

# Dialogic Reading with Adolescent Mothers

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DIALOGIC READING WITH ADOLESCENT MOTHERS AND THEIR CHILDREN

by

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A thesis submitted in partial fulfillment of the requirements  
for the degree of Master of Science  
in the Department of Communication Sciences and Disorders  
at the University of Central Florida  
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HIM Thesis Chair: Dr. Jacqueline Towson

## **Abstract**

The purpose of this study was to evaluate the effectiveness of teaching dialogic reading (DR) strategies to adolescent mothers as measured by DR strategy use during shared book reading with their children. The secondary purpose was to determine the impact of adolescent mothers' implementation of DR strategies on their preschool children's single word vocabulary. A single subject multiple baseline across behaviors research design was implemented with one adolescent mother and her twin boys. Based on visual analysis of graphical representation of the data, it was determined there was a moderate to strong functional relation between educating an adolescent mother on DR and her implementation of DR strategies during shared book reading, depending on the DR strategy. Receptive and expressive scores on the individual book assessments decreased from baseline to intervention. These results provide preliminary evidence that adolescent mothers have the potential to implement new strategies during shared book reading when provided with direct support. Future research with this population should strive towards developing an intervention for adolescent mothers and their children to enhance children's language and literacy development .

## **Dedication**

To adolescent mothers everywhere.

“She stood in the storm,  
And when the wind did not blow her way,  
She adjusted her sails.”

-Elizabeth Edwards

## Acknowledgments

I would like to express my deepest gratitude to all my mentors who have believed in me and encouraged me to always challenge myself. I would first and foremost like to thank Dr. Jacqueline Towson. Thank you for being an inspiration, an example, and a model. I strive to be half the intelligent, loving, and encouraging woman you are. Thank you for your expertise, guidance, and support throughout the development of this thesis. To Dr. Barbara Ehren and Dr. Matthew Taylor, thank you for sharing your knowledge and invaluable advice throughout this process.

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## **CHAPTER 1: INTRODUCTION**

In 2014, nearly 250,000 infants were born to teenage mothers ages 15 to 19 in the United States (Hamilton, Martin, Osterman, Curtin, & Matthews, 2015). Birth rates were highest for Hispanic adolescents ages 15 to 19, followed by black adolescents, and white adolescents (U.S. Department of Health and Human Services, 2014; Mollborn & Dennis, 2012). While rates of teenage births have been steadily declining (down 9% from 2013 and 52% from 1991; Hamilton et al., 2015), teenage pregnancy is an issue requiring attention due to the negative and lasting effects it has on teenage mothers and their children.

Effects of teenage pregnancy include impacts on mothers' academics and mental health, which may lead to compromised parenting skills, and ultimately deficits in child development (Lanzi, Bert, & Jacobs, 2009). Adolescent mothers are more likely than non-parenting peers to exhibit poor academic performance and drop-out of school (Klein, 2005). Early onset pregnancy is often accompanied by risks of high rates of depression, with adolescent mothers displaying higher rates than adult mothers and for a longer period of time (Lanzi et al., 2009). These depressive symptoms, often due to parental stress and a lack of social support (Huang, Costeines, Kaufman, & Ayala, 2014), compromise mothers' parenting behaviors, including maternal sensitivity and amount of time spent talking to their babies (Lanzi et al., 2009). The combination of these symptoms lead to negative effects on children of adolescent mothers, including significantly lower birth weights (Fagan & Lee, 2013), disorganized infant attachment patterns (Madigan, Moran, & Pederson, 2006), delayed language development (Keown, Woodward, &

Field, 2001), difficulties in academics (Fagan & Lee, 2013), and an increased likelihood for teenage childbearing (Meade, Kershaw & Ickovics, 2008).

A search of the literature was conducted using the search terms: *teenage pregnancy* and *effects*; *teenage pregnancy* and *effects on children*; *home literacy environment* and *teenage parents*; *shared reading* and *teenage parents*; and *dialogic reading* in the EBSCOhost and Psycinfo databases, and Google Scholar. The search was restricted to including only peer reviewed articles. No date restrictions were used during the search. The search resulted in 77 articles that were used in the literature review. The review of the literature was conducted to explore the effects of early onset pregnancy, programs focused on providing early and preventative services to teenage mothers, and early literacy practices and their effects on literacy and language development of children. Researchers suggest educating teenage mothers on child development strategies can enhance their parenting strategies (citation) and dialogic reading (DR) is an effective strategy to develop preschool children's language and literacy development (cite). Yet, there are limited interventions developed to synthesize and put these findings into practice. The present study educated an adolescent mother on DR strategies and analyzed her children's learning of vocabulary to explore an intervention that may be beneficial for both mother and child.

### **Prevalence of Teenage Pregnancy**

The rate of births by teenage girls in the United States is the highest among the most developed countries (Planned Parenthood, 2014). The teenage pregnancy rate (which accounts for *all* pregnancies, including those that did not result in birth) in 2011 was 553,000 (The National Campaign, 2017). In 2010, 60% of teen pregnancies ended in a live birth, 15% ended in

a miscarriage, and 30% ended in an abortion (U.S. Department of Health and Human Services, 2014). Eighty-nine percent of these births occurred outside of marriage (U.S. Department of Health and Human Services, 2014), leaving parenting responsibilities to young single mothers, oftentimes with little to no support (Birkeland, Thompson, & Phares, 2005). Teenagers aged 18 to 19 exhibit a higher pregnancy rate (43.8 births per 1,000) than teenagers aged 15 to 17 (10.9 births per 1,000; Hamilton et al., 2015). Teen birth rates are greatest for Hispanic adolescents (i.e., 35 births per 1,000 Hispanic teens in 2015; The National Campaign, 2017).

Teenage pregnancy rates have been steadily declining due to increased usage of contraception and increased practice of abstinence among adolescents (Planned Parenthood, 2014). Among race and ethnic groups, teenage birth rates have steadily declined from 2013 to 2015, with an 18% decline in non-Hispanic blacks, a 16% decline in Hispanics, and a 14% decline in non-Hispanic whites (The National Campaign, 2017). Even with rates steadily declining, adolescent pregnancy is an issue for society at large due to the economic impact. In 2010, the public cost of teen childbearing totaled \$9.4 billion (The National Campaign, 2017), which is attributed to child welfare, criminal justice, and reduced earnings and spending on the part of adolescent mothers (National Conference of State Legislatures, 2014).

In 2013 to 2014, the birth rate for teenagers declined in 43 states and remained consistent in the remaining states. The state displaying the highest teenage birth rate was Arkansas in 2014, with 39.5 births per 1,000 adolescents (Hamilton et al., 2015). In Florida, there were almost 12,900 births to adolescents in 2014. Seventy-four percent of adolescent births in Florida were to older teenagers, ages 18 to 19 years. Of those 74%, 17% of those births were to adolescents who

already had at least one child. Teenage childbearing in Florida had a public cost of \$443 million in 2010 (The National Campaign, 2017).

### **Effects of Teenage Pregnancy**

#### **Effects on Academics**

Teenagers who become parents during their adolescent years are subject to multiple risk factors. The leading cause of school dropout among adolescent girls is indeed pregnancy or parenthood (Klein, 2005; Shuger, 2012; Strunk, 2008; Wiemann, Berenson, Wagner, & Landwehr, 1996), with only 40% of teenage mothers finishing high school, and less than 2% of teenage moms finishing college by age 30 (Shuger, 2012). Teenage mothers also exhibit below grade level scores on academic achievement measures, with success being much lower in reading than math (Rauch-Elnekave, 1994).

Although dropout and low academic attainment are prevalent among this group, adolescent mothers indicated a high rating of importance on education and job training (Turney et al., 2011). One factor that may contribute to the continuation of schooling, as explored by Kalil (2002), is the perception of the school psychological environment. The author found perceptions of being devalued by teachers were significant predictors of a decline in educational expectations of teenage mothers (Kalil, 2002), as well as lower maternal age, delayed grade placement, and higher levels of depressive symptoms (Way & Leadbeater, 1999). However, Way and Leadbeater (1999) reported most adolescent mothers graduated from high school and completed at least one year of college when they received social support, such as from a parenting program.

Rauch-Elnekave (1994) conducted a descriptive analysis on the academic achievements of adolescent mothers on a standardized exam and their self-esteem as reported through a survey. The author reported the majority (56%) of girls tested one or more years below average in Total Reading and Total Language on the California Achievement Test (CAT). However, performance on the mathematics portion was much higher, with only 36% scoring one or more years below grade level. Through individual interviews, the majority of girls described feeling either happy (14%) or ambivalent (38%) when they found out they were pregnant. Furthermore, evidence of impaired self-esteem was not present. These findings suggest teenage adolescents may accept parenting as a viable option when they receive positive regard from their social environment and have an opportunity to succeed as mothers, opportunities which are not viable in school (Rauch-Elnekave, 1994).

Low achievement of education may leave adolescent mothers at a disadvantage in the job market, therefore leading to financial hardships (Barnet, Arroyo, Devoe, & Duggan, 2004; Hoffman & Maynard, 2008). Eighty-three percent of parenting adolescents come from poor or low-income families (Klein, 2005) and 80% heavily rely on public assistance consistently longer than women who delay childbirth (Planned Parenthood, 2014). More children born to adolescent mothers live in poverty than children born to traditional families. Of children born to teenage mothers who did not graduate high school, 78% live in poverty, compared to 9% of children born to adult mothers who have graduated high school (The Annie E. Casey Foundation, 2006). Mothers living in poverty and with little education are less likely to provide the necessary resources, support, and care to their children (Lanzi et al., 2009).

## **Effects on Mental Health**

Mental health concerns are prevalent among the adolescent parent population. It has been widely documented depression rates in young mothers are much higher compared to rates in adult mothers and typical adolescents (Kalil, 2002; Lanzi et al., 2009; Shanok & Miller, 2005; Way & Leadbeater, 1999). Stressors connected to depression among teenage mothers are described as high levels of parenting stress, little to no social support, and weight concerns (Birkeland et al., 2005 Huang et al., 2014; Romo & Nadeem, 2007). Teenage mothers were also found to report higher symptoms of emotional distress when compared to adolescents who are not parents (Milan et al., 2004), but experience a sharp decline in symptoms after birth, perhaps due to feelings of excitement and joy. In a study designed to investigate the prevalence of other syndromes outside the scope of depression, Wiemann and colleagues (1996) found adolescent pregnancy is not associated with higher rates of other psychological syndromes. In fact, adolescent mothers showed less delinquent behaviors and attention problems than never-pregnant adolescents (Wiemann et al., 1996). Similarly, Shanok and Miller (2005) found a decrease in physical fights during pregnancy among adolescent mothers. These findings may be attributed to a sense of responsibility, maternal care, and instinct to protect the baby (Shanok & Miller, 2005; Wiemann et al., 1996). However, as depression rates increase, it was found mothers display less positive parenting practices, such as maternal warmth and sensitivity, contingent responsiveness, and general verbalness (Lanzi et al., 2009).

## **Effects on Children of Adolescent Mothers**

The lack of educational achievement, persistence of financial difficulties, and high rates of depression reported by adolescent mothers has an impact on parenting behaviors and

ultimately child development (Huang et al., 2014). High depression rates, low socioeconomic status (SES), low levels of resources, and higher rates of health complications (e.g., low birth weight) affect children's cognitive, language, and temperament development (Fagan & Lee, 2013; Keown et al., 2001; Lanzi et al., 2009; Luster, Bates, Fitzgerald, Vandenbelt, & Key, 2000; Madigan et al., 2006; Mollborn & Dennis, 2012; Oxford & Spieker, 2006; Strunk, 2008; Tamis-LeMonda, Bornstein, & Baumwell, 2001). Children of teenage mothers are at-risk of developing disorganized attachment patterns with their mothers as infants (Madigan et al., 2006; Mollborn & Dennis, 2012), perform less well on emerging literacy and math measures as two-year-olds compared to those born to adult parents (Fagan & Lee, 2013), and score lower on language performance measures as toddlers (Keown et al., 2001; Oxford & Spieker, 2006). Furthermore, children of teenage mothers are at risk for language delays as toddlers when compared to children born to adult mothers (Keown et al., 2001) and of being retained a grade in elementary school (Luster et al., 2000).

Keown and colleagues (2001) reported increased maternal intrusiveness (i.e., ill timed, restrictive, and directive maternal behavior) and lack of verbal stimulation and involvement accounted for the difference in early expressive and receptive language competence between children born to adolescents and children born to adult mothers. Expressive and receptive language delays in children of teenage mothers are also linked to low maternal ability and a poor quality linguistic home environment (Oxford & Spieker, 2006). In a study conducted to investigate the factors that lead to an achievement gap among children born to adolescent mothers, Luster and colleagues (2000) found the most successful children were those that experienced more supportive care and higher levels of parenting, were read to frequently, and

had mothers who progressed further in their schooling. It is apparent while mothers are heavily impacted by early onset pregnancy, the majority of adolescents feel a sense of maternal responsibility towards their baby, indicating they are not receiving the support and education necessary to offset the many effects their children are reportedly experiencing (Luster et al., 2000).

### **School-Based Programs for Adolescent Parents**

Many school-based health clinics and programs were evaluated for their effectiveness of improving outcomes for adolescent mothers and their babies (Sadler & Cowlin, 2003; Sadler et al., 2007; Seitz & Apfel, 1999; Strunk, 2008; Williams & Sadler, 2001). These programs may involve information on prenatal care, preparation for birth, maternal nutrition and hygiene, stress management, parenting skills, and child care services (Sadler & Cowlin, 2003; Williams & Sadler, 2001). Seitz and Apfel (1999) conducted a systematic literature review and reported the most effective programs for adolescent mothers take place in schools, utilize preventative approaches (instead of remediation), and deliver services early on in pregnancy. This combination of characteristics allows adolescent mothers to develop a support system in a safe environment while continuing their education and taking care of their baby. Effects of such programs include improved grades for students, continued school enrollment, less rapid subsequent childbearing, and lower incidence of low weight at birth (Sadler & Cowlin, 2003; Sadler et al., 2007; Williams & Sadler, 2001). Other effects of these preventative programs include less welfare dependence, increased positive parental interactions when compared to mothers not in a similar program, and higher GPAs when measured before and after enrollment (Sadler & Cowlin, 2003; Sadler et al., 2007; Williams & Sadler, 2001).

While school-based programs have been evaluated and shown to be effective for teenage mothers, there is limited substantial information on the effects on the children's development. Sadler and colleagues (2007) reported positive indicators of health and development in the teenage mothers' children, such as higher scores on the Behavioral Rating Scale and lower rates of accidents requiring visits to the emergency room than children who were not enrolled in the child care centers, but information is limited. There should be an additional focus on the child care aspects of these programs. It has been reported frequently that the preventative and early onset services benefit teenage mothers (Sadler & Cowlin, 2003, Sadler et al., 2007; Williams & Sadler, 2001), but additional evaluation should be conducted to understand the necessary components of successful parenting skills, education, and child care services for this at-risk population. Romo and Nadeem (2007) suggested educating teenage mothers on how caregiver behaviors can impact cognitive and language development in their children to encourage mothers to interact and play with their infants in new ways. More information is necessary to understand which skills, such as shared reading skills, can be learned and utilized by teenage mothers and what effects those interventions have on children.

### **Early Literacy and Its Influence on Academic Achievement of Children**

#### **Home Literacy Environment**

The interactions centered on literacy between parent and child may impact an infant's development. The home literacy environment (HLE) is the level and type of interaction between parent and child centered around literacy (Burgess, 2005). The HLE is measured by the number of children's books at home, the frequency of family members' shared book readings in a typical

week, the frequency of family members' storytelling, and the frequency of family members' song singing, television viewing time, and the age of the child at the onset of shared book reading (Burgess, 2005; Kim, Im, & Kwon, 2015). The HLE measured in infancy may predict vocabulary and decoding skills in the later preschool years (Kim et al., 2015; Schmitt, Simpson, & Friend, 2011). Wood (2002) reported children who were above average in reading received more frequent storybook reading and played word games in the home more often than children who were at or below average in reading. Limited shared reading experiences at home were also found to be related to lower scores on cognitive competence measures (Luster et al., 2000). The most effective practices during reading, as reported by Schmitt and colleagues (2011), included encouraging narration, asking questions, praising attempts at language, and allowing interruptions. One study investigated the relationship between the HLE and SES (van Steensel, 2006). While the author found children from low SES had a poorer HLE, it could not be concluded that low SES and minority families fail to support literacy development completely, as has been regularly assumed (Arnold & Doctoroff, 2003). For example, van Steensel (2006) found that while ethnic minority families were characterized as 'literacy impoverished', families often engaged their children in literacy-related activities.

Adolescent mothers have been found to provide poorer HLEs for their children when compared to adult mothers. In a study that compared the HLEs provided by teenage mothers and by adult mothers, it was reported teenage mothers had fewer children's books in the home, scored lower on measures of print exposure, had children who visited the library less and watched more television, and were less likely to play with magnetic letters with their children (Burgess, 2005). This study also reported teenage mothers scored lower on adult print exposure,

reported reading for pleasure less often, watched more television, and exhibited lower vocabulary scores (Burgess, 2005). The insufficient environment provided by many teenage mothers cannot be fully explained by a low income (van Steensel, 2006), but instead, by a combination of a lack of income, experience, and knowledge (Burgess, 2005).

### **Shared Reading Interventions**

Interventions focused on the literacy practices and reading behaviors teenage mothers use when interacting with their children must be developed (Scott, van Bysterveldt, & McNeill, 2016). There are several studies that attempt to understand and facilitate interactions between teenage parents and their children. Britto, Brooks-Gunn, and Griffin (2006) observed African American teenagers while they read to and completed a puzzle with their children. The researchers found the majority of adolescents were “story-readers” rather than “story-tellers”; that is, they did not talk much to their children during the book reading. In another study, Neuman and Gallagher (1994) coached teenage mothers on behaviors and strategies during literacy-related play activities. The researchers reported an increase in the labeling, scaffolding, and contingent responsivity used by teenage mothers, as well as a statistically significant increase in vocabulary measures in the children (Neuman & Gallagher, 1994).

In a study conducted by Scott and colleagues (2016), teenage mothers were coached on emergent literacy skills to be used when reading to their children, including teaching vocabulary, phonemic awareness, and print concepts. Participants demonstrated a statistically significant improvement before and after the intervention in the use of questioning, vocabulary, and book and print features. This study, along with Neuman and Gallagher’s (1994) study, suggests a

change in parent reading strategies is possible when taught by a clinician. However, the effect of these skills on the teenage mothers and their children have not been specifically explored.

### *Dialogic reading interventions*

Dialogic reading (DR) is an effective shared reading intervention reported to enhance preschool children's language (e.g., Arnold, Lonigan, Whitehurst, Epstein 1994; Lonigan & Whitehurst, 1998; Lonigan, Anthony, Bloomfield, Dyer, & Samwel, 1999; Valdez-Menchaca & Whitehurst, 1992; Whitehurst et al., 1994; Zevenbergen, Whitehurst, Zevenbergen, 2003). Developed by Whitehurst and colleagues (1988), DR leads to a shift in roles so the child is encouraged to become the storyteller through the prompting and responsivity of the adult. Dialogic reading consists of a specific set of behaviors which are abbreviated by the acronyms PEER and CROWD. The types of CROWD questions include *completion* prompts, *recall* questions, *open-ended* questions, *wh-* questions, and *distancing* questions. The role of the adult is to *prompt* the child with CROWD questions, *evaluate* the child's verbalizations, *expand* the child's verbalizations, and *repeat* the prompt to provide another opportunity for the child to respond (Zevenberg et al., 2003). These behaviors are adopted to enhance the sophistication of a child's descriptions of a story's characters, objects, and plot.

The effectiveness of this intervention has been evaluated across populations and contexts. Whitehurst and colleagues (1988) first reported an effect on expressive language ability with middle to upper-SES participants, which was quickly supported by further evaluation (Arnold et al., 1994). These effects were later seen with children from low-income families (Lonigan & Whitehurst, 1998; Lonigan et al., 1999; Valdez-Menchaca & Whitehurst, 1992; Whitehurst et al., 1994; Zevenbergen et al., 2003) and children with language delays (Whitehurst et al., 1994).

Children exposed to this intervention were also found to be more likely to use evaluative devices in their narratives (Zevenbergen et al., 2003), and exhibit a higher mean length of utterance, higher frequency of phrases, and a lower frequency of single words (Whitehurst et al., 1988).

A vast number of researchers have reported an increase of DR strategies present in shared book reading by adults when trained to use the strategies (Beschoner & Hutchison, 2016; Blom-Hoffman, O'Neil-Pirozzi, Volpe, Cutting, & Bissinger, 2007; Crain-Thoreson & Dale, 1999; Dale, Crain-Thoreson, Notari-Syverson, & Cole, 1996; Fleury & Schwartz, 2016; Hargrave & Sénéchal, 2000; Strouse, O'Doherty, & Troseth, 2013). In one study, researchers reported a significant difference in parents who were trained on dialogic reading strategies in their use of evaluation prompts and wh- questions compared to parents who were not trained on specific book reading strategies (Blom-Hoffman et al., 2007). However, there is limited report of low-income parents' responses to a DR training. Researchers who have included low-income families in their studies have neglected to track the fidelity of the use of DR strategies when parents are trained to use them (Lonigan et al., 1999; Lonigan, Purpura, Wilson, Walker, & Clancy-Menchetti, 2013; Reese, Levya, Sparks, Grolnick, 2010; Valdez-Menchaca & Whitehurst, 1992; Whitehurst et al., 1994; Zevenbergen et al., 2003). The extent of compliance to the intervention has been tracked through parent interviews after intervention (Huebner, 2000), reading logs filled out by parents during the intervention (Lonigan & Whitehurst, 1998; Towson & Gallagher, 2014), and parent surveys (Hargrave & Sénéchal, 2000; Whitehurst et al., 1994).

Reports of parent satisfaction and understanding of the dialogic reading program were often included in studies investigating the effectiveness of DR (Huebner, 2000; Niklas, Cohrssen, & Tayler, 2016; Tsybina & Eriks-Brophy, 2010). Through surveys, parents, including

adolescent mothers, reported the reading strategies were generally easy to learn, the program was beneficial for their child (Tsybina & Eriks-Brophy, 2010), they planned on continuing use of the reading techniques, and they enjoyed best the time they spent with their children (Huebner, 2000).

### **Problem and Purpose Statement**

Through a review of the literature on teenage pregnancy and parenting, it was discovered teenage mothers are lacking in their supportive interactions with their children due to limited knowledge, support, and experience (Burgess, 2005; van Steensel, 2006; Lanzi et al., 2009; Luster et al., 2000). However, research has also made clear teenage mothers respond very well to direct and preventative support services when employed in their school curriculum (Sadler & Cowlin, 2003; Sadler et al., 2007; Williams & Sadler, 2001). Unfortunately, these programs are deficient in interventions that facilitate interactions between mother and child (Sadler & Cowlin, 2003). Immediate concern must be focused on literacy and language development of adolescent mothers' children because of the documented negative impacts early onset parenting has on children's language and literacy skills (Fagan & Lee, 2013; Keown et al., 2001; Oxford & Spieker, 2006; Luster et al., 2000). Therefore, successful interventions should focus on training teenage parents on how to expose their children to literacy and its importance (Romo & Nadeem, 2007). It is essential to understand what specific practices are most beneficial for adolescent mothers and their children as it may be the use of a literacy program is advantageous, providing multiple opportunities for communication between mother and child (Scott et al., 2016; Schmitt et al., 2011).

Researchers have repeatedly shown professionals and caregivers are able to learn the DR protocol, which influences language and literacy development in preschool-aged children (e.g., Beschoner & Hutchison, 2016; Crain-Thoreson & Dale, 1999; Fleury & Schwartz, 2016; Strouse, O’Doherty, & Troseth, 2013). However, there is a dearth of information on adolescent parents’ ability to learn and implement the DR strategies with fidelity. Further investigation is required to understand the effects of this intervention across all populations. The primary purpose of this study was to evaluate the effectiveness of teaching DR strategies to adolescent mothers as measured by DR strategy use during shared book reading with their child. The secondary purpose was to determine the impact of adolescent mothers’ implementation of DR strategies on their preschool children. The research questions are:

1. To what extent does a DR intervention taught to adolescent mothers in a one-on-one setting affect their shared reading behaviors as measured by their use of the DR strategies as measured by a fidelity checklist?
2. What is the impact of an adolescent mother’s fidelity of implementation of DR strategies during a shared book reading and her child’s single word expressive vocabulary?
3. What is the impact of an adolescent mother’s fidelity of implementation of DR strategies during a shared book reading and her child’s single word receptive vocabulary?
4. What are the perceptions of the teenage mothers regarding the goals, procedures, and outcomes of the DR intervention as measured by a survey?

## **CHAPTER 2: METHODOLOGY**

### **Design**

A single subject multiple baseline across behaviors (i.e., CROWD and PEER) a priori research design was utilized to measure the impact of a DR intervention on the use of the CROWD and PEER strategies implemented by adolescent mothers during shared book reading. Phase changes were based on predetermined time points, instead of based on criterion. Reading behaviors were coded live during each session or from the video as necessary to track frequency or percentage of use. Each reading session was recorded to determine inter-observer agreement and training fidelity.

### **Recruitment Procedures**

After IRB approval, three adult participants and their children were recruited from a charter school in the southeastern United States. The researcher visited the regularly scheduled playgroup with a staff member to explain the study, potential benefits and risks, inclusion criteria, and compensation to potential participants. Inclusionary criteria for mothers were as follows: (1) be 15 to 19 years old, (2) have a child 2 to 5 years old, and (3) be enrolled in the teen parent program at the charter school. All eligible participants were 18 or older, therefore they signed consent immediately. While three participants signed consent, one participant withdrew from school and another did not meet the 50% attendance criteria during the baseline phase, so both were excluded from the data analysis. Only one adolescent mother, Isabel, participated in the entire study.

## **Participants**

### **Adult participant**

Isabel was an 18-year-old African American mother of twin boys, Jack and John. Isabel was matriculated in 11<sup>th</sup> grade and self-reported a grade point average (GPA) of 2.8 at the beginning of the study. She was fifteen when she had her twin boys. Isabel lived at home with her parents and spoke English only. She reported an annual household income of less than \$24,999, which indicates that she was from a low SES household. When asked about her home literacy practices, Isabel reported she read to her children daily, taught her children new words "all the time" (quoted from participant), owned four picture books for her children at home, and never took her children to the library. Isabel scored a total of 54 out of a possible score of 94 on the *Perceptions of Reading Abilities*. Her responses ranged from 1 (never) to 5 (always) on the individual components of the survey. This result indicated that Isabel had a moderate perception of her capabilities in reading abilities, such as sounding out words, answering questions based on a passage, and reading fluently. Isabel's Total Reading standard score was 73 on the Woodcock Reading Mastery Test (WRMT-R/NU), almost two standard deviations from the mean, which indicated a moderate to significantly below average score.

### **Child participants**

Jack and John were twin brothers who were 33 months at the start of the study. They were both African American, spoke English at home, and had a medical diagnosis of asthma. Their mother reported they did not receive any special education services. Jack had a total language score of 95 on the Peabody Language Scale 5<sup>th</sup> Edition, with a 93 on the auditory

comprehension subtest and a 97 on the expressive communication subtest. He had a standard score of 106 on the PPVT-4 and a standard score of 100 on the EOWPVT-4. John received a total language score of 96, with a 98 on the auditory comprehension subtest and a 95 on the expressive communication subtest. He earned a standard score of 92 on the PPVT-4 and a 92 on the EOWPVT-4. All language scores for both children were in the average range.

### **Setting**

This study was held at a charter school in the southeastern United States during regularly scheduled weekly playgroups held for mothers and their children to interact during the school day and during group therapy. UCP offers a full day childcare service free of charge to the adolescent mothers enrolled in the BETA program, as well as parenting support; including parent training, prenatal nursing support, and life skills training. The BETA program offers the traditional school curriculum with special electives to address parenting skills, such as Child Development and Nutrition, to pregnant teenagers and young mothers ages 12 to 19 years. The program serves up to 100 students at a time. For this study, arrangements were made prior to the start of the intervention that the participants could attend an intervention session during their group therapy period so there would be two intervention sessions per week. Participants also attended a newly created group specific to the study during the intervention program, instead of their regular weekly playgroup.

## Measures

### **Adult participants**

#### *Demographic form*

A demographic form (view sample in Appendix A) was completed by the adult participant following consent and prior to data collection. The survey included the following items: *name, age, race, current GPA, age when first child was born, name of child, age of child, gender of child, current grade level, enrollment in ESE services, primary language (if not English, English proficiency), annual household income, with whom you live, experiences with depression, and questions relating to the home literacy environment.* This information was used for descriptive purposes.

#### *Self-efficacy scale for reading achievement*

The self-efficacy scale for reading achievement (Appendix A) was completed prior to data collection to measure the participant's perceptions of her reading achievement capabilities. The self-efficacy scale was developed by the researcher, modeled after Muris's (2001) and Jonson-Reid and colleagues' (2005) academic self-efficacy scales, and based on Bandura's (2006) "Guide for Constructing Self-Efficacy Scales." Elements of the scale were based on the county's reading benchmarks for high schoolers.

#### *Woodcock Reading Mastery Tests—Revised/Normative Update (WRMT-R/NU)*

The WRMT-R/NU (Woodcock, 1998) is a norm-referenced standardized test used to measure an individual's reading ability. The test consists of three clusters (i.e., the Readiness

Cluster, the Basic Skills Cluster, and the Reading Comprehension cluster), each made up of two subtests. Only the Reading Comprehension cluster was administered as a descriptive measure and consisted of the word comprehension and passage comprehension subtests. Word comprehension, consisting of three subtests (i.e., antonyms, synonyms, and analogies) measures reading vocabulary. Passage comprehension requires the subject to identify the missing word from a sentence. The test was standardized across 3,700 children and young adults in 1995 to 1996. Reported median reliabilities are at .91 with a range of .68 to .98.

#### *DR strategy use*

The participant's use of the DR strategies was coded by an undergraduate research assistant 1 (RA 1) to track implementation fidelity of the CROWD and PEER strategies. While most sessions of the study were coded live by RA 1, one intervention session and two generalization sessions had to be coded from video as RA 1 was unable to attend the sessions in person. Two undergraduate research assistants (RAs 1 and 2) were trained to code prior to the start of the study by observing and coding sample videos with direct instruction from the researcher to criterion. Research assistants had to reach 80% agreement with the researcher before they could begin coding (Kratochwill et al., 2010, 2013).

During baseline and generalization, questions posed by the participant were coded as any of the CROWD prompts or as "other" questions (e.g., yes or no questions, questions eliciting pointing) based on the participant's intentions. During intervention, however, the books were scripted with CROWD prompts. RA 1 coded the participant's reading behavior based on whether she asked the scripted questions. Any questions outside of the twelve scripted prompts were

coded as any of the CROWD prompts and “other” questions as determined by RA 1. CROWD prompts were measured as an average frequency per phase.

The presence of the PEER hierarchy was coded as to whether the adult participant used each strategy (see Appendix D and E for sample coding sheets) for all phases. Evaluate, expand, and repeat strategies were measured as average percentages per phase (number of times the strategy was used divided by number of opportunities for the strategy to be used multiplied by 100). The number of opportunities was equal to the number of questions the participant asked during the book reading, because she had the opportunity to use the strategies anytime she asked a question.

#### *Social validity*

The participant was asked to complete a social validity survey (Tarnowski & Simonian, 1992) at the end of the intervention (found in Appendix C). The survey measured the participant’s views of the goals, procedures, and outcomes of the study through seven items on a seven point Likert scale and four open ended questions.

#### **Child participants**

##### *Preschool Language Scale - 5th Edition (PLS- 5)*

The PLS-5 (Zimmerman, Steiner, & Pond, 2011) is an assessment of developmental language skills for children aged birth to 7 years, 11 months. It is composed of two standardized scales: Auditory Comprehension (AC) and Expressive Communication (EC). The test was administered prior to the start of the intervention to each child for descriptive purposes. The test was standardized across more than 1,800 children in 2009 to 2010. Validity measures indicated

correlations with the PLS-4 and CELF Preschool-2. Reported inerrater reliabilities fell in a range from .95 to .98 and reported interscorer reliabilities fell in a range from .91 to 1.0.

*Expressive One-Word Picture Vocabulary Test - 4th Edition (EOWPVT-4)*

The EOWPVT-4 (Martin & Brownell, 2011) assesses verbal expression in individuals aged 2 to 80 years. The test was standardized on English-speaking individuals ages 2 through 80 years and up residing in the United States. The test requires examinees to name objects, actions, and concepts when shown an illustration. The test was administered prior to the start of the intervention to each child for descriptive purposes.

*Peabody Picture Vocabulary Test - 4th Edition (PPVT-4)*

The PPVT-4 (Dunn & Dunn, 2007) measures the receptive vocabulary of individuals aged 2 years 6 months through 90 years and older. The test was standardized on a national sample (N= 5, 500) of individuals ages 2 to ninety years and up. The test provides reliable scores, with reliability and validity coefficients in the .90s range. For each test item, the examiner says a word and the examinee selects an illustration, out of four, that depicts the word's meaning. The test was administered prior to the start of the intervention to each child for descriptive purposes.

*Near-transfer vocabulary tests*

During the last intervention session of each book, the children were assessed on the five book-specific vocabulary terms targeted in the book that was read through an expressive and receptive task. For the expressive test, the children were shown a scanned illustration from the

book depicting each vocabulary word and were asked “What is this?” The administrator waited five seconds for a response before recording a non-response. Each verbal response was recorded and the total number of correct responses was scored. For the receptive test, children were shown four scanned pictures- one of them was the targeted vocabulary word, and three were foils. The administrator said, “Point to the \_\_\_\_.” and again waited five seconds before recording a non-response. Each response and the total number of correct responses were recorded. Prior to the start of the study and after the intervention was complete, the children were assessed on all twenty vocabulary words targeted in the four intervention books. The same procedures were used as in the individual book vocabulary tests.

### **Independent Variable**

#### **Dialogic reading training**

The participant was educated on each reading strategy by the researcher. The training consisted of: (1) naming the strategy, (2) defining the strategy, (3) providing examples, and (4) answering questions. The participant received a handout which summarized the reading strategy during the first session of each strategy. Books were provided and scripted with twelve CROWD prompts each. The participant was asked to read the entire book and include the scripted prompts. During the sessions following the introduction of a new DR strategy, the researcher reviewed the DR strategy prior to the book reading using the same components of the training (i.e., naming the strategy, defining the strategy, providing examples, and answering questions). The adult participant was reminded and encouraged to continue use of the previously learned reading strategies, as the DR steps are cumulative.

### *Training fidelity*

The adherence to the DR intervention was assessed by a trained research assistant (RA B) according to the following elements: (1) session started with a hello song, (2) children were invited to play, (3) during training or review, the strategy was named, (4) during training or review, the strategy was defined, (5) during training or review, examples were provided (6) during training or review, any questions were answered, (7) children were invited to read a book, (8) the parent read a book, (9) children were invited to play, (10) feedback was provided, (11) new questions were answered, and (12) session ended with a goodbye song. Twenty-five percent of videotaped sessions were observed and scored. The sessions were randomly selected prior to the start of the study. Fidelity was measured by the number of behaviors observed divided by the total number of behaviors that should have been observed and multiplied by 100. Fidelity was 91.7%.

### **Materials**

#### *Story books*

Seven books were randomly selected from the “Read Together, Talk Together” kit as done in past studies. (RTTT; Cohen, Kramer-Vida, & Frye, 2012a; 2012b; Fleury & Schwartz, 2017; Whitehurst & National Center for Learning Disabilities, 2000). See Tables 1 and 2 for books used.

Table 1. Books Used Throughout Study

Book Title	Author	Publication Year	Book No.
<i>A Summery Saturday Morning</i>	Margaret Mahy	1998	1
<i>Pigs Aplenty, Pigs Galore!</i>	David McPhail	2008	2
<i>The Wolf's Chicken Stew</i>	Keiko Kasza	1996	3
<i>I Took my Frog to the Library</i>	Eric Kimmel	1992	4
<i>The Dinosaur Who Lived in My Backyard</i>	B.G. Henessy	1990	5
<i>Spike in the City</i>	Paulette Bogan	2000	6
<i>Oonga Boonga</i>	Frida Wishinsky	1990	7

#### *Baseline book*

One book (Book 1) was provided for baseline without any alterations.

#### *Intervention books*

Five intervention books (Books 2 through 6) were used during the intervention phase. Each book was prepared with twelve scripted questions (i.e., CROWD prompts) taped into the book following the written text. There were at least two scripts of each CROWD prompt type. Five vocabulary words were targeted through these scripts. The researcher consulted the RTTT teacher notes to choose the book specific vocabulary. Vocabulary words had to be mentioned in the text, as well as depicted in the illustrations.

#### *Generalization book*

One book (Book 7) was provided for generalization without any alterations on the last intervention session.

## **Dependent Variable**

### **Adult Participant**

The adult participant's use of DR strategies (i.e., CROWD, PEER) was collected regularly during the study through a fidelity checklist. Following the intervention, the adult participant completed a social validity survey.

### *Inter-observer Agreement*

Inter-observer agreement (IOA) was established through the coding of 25% randomly selected videotaped sessions by a trained research assistant (RA B) which was compared with the original coding sheets. A minimum of 80% agreement was required for IOA. Inter-observer agreement was calculated by dividing the amount of agreements by the total sum of disagreements and agreements between the raters and multiplying by 100. Reliability was 85% between the two RAs. Disagreements in the coding was resolved by the researcher in conjunction with the RAs.

### **Child Participants**

Children's receptive and expressive language skills were assessed during the study through a researcher developed test of single word book-specific expressive and receptive vocabulary. The number of correct responses were totaled and scored out of the number of total responses.

## Procedures

After IRB approval and consent to participate, the adult participant was individually tested on the Reading Comprehension Cluster of the WRMT-R/NU during her group therapy sessions. She also completed the self-efficacy questionnaire on her reading abilities and a demographic survey. Each child was assessed using the PLS-5, EOWPVT-4, PPVT-4, and near-transfer receptive and expressive vocabulary tests.

After testing was complete, participants entered the baseline phase for five sessions for the first behavior (i.e., *prompt*), eight for the second behavior (i.e., *evaluate*), eleven for the third behavior (i.e., *expand*), and fourteen for the fourth behavior (i.e., *repeat*). After baseline, the participants entered the intervention phase which included DR training and using pre-scripted books. All reading sessions were videotaped and coded by a trained research assistant (RA 1). After the intervention, participants entered the generalization phase with no direct feedback or training on DR strategies and a book without scripts. To conclude the study, the adult participant completed a social validity survey about the intervention (see Appendix C).

### **Baseline**

Baseline data were taken for five sessions during the biweekly playgroups. The adult participant was instructed to read to her children as she normally would with no intervention present. Book 1 was used only for baseline. After five predetermined baseline sessions, the DR intervention for the first behavior began.

## **Intervention**

The intervention was an eight-week program completed during the biweekly playgroup sessions. Each session lasted thirty minutes and was led by the researcher. Three sessions were dedicated to each strategy (i.e., *prompt, evaluate, expand, repeat*). During the first of these three sessions, the researcher educated the participant on the strategy (see Independent Variable) and the participant practiced the strategy through the reading of Book 2 to her children. During the next two sessions, the strategy was reviewed and the participant read a new book to her children to practice the strategy. A new book was introduced for each new reading strategy (Books 3-6).

Each session was structured consistently, but the focus of the session differed every three sessions (see Table 2 for an overview of the intervention). The following schedule was followed every session:

1. Hello Song
2. Training/Review of reading strategy
3. Book reading
4. Discussion and feedback for the mother during playtime
5. Goodbye Song

Table 2. Dialogic Reading Intervention Overview

Session	Focus	Book
Baseline sessions 1-5	Read as you normally would	1
Intervention sessions 1-3	Prompt your child (i.e., CROWD prompts)	2 & 3
Intervention sessions 4-6	Evaluate what your child says	2 & 4
Intervention sessions 7-9	Expand what your child says	2 & 5
Intervention sessions 10-12	Repeat the prompt	2 & 6
Generalization sessions 1-2	Read without intervention supports	7

### **Generalization**

The adult participant was provided a new book (Book 7) on the last intervention session and was asked to prepare to read to her children using the DR reading strategies. The adult participant was videotaped while reading to her children with support that was present in the intervention eliminated (i.e., unscripted books, no feedback from the researcher, and no review of dialogic reading strategies). This occurred during playgroup, just as baseline did, for two sessions.

## **CHAPTER THREE: RESULTS**

### **Research Question 1**

Results for research question one appear in Figure 1. Effects of the DR intervention on the reading behaviors of adolescent mothers were examined through visual analysis (Kratochwill et al., 2010). Line graphs were constructed to display the data for each participant across behaviors. The four steps for conducting visual analysis were as follows: (1) “document a predictable baseline pattern of data”, (2) “examine the data within each phase of the study to assess the within-phase patterns,” (3) “compare the data from each phase with the data in the adjacent phase to assess whether manipulation of the independent variable was associated with an effect,” (4) “integrate all the information from all phases... to determine whether there are at least three demonstrations of an effect at different points in time” (which in the present study were baseline, intervention, and generalization; Kratochwill et al., 2010, 2013). The features examined to assess the effect of an intervention were: (1) level, (2) trend, (3) variability, (4) immediacy of the effect, (5) overlap, and (6) consistency of data patterns across phases (Kratochwill et al., 2010, 2013). Changes in level (the average of the data in a phase), trend (the slope of the line of best fit within a phase), and variability (the range of data surrounding the best-fitting straight line) were displayed on each graph and examined. Data patterns across phases (immediacy of effect, overlap, and consistency of data in similar phases) were examined to further determine the effect size of the intervention. Immediacy of effect is measured by the change in level in the last three data points and first three data points in adjacent phases; a more rapid effect signifies a stronger relationship between the intervention and effect. Overlap refers to the amount of data that converges in between phases; the larger the separation between data of

two neighboring phases, the more convincing it is that there has been an effect (Kratochwill et al., 2010, 2013). Consistency of data in similar phases will not be considered in the present study because each phase of this study is unique. The steps outlined above were followed using the assessment features to determine what effect the DR intervention had on adolescent mothers' reading behaviors.

### **Prompt**

During the baseline, there was a low degree of variability, with a mean of 0.4 (range 0 to 2), and a moderate downward trend. Isabel was then trained to use the different types of prompts as established by the DR protocol (i.e., CROWD). Following intervention, there was an immediate increase in the level of the variable ( $M = 11.75$ ), little variability, and no overlap with the baseline. The level decreased ( $M = 6.5$ ) from intervention to generalization. These data suggest a highly effective intervention on the *prompting* behavior for Isabel.

### **Evaluate**

During the baseline, there was a high degree of variability with a mean of 34% (range 0% to 75%) and a moderate negative trend. Immediately following intervention, there was a rapid increase in the level of the dependent variable ( $M = 52%$ ) with moderate variability, and complete overlap with the baseline. The level slightly increased ( $M = 55%$ ) from intervention to generalization. These data suggest a moderately effective intervention on the *evaluating* reading behavior for Isabel.

**Expand**

During the baseline, there was minimal variability with a mean of 3% (range 0% to 20%) and a moderate negative trend. Immediately following intervention, there was a slow increase in the level of the dependent variable ( $M = 13\%$ ) with little variability, and 86% overlap with the baseline. The level from intervention to generalization slightly decreased ( $M = 10\%$ ). These data suggest a moderately effective intervention on the expanding reading behavior for Isabel.

**Repeat**

During the baseline, there was minimal variability with a mean of 0% and a low positive trend. Immediately following intervention, there was a rapid increase in the level of the dependent variable ( $M = 51\%$ ) with little variability and no overlap with the baseline. The level decreased ( $M = 23\%$ ) from intervention to generalization. These data suggest a highly effective intervention on the repeating reading behavior for Isabel.

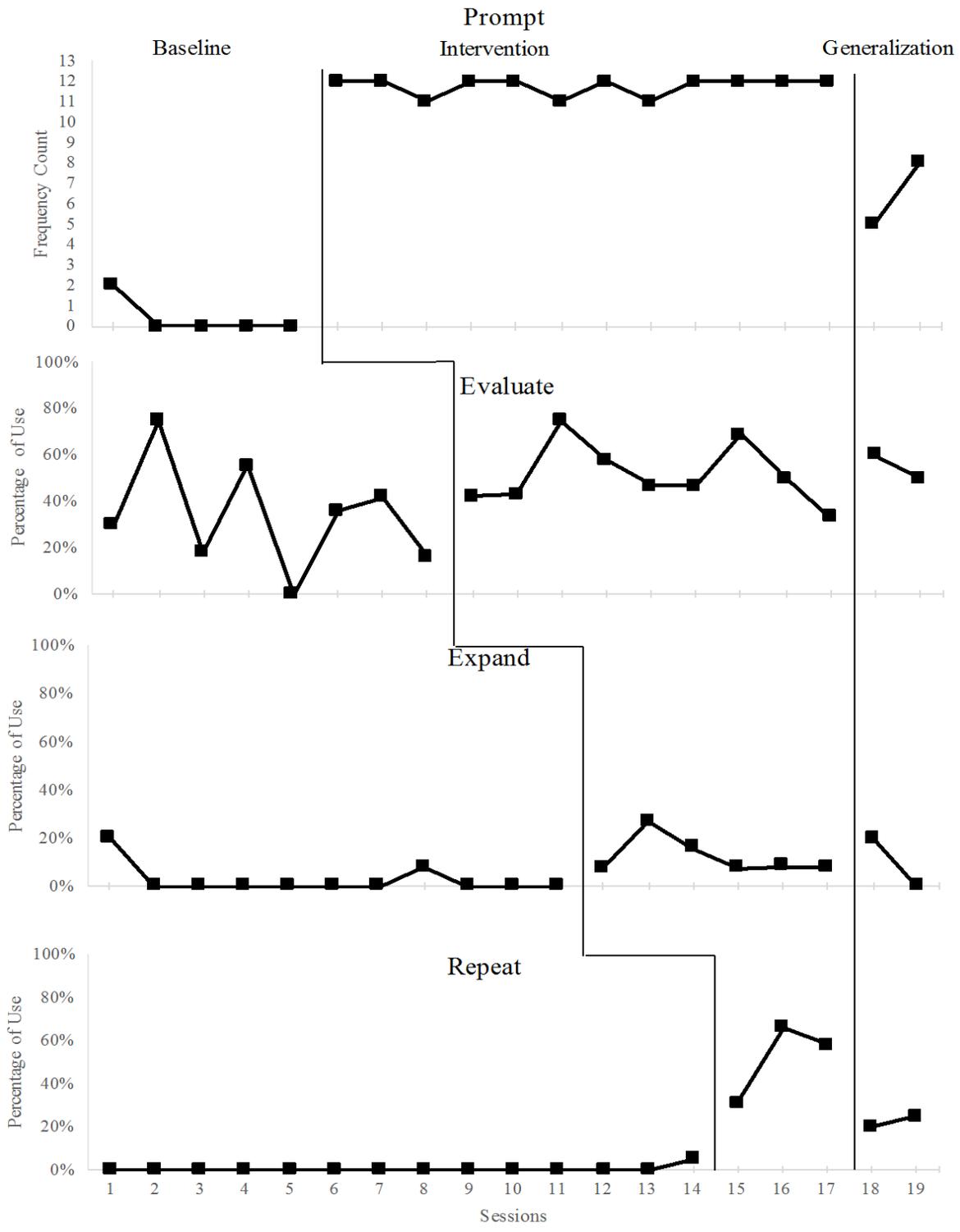


Figure 1. Isabel's Use of DR Strategies

### **Research Questions 2 and 3**

To determine if there was an effect of the adolescent mother's training on DR behaviors and her sons' receptive and expressive vocabulary, the mean scores on the near-transfer assessments for the baseline and intervention phases per child were calculated. Children's vocabulary scores were reported per child. View Table 3 for book-specific vocabulary per phase and per book.

Both John and Jack's expressive scores were 3 (out of 5) for baseline and 2.25 (out of 5) for intervention. Their receptive scores were 5 (out of 5) for baseline and 3.25 (out of 5) for intervention. The expressive and receptive near-transfer vocabulary decreased from baseline to intervention in both children.

*Table 3. Book-specific Vocabulary per Phase*

Book	Vocabulary Targeted					
Baseline	Book 1	Cat	Dog	Bike	Goose	Sandals
Intervention	Book 2	Oatmeal	Plane	Pizza	Broom	Bed
	Book 3	Wolf	Chicken	Pancakes	Doughnuts	Cake
	Book 4	Librarian	Card catalog	Skin	Pelican	Hyena
	Book 5	Dinosaur	Basketball	School bus	Tent	Kite
	Book 6	Leash	Parking meter	City	Frisbee	Skateboard

### **Research Question 4**

The adolescent mother's experience related to the DR intervention was evaluated through a 7-item social validity questionnaire. Samples of Isabel's answers to the open-ended questions of the survey were included to address the aspects of the intervention that were most and least enjoyable.

Isabel responded with an average of 6.42 (range 6 to 7) on the seven items, indicating a high level of acceptance of the DR intervention. Responses to open-ended questions also indicated positive reactions to the experience. Isabel reported that she enjoyed the intervention because "[her] boys are learning more vocabulary" and that she "learned new ways to read to [her] boys."

## CHAPTER FOUR: DISCUSSION

Adolescent mothers have the potential to use effective practices with the right support and education to facilitate their children's language and literacy development (Burgess, 2005; Romo & Nadeem, 2007; Sadler & Cowlin, 2003; van Steensel, 2006). Dialogic reading has been shown to be effective in developing children's expressive and receptive language skills when implemented by a variety of adults, including parents (e.g., Arnold et al., 1994; Blom Hofman et al., 2007; Lonigan & Whitehurst, 1998). However, limited information has been reported related to the degree of fidelity of implementation of DR strategies when implemented by low SES parents. Because families of adolescent parents typically live in a low SES household, this study evaluated the effectiveness of teaching DR strategies to adolescent mothers, and to determine the impact of adolescent mothers' implementation of DR strategies with fidelity on their preschool aged children. The results of the study suggested a functional relation between the independent variable (i.e., DR training) and the adolescent mother's use of DR strategies. The adolescent mother reported positive reactions to the intervention; however, there was a negative drop in the children's book specific vocabulary skills during the intervention.

The first research question examined the effects of a DR training on the adolescent mother's use of DR strategies (i.e., CROWD and PEER). The data indicated when trained on the four DR strategies separately and with consistent feedback and in-book scripts, the adolescent mother was able to learn and implement the DR strategies more frequently than in baseline. These results are consistent with previous studies which have trained adults, and specifically parents, to implement DR strategies during shared book reading (e.g., Beschorner & Hutchison, 2016; Fleury & Schwartz, 2016; Strouse, O'Doherty, & Troseth, 2013). Adolescent mothers

have responded well to other direct supportive services, such as prenatal fitness, stress management classes, and maternal nutrition classes, when employed in their school curriculum (Sadler & Cowlin, 2003; Sadler et al., 2007; Williams & Sadler, 2001), indicating their potential to learn and implement new strategies. This potential coupled with adolescent mothers' instinctive maternal care and sense of responsibility for their children (Shanok & Miller, 2005; Wiemann et al., 1996) may begin to explain Isabel's success in implementing the DR strategies. It may be important to note that the "expand" strategy had the least immediate increase out of the other DR strategies, which is consistent with past studies (e.g., Blom-Hoffman et al., 2007; Crain-Thoreson & Dale, 1999; Dale et al., 1996; Hargrave & Sénéchal, 2000) and may indicate this this strategy is the most difficult to implement.

During generalization, there was a visual decline for all behaviors, except for the *evaluate* strategy, which presented a slight increase. The consistency in Isabel's implementation of the DR strategies may have been affected by known stressors in her life during the study. During baseline, Isabel presented many questions ( $M = 9.4$ ) that fell out of the scope of the CROWD prompts during shared book reading, such as yes or no questions and questions that elicited a pointing response. However, during generalization, Isabel used the CROWD prompts more frequently than in baseline, even without scripts in the books, and used very little 'other' prompts ( $M = 1.5$ ). Although the average number of CROWD prompts used during generalization declined from intervention, the intervention had an impact on the quality of questions Isabel used. However, the decline in this strategy and the *expand* and *repeat* strategies suggest that a more gradual decrease in support may be necessary for the intervention to have a lasting impact on participants' reading behaviors.

The second and third research questions examined the effect of the use of DR strategies with fidelity on preschool aged children's expressive and receptive vocabulary. Receptive and expressive scores on the individual book assessments decreased from baseline to intervention. These data suggest that exposure to DR strategies during shared-book reading with their adolescent parents does not promote children's learning of book-specific vocabulary given the design of this study. While the majority of past studies that have reported child outcomes found increases in language and/or emergent literacy skills (Towson, Fetting, Fleury, & Abarca, 2017), the results of the current study may have been inconsistent due to an uneven distribution of vocabulary difficulty across phases. For example, baseline vocabulary words included "dog" and "cat" while intervention vocabulary words included "librarian" and "Frisbee". Only one book was used during baseline and it was repeated five times, in comparison to four different books used during intervention that were read only twice each. This uneven distribution of complexity and increased exposure to the vocabulary during baseline may have compromised the results for research questions two and three. Another factor which may have affected the children's success on the near-transfer vocabulary task was their attention to the book during the book reading. There were many times that the children were distracted by toys in the room and wandered off during the book reading. If they did not receive repeated exposure to the vocabulary during the book reading because of distractions, their success on the vocabulary task may have been compromised.

Acceptance of the DR intervention was evaluated through a seven-item survey using a seven point Likert scale. Isabel reported an average score of 6.42 on the seven items, suggesting positive acceptance of the intervention. Responses to open-ended questions aligned with this

finding. In one study, Heubner (2000) included adolescent mothers in the study sample and reported positive parental satisfaction of a DR intervention program. Positive satisfaction may be attributed to adolescent mothers' perceived success to implement a new strategy, when compared to limited opportunities to succeed in other areas of their life, such as school (Rauch-Elnekave, 1994).

### **Limitations and Future Directions**

While this study suggests an encouraging relationship between a DR intervention and adolescent mothers' use of DR strategies, there are several limitations that must be noted. This study included only one adult participant, allowing for a one-on-one intervention. This may have affected the participant's learning of the strategies- whether the one-on-one attention was conducive to her learning or the lack of watching others utilize the strategies negatively impacted her learning. Future studies should include a larger number of adolescent mothers for generalization and train participants in a group, as that is more similar to real-life circumstances for this population.

Another limitation of the current study was the uneven distribution of complexity of the book specific vocabulary across phases. The near-transfer vocabulary may have been too difficult for the age of the child participants. Future studies should continue measuring children's language development when exposed to DR but when utilizing near-transfer vocabulary assessments, should consider the age range and complexity to choose appropriate vocabulary.

Future studies should explore the minimal increases in the implementation of the *expand* strategy as seen in the current study and many others. The *expand* strategy is an important step of the DR protocol as it exposes children to more language and vocabulary. During this step, the

adult models a longer and more detailed sentence, which gives children a chance to practice longer utterances during the *repeat* strategy. Researchers should explore what makes this behavior more difficult to implement and extra methods of support when training individuals on the *expand* strategy.

Due to the risk factors associated with teenage parenting, such as dropping out of high school, low academic achievement, and low-income, it is critical that interventions that effect adolescent mother's literacy skills be developed. Future research should investigate the impact of implementing DR strategies during shared book reading on adolescent mothers' literacy. Developing a mutually beneficial intervention for both the mother and child is critical in breaking the intergenerational cycle that is associated with teenage parenting.

### **Conclusion**

This study demonstrated that an adolescent mother was able to utilize DR strategies following a systematic training of the DR protocol. However, positive changes on children's receptive and expressive book-specific vocabulary due to implementation of DR strategies were not seen. This study contributed to the limited information that is available concerning literacy and language interventions for adolescent mothers and their children. Adolescent mothers' potential to effectively implement a new strategy when given the appropriate support should inspire continued research with this population. Future researchers must continue to understand adolescent mothers' interactions with their children to develop interventions that will target the areas that are lacking in order to break the multigenerational cycle seen in families of adolescent mothers.

**APPENDIX A: PARENT DEMOGRAPHIC INFORMATION FORM**

Name: \_\_\_\_\_ Current Age: \_\_\_\_\_

Race: \_\_\_\_\_ Current GPA: \_\_\_\_\_

Your Age When First Child Was Born: \_\_\_\_\_

Name of Child: \_\_\_\_\_

Age of Child: \_\_\_\_\_ Gender of Child: \_\_\_\_\_

Current Grade Level in School (Circle One):

6<sup>th</sup> Grade    7<sup>th</sup> Grade    8<sup>th</sup> Grade    9<sup>th</sup> Grade

10<sup>th</sup> Grade    11<sup>th</sup> Grade    12<sup>th</sup> Grade

Have you been or are you currently enrolled in an ESE program? Y/N

If yes, please describe: \_\_\_\_\_

Primary Language: \_\_\_\_\_

If not English, are you proficient in English? Y/N

Annual Household Income:

Less than \$24,999                       \$25,000 to \$49,999

\$50,000 to \$99,999                       \$100,000 or more

With whom do you live? \_\_\_\_\_

Have you ever experienced any depressive symptoms or depression? Y/N

If yes, please describe: \_\_\_\_\_

How often do you read to your child? (e.g., daily, once a week, never) \_\_\_\_\_

How often do you teach new words to your child? \_\_\_\_\_

How many picture books does your child have at home? \_\_\_\_\_

How often do you take your child to a bookstore or library? \_\_\_\_\_

## **APPENDIX B: PERCEPTIONS OF READING ABILITIES**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

<p><b>Directions:</b> Please indicate your opinion about each of the questions below by marking any one of the FIVE responses in the columns on the right side, ranging from (1) “Never” to (5) “Always” as each represents a degree on the continuum.</p> <p><i>Please respond to each of the questions by considering your current ability and opportunity to do each of the following.</i></p>	Never	Rarely	Sometimes	Often	Always
I can sound out words I do not recognize.	1	2	3	4	5
I can read sentences fluently; that is, quickly, with accuracy, and with appropriate intonation.	1	2	3	4	5
I can answer questions based on a passage after reading the passage.	1	2	3	4	5
I can fill in the blank in sentences with a vocabulary word. (e.g., The storm _____ our efforts to hold a company picnic in the park last weekend.)	1	2	3	4	5
I can determine or clarify the meaning of unknown vocabulary.	1	2	3	4	5
I can determine the central idea of a passage that I read.	1	2	3	4	5
I can provide a summary of a passage using the main idea and details.	1	2	3	4	5
I can read and understand a nonfiction passage.	1	2	3	4	5
I can determine the author’s purpose of his/her passage as informing, persuading, narrating.	1	2	3	4	5

I can read and comprehend science/technical texts.	1	2	3	4	5
I can read and comprehend history/social studies texts.	1	2	3	4	5
I feel comfortable and at ease when I read out loud.	1	2	3	4	5
I feel comfortable asking my teachers for help when I have trouble on reading schoolwork.	1	2	3	4	5
I finish my reading homework by the deadline.	1	2	3	4	5
I believe I am as competent as my peers in reading skills.	1	2	3	4	5
I value getting good grades on reading.	1	2	3	4	5
I am satisfied with my grades in reading.	1	2	3	4	5
I am capable of receiving good grades in reading.	1	2	3	4	5
I believe that if I work hard, I can succeed in reading.	1	2	3	4	5

TOTAL SCORE: \_\_\_\_\_

**APPENDIX C: ABBREVIATED ACCEPTABILITY RATING PROFILE – MODIFIED**

## APPENDIX C: ABBREVIATED ACCEPTABILITY RATING PROFILE – MODIFIED

(Tarnowski & Simonian, 1992)

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Based on your experience with the Dialogic Reading intervention you have been trained on, please rate your experience below using the 7 point scale.

	Strongly disagree	Disagree	Somewhat disagree	Neither Agree nor disagree	Somewhat agree	Agree	Strongly agree
1. This is an acceptable shared book reading strategy to develop language in young children.	1	2	3	4	5	6	7
2. This reading strategy is effective in changing my shared book reading behaviors.	1	2	3	4	5	6	7
3. I will use this reading strategy in the future.	1	2	3	4	5	6	7
4. This reading strategy will not have any negative side effects.	1	2	3	4	5	6	7
5. I like using this reading strategy.	1	2	3	4	5	6	7
6. This strategy is a good way to teach shared book reading behaviors.	1	2	3	4	5	6	7
7. Overall, the reading strategy will help me.	1	2	3	4	5	6	7
<b>TOTAL COLUMNS</b>							



**APPENDIX D: DIALOGIC READING INTERVENTION CODING SHEET-  
BASELINE & MAINTENANCE**



<b>Feature</b>	<b>TOTAL NUMBER</b>
Completion Prompts	
Recall Questions	
Open-Ended Questions	
Wh-Questions	
Distancing Questions	
Vocabulary Questions	

Complete the chart below with total number across each book reading:

<b>Feature</b>	<b>Total Number Observed</b>	<b>Total Number Possible</b>	<b>Percentage</b>
Pause 3-5 Seconds			
Repeat Prompt			
Evaluates			
Expands			
Asks Child to Repeat			

**APPENDIX E: DIALOGIC READING INTERVENTION CODING SHEET-  
INTERVENTION**

*Pigs A Plenty, Pigs Galore*

Book A

Reader Observed: \_\_\_\_\_ Date: \_\_\_\_\_  
 Session #: \_\_\_\_\_ Time Spent Reading: \_\_\_\_\_  
 Person Completing Original Coding: \_\_\_\_\_  
 Person Completing IOA: \_\_\_\_\_

Intervention Component	Circle Response (Y = Yes, N = No)	
<b>During the Book Reading</b> - Participant five oral language prompts and implements PEER hierarchy for each.		
<p style="text-align: center;"><b>Prompt 1: <i>What is next to the man's chair?</i></b></p> <p style="text-align: right;">Evaluates</p> <p style="text-align: right;">Expands</p> <p style="text-align: right;">Asks child to repeat</p>	<p style="text-align: center;"><b>Y</b></p> <p style="text-align: center;"><b>Y</b></p> <p style="text-align: center;"><b>Y</b></p> <p style="text-align: center;"><b>Y</b></p>	<p style="text-align: center;"><b>N</b></p> <p style="text-align: center;"><b>N</b></p> <p style="text-align: center;"><b>N</b></p> <p style="text-align: center;"><b>N</b></p>
<p style="text-align: center;"><b>Prompt 2: <i>What happened to the man?</i></b></p> <p style="text-align: right;">Evaluates</p> <p style="text-align: right;">Expands</p> <p style="text-align: right;">Asks child to repeat</p>	<p style="text-align: center;"><b>Y</b></p> <p style="text-align: center;"><b>Y</b></p> <p style="text-align: center;"><b>Y</b></p> <p style="text-align: center;"><b>Y</b></p>	<p style="text-align: center;"><b>N</b></p> <p style="text-align: center;"><b>N</b></p> <p style="text-align: center;"><b>N</b></p> <p style="text-align: center;"><b>N</b></p>
<p style="text-align: center;"><b>Prompt 3: <i>What are the pigs pouring in the sink?</i></b></p> <p style="text-align: right;">Evaluates</p> <p style="text-align: right;">Expands</p> <p style="text-align: right;">Asks child to repeat</p>	<p style="text-align: center;"><b>Y</b></p> <p style="text-align: center;"><b>Y</b></p> <p style="text-align: center;"><b>Y</b></p> <p style="text-align: center;"><b>Y</b></p>	<p style="text-align: center;"><b>N</b></p> <p style="text-align: center;"><b>N</b></p> <p style="text-align: center;"><b>N</b></p> <p style="text-align: center;"><b>N</b></p>
<p style="text-align: center;"><b>Prompt 4: <i>Who are these two big pigs?</i></b></p> <p style="text-align: right;">Evaluates</p> <p style="text-align: right;">Expands</p> <p style="text-align: right;">Asks child to repeat</p>	<p style="text-align: center;"><b>Y</b></p> <p style="text-align: center;"><b>Y</b></p> <p style="text-align: center;"><b>Y</b></p> <p style="text-align: center;"><b>Y</b></p>	<p style="text-align: center;"><b>N</b></p> <p style="text-align: center;"><b>N</b></p> <p style="text-align: center;"><b>N</b></p> <p style="text-align: center;"><b>N</b></p>

<b>Prompt 5: <i>How are these pigs coming to the house?</i></b>	<b>Y</b>	<b>N</b>
Evaluates	<b>Y</b>	<b>N</b>
Expands	<b>Y</b>	<b>N</b>
Asks child to repeat	<b>Y</b>	<b>N</b>
<b>Prompt 6: <i>What is happening here?</i></b>	<b>Y</b>	<b>N</b>
Evaluates	<b>Y</b>	<b>N</b>
Expands	<b>Y</b>	<b>N</b>
Asks child to repeat	<b>Y</b>	<b>N</b>
<b>Prompt 7: <i>What instrument is this pig playing?</i></b>	<b>Y</b>	<b>N</b>
Evaluates	<b>Y</b>	<b>N</b>
Expands	<b>Y</b>	<b>N</b>
Asks child to repeat	<b>Y</b>	<b>N</b>
<b>Prompt 8: <i>These pigs are all eating pizza. What do you like to eat?</i></b>	<b>Y</b>	<b>N</b>
Evaluates	<b>Y</b>	<b>N</b>
Expands	<b>Y</b>	<b>N</b>
Asks child to repeat	<b>Y</b>	<b>N</b>
<b>Prompt 9: <i>Where are the pigs brushing their teeth?</i></b>	<b>Y</b>	<b>N</b>
Evaluates	<b>Y</b>	<b>N</b>
Expands	<b>Y</b>	<b>N</b>
Asks child to repeat	<b>Y</b>	<b>N</b>
<b>Prompt 10: <i>Of pigs and pigs and pigs some more, of pigs aplenty,</i></b> _____	<b>Y</b>	<b>N</b>
Evaluates	<b>Y</b>	<b>N</b>
Expands	<b>Y</b>	<b>N</b>
Asks child to repeat	<b>Y</b>	<b>N</b>
<b>Prompt/Question</b>	<b>Y</b>	<b>N</b>
<input type="checkbox"/> Completion <input type="checkbox"/> Recall <input type="checkbox"/> Open-Ended <input type="checkbox"/> Wh-? <input type="checkbox"/> Distancing <input type="checkbox"/> Vocab		
<input type="checkbox"/> Other		
Question or Word: _____		

	Evaluates		
	Expands	Y	N
	Asks child to repeat	Y	N
		Y	N
	<b>Prompt/Question</b>	Y	N
<input type="checkbox"/> Completion <input type="checkbox"/> Recall <input type="checkbox"/> Open-Ended <input type="checkbox"/> Wh-? <input type="checkbox"/> Distancing <input type="checkbox"/> Vocab			
<input type="checkbox"/> Other			
Question or Word: _____			
	Evaluates	Y	N
	Expands	Y	N
	Asks child to repeat	Y	N
Total yes responses from pages 1-4 _____		<b>Comments:</b>	
/ Total yes + no responses from pages 1-4			
X 100 = %			
fidelity of implementation			

Complete the chart below with total numbers across book reading:

Feature	TOTAL NUMBER
Completion Prompts	
Recall Questions	
Open-Ended Questions	
Wh-Questions	
Distancing Questions	
Vocabulary Questions	

Complete the chart below with total number across each book reading:

<b>Feature</b>	<b>Total Number Observed</b>	<b>Total Number Possible</b>	<b>Percentage</b>
Pause 3-5 Seconds			
Repeat Prompt			
Evaluates			
Expands			
Asks Child to Repeat			

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