress monitoring.

Treatment Outcomes

ANCOVA analysis for pretest and posttest difference scores found a significant difference between groups for the vocabulary measure (PPVT-III) but not the cognitive measure (AGS ESP). Post hoc assessment found a significant difference between groups 1 and 3, but did

not find a significant difference between groups 1 and 2, or groups 2 and 3 on the PPVT-III. Also, ANOVA performed on group slope information found no significant differences between groups on the specific skills of PN or LNF. Finally, the data analysis for parenting practices resulted in no significant differences for groups on four out of the five questions. Differences found for question three were significant when comparing group 1 to group 3 but not significant when comparing group 1 to 2 or group 2 to 3. The results of this study indicate that providing performance feedback information does have a significant effect on parenting practices that influence language and pre-literacy development where vocabulary is concerned. This effect appears to be independent of competing factors such as a school-readiness workshop. 1 mean score decreased from pretest to posttest. Waitlist control revealed post-test means were higher than treatment and control group (See Table 1).

This study was a variation of previously conducted studies done by Fuchs and Stecker (2000), Hagermoser-Sanetti et al., (2007), and Coddington et al., (2005). A major difference between those studies and this one was their use of teaching or behavioral professionals, rather than parents as subjects. This study also provided a variation on the work conducted by Schunk (2003). The difference between that study and the current is the focus on academic outcomes rather than behavioral. In terms of performance feedback, this study supports previous research in regards to the method being successful as a behavioral change agent. The present study extends prior research by demonstrating that when parents in at-risk communities are given feedback information on their child's performance for specific literacy and vocabulary skills, there are significant outcomes for vocabulary development.

Future research might focus and follow-up on specified performance feedback provision in at-risk communities throughout the entire year prior to kindergarten entry. This will allow for an extended period of observation and possibly control for issues such as maturation and increased attrition rates occurring during summer and holiday periods. Also, another area in

which to extend the research may focus on parent delivered progress monitoring. This extension of the research will focus on providing them with training in this area and assessing outcomes.

Limitations

Although there were some positive results in this study, a series of limitations warrant attention when interpreting the results. Several issues limit the interpretation and generalization of the results, including differences between individual groups of children and the time of year that this study was conducted. One possible limitation is that parents were asked to volunteer for the study, so it is likely that volunteer parents were already motivated or influenced to promote school readiness in their children. This may affect the external validity of the study, which may also call into question whether these results can be generalized to a broader range of parents with different levels of motivation for teaching their children.

The primary setting for the study was a rural, at-risk area in which all of the child participants attended similar day care settings. This might also affect the study's generalizability to other settings, such as larger urban centers. Follow-up studies might investigate the effectiveness of such a project in different settings with more varied populations.

Another potential limitation is the lack of post-study follow-up on parents reporting if they continued to engage in literacy and vocabulary building activities with their children. This would indicate whether this project had a broader effect of giving parents the knowledge and confidence to continue teaching their children early literacy skills. Additionally, follow-up on the student's continued skill growth would provide evidence on the maintenance and generalization of these skills over time, including their effects on future vocabulary and literacy development.

Another issue may be the lack of one-on-one correspondence by the primary researcher. Due to the number of participants, it was difficult for the researcher to specifically contact each parent individually, so research assistants were used to report information. A limitation of not

only this study, but the literature base on the effects of performance feedback, is the lack of understanding of which feedback component has the most profound effect on behavior. An analysis of the type of feedback parents' preferred was not under direct investigation during this study but will be an important consideration for future research. A final limitation is a lack of experimental control over participant home life and social factors. This may be a possible cause for the variability in student academic performance and decrease in initial sample size.

Implications for Educational Professionals

An important implication of this study is that performance feedback information can lead to changes in parenting practices that influence vocabulary. Such findings are valuable since vocabulary is a key factor in children's academic development. This study supports the increasing emphasis on early literacy interventions and the recognition that vocabulary instruction needs to be a part of developmentally appropriate practice in the home. This study was conducted in a relatively rural setting during the summer months, which posed some logistical challenges to daily data collection and monitoring over time. Given that many school psychologists will encounter issues with students who fall in the at-risk category, it is important to discover strategies which are effective, yet feasible to engage parents in their children's educational development. Development of easy-to-implement school and home programs for vocabulary development could be a key step in promoting early intervention and parental involvement in children's education.

The present study included a relatively simple feedback program, which could be implemented easily in childcare centers and pre-schools throughout the course of the year. As schools begin to focus on early intervention for factors that place students at risk, they will require programs that are efficient and cost-effective and do not require a long, expensive training period for classroom staff, but can strengthen the home-school connection. In this study, parents

were given information about their children's performance on specific skill-based assessments and given the opportunity to adjust parenting practices accordingly. This may also be of interest to educators who have limited funding but would like to maximize pre-literacy development by specifying things parents should focus on in the home prior to formal school entry and after.

Implications for Parents

This study reinforces the fact that parents play a vital role in children's school readiness and later academic success. Research has indicated that parent-school involvement decreases as children become older (Epstein, 1986). Therefore, it seems important that parents are encouraged to become involved in their children's education as early as possible. In this study, the majority of parents were not aware of the effects of their involvement prior to receiving feedback. In addition, this study demonstrates the effectiveness of making parents aware of their children's progress. Previous research has shown that these techniques are effective in the classroom with teachers (e.g., Fuchs & Stecker, 2000; Cossart et al., 1973). Therefore, there are positive implications for providing performance feedback information to parents of pre-school aged children and the involvement of parents in the pre-literacy/vocabulary development process. This study also supports the effectiveness of cost-effective, easy-to-implement programs for teaching vocabulary and pre-literacy skills. There is a need for research based, intensive vocabulary interventions for young children at risk of experiencing reading difficulties (Hwa-Froelich, Kasambira, & Moleski, 2007).

Future Research

Recent research has highlighted the importance of feedback and its effectiveness. The present study was conducted to expand the previous examinations of performance feedback with teaching professionals and/or behavior specialists by focusing on performance feedback delivered to parents. An extension of the results obtained by Noel et al., (1999), Hagermoser-Sanetti et al.,

(2007), and Mortenson and Witt (1998) showed different levels of performance feedback to be effective. The significance of this, from a practical standpoint, is that it would be important to know the extent to which type and schedule of performance feedback is effective for improving parenting practice and its impact on student academic performance. In addition, the present study sought to extend the performance feedback literature from school settings to the home.

An area for future research may focus on possible within-group differences for subjects. This study attempted to stabilize between-group factors by matching students from similar SES groups by age. Previous research has found that SES is a proxy for vocabulary development (Hart & Risley, 1995); however, the present study did not produce conclusive results, which might be attributable to small sample size and random score fluctuation. Therefore, future research might concentrate on assessing performance feedback and vocabulary effects with larger samples. The treatment in this study also did not produce significant effects on the cognitive screening measure. Future research might concentrate on specific teaching of isolated literacy skills. Finally, this study did not examine treatment acceptability in relation to parent perceptions of the workshop and progress monitoring program as a whole. Future studies may include research on the social validity of this process. Such research would inform ongoing efforts to promote home-school collaboration by giving teachers the ability to measure the extent to which parents are willing to be involved in the school preparation process.

Conclusion

This study implemented progress monitoring performance feedback bi-weekly for approximately 14 weeks. Whereas other studies, utilized daily (Noell et al., 1997) or weekly (Mortenson & Witt, 1998) performance feedback, I provided feedback every other week. Important to note is that performance feedback was provided directly during the same week that assessment occurred. This study provided feedback for 14 weeks to allow for an appropriate

amount of progress monitoring to take place during the summer months before kindergarten entry. This method of providing information to parents bi-weekly is in accordance with typical progress monitoring schedules used in formal schooling.

There has been growing interest in the role of parents developing school readiness, vocabulary and pre-literacy development. This research has primarily focused on parent-child reading activities (e.g., Hindman, Connor, Jewkes, & Morrison, 2007; Kotaman, 2008) demonstrating effects on frequency of parent-child reading interactions, types of reading interactions, and effects of home environments on school readiness and risk factors. The research also focused on incidental practices that can lead to school readiness (Rice et al., 1990; Roberts et al., 1999), such as watching educational television programs and practicing skills that build vocabulary. There have been many studies examining the effects of performance feedback (e.g., Hagermoser-Sanetti et al., 2007; Reedy et al., 2001). These studies have found that this method can be effective as a behavior change agent (Cossart et al., 1973; Mesa et al., 2005) and can be useful in encouraging treatment utility (DiGennaro, Martens, & Kleinmann, 2007).

Although there is considerable research in the areas of pre-literacy development, vocabulary development and performance feedback, there are a number of limitations in the current literature base. One of these limitations is the lack of research linking these three constructs and examining the effects of presenting performance feedback information to parents to encourage a change in parenting practices that lead to educational outcomes for their children. A substantial amount of performance feedback literature highlights classroom interventions, behavior management, and treatment utility. In the studies where feedback with parents is examined, the focus still remains on the construct as a behavior change agent for parents with children exhibiting aversive behaviors (Schunk, 2003; Stokes & Luiselli, 2005). Very little is found on the impact of parent-based feedback effects for academic outcomes.

Limitations on the impact of parent's involvement in pre-literacy and vocabulary development are also evident in parent based studies. Specifically, the majority of studies focused on overall parent-child reading, rather than the direct impact of parents influencing specific skills that lead to vocabulary and pre-literacy development. This study incorporates components of dialogic reading to teach these skills to young children (Whitehurst et al., 1988; Zevenberger & Whitehurst, 2003). By using these techniques, specific skills such as letter-sound knowledge can be taught directly and the use of expressive vocabulary can be expanded upon. These things can be done in keeping with the recommendations of the National Reading Panel (NRP, 2000). This study attempts to address this limitation by enrolling parents and their pre-school aged children in a literacy-based progress monitoring feedback program. Furthermore, this study also focuses on how these constructs effect school readiness.

The present study contributes further information on the effects of performance feedback information. In particular, it adds to the existing literature on progress monitoring, formative assessment, and school readiness. Furthermore, the study also supports the effectiveness of providing parents with performance feedback information from young children's progress monitoring data. Ideally, future work would focus on expanding parent responsibility to promote greater involvement in the formative assessment process and would include more in-depth information on parents as teachers. Because the intervention did not uniformly produce marked increases in student academic performance, the efficacy of it as a topic should be considered for further scrutiny and evaluation. These findings should be regarded as preliminary because of important methodological considerations. Assessments of very young children are fraught with reliability and validity problems. Children change so rapidly and are highly susceptible to testing conditions (Boethel et al., 2004). Although the IGDI's have been identified as an early childhood vocabulary measure, more investigation is needed to increase their reliability before they can be used independently.

APPENDIX A
INFORMED CONSENT

Dear Parent/Guardian,

You and your child have been asked to participate in a research study that I am conducting on the effects of progress monitoring performance feedback on the vocabulary development, pre-literacy skills, and school readiness of preschool-age children. The information collected will be used for my dissertation in the area of School Psychology at the University of Massachusetts – Amherst. Both you and your child are asked to participate in a 14-week progress-monitoring program during which he or she will be tested bi-weekly and information will be collected on their progress. The study will be conducted in the months before your child’s entry into kindergarten and may assist in preparing them for school.

- Your child will be asked to perform several tasks including naming pictures of things (such as a “horse” and “chair”), naming letters, and producing the individual sounds of the letters that make up a word. The assessment will be in a one-on-one setting the initial and final assessments will take place at your child’s child care facility and will take 30 minutes or less. The progress monitoring sessions will take no more than 3 minutes and will be conducted every two weeks in your child’s childcare facility.
- Privacy will be protected by transforming student and parent names into numbers. All data will be used in the aggregate (at the group level) only.
- There are no known risks involved in having a student participant in the chosen assessments. However, if a student becomes tired or finds the activity challenging they are free to stop the assessment at anytime. Your child will be told this before the assessment begins. Risks associated with parent participation may include potential anxiety experienced due to their child’s performance. Also children involved may miss out on class time during the assessment periods.
- The principal researcher will be available to consult with and counsel parents as well as provide referrals due to concerns.
- The potential benefit to this study would be that you and your child would be contributing to research in the areas of vocabulary development, school readiness, and progress monitoring. I am hopeful that this research will ultimately benefit young children by giving parents a greater role in vocabulary development, an important component to later reading success.
- Participation in this study is Voluntary. Your child’s childcare facility is in no way connected to this study and should you refuse to participate your relationship will not be affected with the organization.
- Parents will be assigned to one of three groups by using random assignment. The groups will participate in varying activities as follows.

Group 1: Parents will participate in a 1 hr workshop on school readiness and will receive information on how their child performed on the progress monitoring measures using the communication method of their choosing.

Group 2: Parents will only participate in the 1 hr workshop. Parents will receive information on how their child performed on the progress monitoring measures at the end of the study.

Group 3: Parents will receive the workshop and information on their child's performance on the progress monitoring measures at the conclusion of the study.

Information on parenting practices that lead to vocabulary and pre-literacy skills will be collected from a random sample of parents across all three groups. The researcher will select several parents at random during various points in the study and inquire about activities they engage in with their child.

- *If you consent to you and your child's participation*, please return this slip at your earliest convenience to your child's childcare facility.
- *If you'd prefer to NOT have your child participate*, you do so without prejudice. You do not need to return this form

If you have any questions or concerns please contact: Amanda A. Nnchetam, Graduate Student Investigator by email: amandan@educ.umass.edu by phone: 856-696-1592 or Gary Stoner, Committee Chair by email gstoner@educ.umass.edu

Thank you very much for your cooperation,

Amanda A. Nnchetam

Dr. Gary Stoner, Ph.D.

I, _____ *agree that my child,* _____ *and I will*
Parent/Guardian Name Child's Name

participate in this research study.

If you do not return this consent form, your child will not be included in this study.

APPENDIX B
PARENT RESPONSE SURVEY QUESTIONS

PARENT ACTIVITY SURVEY

FREQUENCY COUNT OF PARENTING PRACTICES

HELLO MR/MRS._____. MY NAME IS _____. I AM CONTACTING YOU BECAUSE YOU AND YOUR CHILD ARE PARTICIPATING IN A SUMMER LEARNING STUDY.

PLEASE REPORT THE NUMBER OF TIMES YOU ENGAGED IN EACH ACTIVITY WITH YOUR CHILD THIS WEEK

SURVEY GRP # _____ WEEK # _____

Question

Frequency Count

Read A Book	
Ask Questions About Book While Reading	
Watch Educational Television	
Practice Alphabet Naming	
Talk While Eating A Meal	

Hart, B. & Risley, T. R., (1995); Zevenbergen, A. A., & Whitehurst, G. J., (2003); Hill, C., Kantaylieniene, Y. (2005).

APPENDIX C

PERFORMANCE FEEDBACK SCRIPTS

PERFORMANCE FEEDBACK BI-WEEKLY REPORT:

You will be contacted every two weeks by either the project director or her assistants.

Information will be provided on the number of letters and pictures your child named that week.

The report will go as follows:

HELLO MR/MRS. _____. MY NAME IS _____. I AM
CONTACTING YOU BECAUSE YOU AND YOUR CHILD ARE PARTICIPATING IN A
SUMMER LEARNING STUDY.

1. On the IGDI's Picture Naming Measure, when asked to produce the names several pictures of objects in one minute, your child received a score of _____. This means that you should place a mark on your graph in the space that represents this number. You can then connect the line from mark from the last report to the new mark.
2. On the DIBELS Letter Naming Fluency Measure, when asked to name as many letters as he or she could in one minute, your child received a score of _____. This means you should place a mark on your letter-naming graph in the space that represents this number. You can then connect the line from the mark from the last report to the new mark.

Nelson, 2005; Hagermoser et al., 2007; Mortenson, B.P., & Witt, J.C., 1998.

APPENDIX D

DESCRIPTION OF “PEER” AND “CROWD” TECHNIQUES

Dialogic Reading Components

PEER

Prompts the child to say something about the book,

Evaluates the child's response,

Expands the child's response by rephrasing and adding information to it, and

Repeats the prompt to make sure the child has learned from the expansion.

The parent says, "What is this?" (the prompt) while pointing to the picture. The child says, *a dog*, and the parent follows with "That's right (the evaluation); it's a black dog (the expansion); can you say *black dog*?" (the repetition).

*Five types of prompts that are used in dialogic reading to begin PEER sequences.

CROWD

Completion prompts

"I think I'd be a glossy cat. A little plump but not too _____," letting the child fill in the blank with the word *fat*.

Recall prompts

"Can you tell me what happened to the little blue engine in this story?"

Open-ended prompts

"Tell me what's happening in this picture." Open-ended prompts help children increase their expressive fluency and attend to detail.

Wh- prompts

"What's the name of this?" while pointing to an object in the book. Wh- questions teach children new vocabulary.

Distancing prompts

"Remember when we went to the animal park last week. Which of these animals did we see there?" Distancing prompts help children form a bridge between books and the real world, as well as helping with verbal fluency, conversational abilities, and narrative skills.

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