THE EFFECTS OF AN INTERACTIVE READING INTERVENTION ON EARLY LITERACY DEVELOPMENT AND POSITIVE PARENTING INTERACTIONS FOR YOUNG CHILDREN OF TEENAGE MOTHERS

by

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Of all the skills young children can acquire, reading is one they will use the most. Reading is a valuable skill in our society, and is basic to one's education (Dzama & Gilstrap, 1983). In particular, young children of teenage mothers who do not engage in prereading activities may not develop the early literacy skills that provide a foundation for later reading achievement. Increasing book reading with young children may be a powerful way of introducing them to a lifelong relationship with literature, and may reduce the risk of reading failure.

This study examined the short-term effects of an interactive reading intervention designed to facilitate early literacy development and positive parenting interactions for young children of teenage mothers. This school-based intervention involved reading

activities and strategies that were designed to support storybook reading between parent-child dyads. The goal of the intervention was to support teenage mothers reading aloud to their young children for 15 minutes at least 2 days per week.

Thirty-two parent-child dyads were assigned randomly to one of two groups, (a) interactive reading intervention, and (b) a "wait-list control" group. Each group was comprised of 16 parent-child dyads. The study consisted of 1 week of baseline and 6 weeks of intervention. To examine the effects of the interactive reading intervention, a measure of early literacy skills was obtained from the Stony Brook Family Reading Survey and the Early Literacy Development Observation Assessment. A measure of positive parenting behaviors also was obtained from the Stony Brook, the Dyadic Parent-Child Interaction Coding System, and the Coder Impression Rating Scale. Engaged time and treatment integrity were also examined. Pre- and post-test scores were obtained on all measures.

Results were analyzed using multiple, one-way, analyses of covariance (ANCOVA). Group (intervention and control) was the between-subjects factor, and pretest was the covariate. Overall, the interactive reading intervention appeared to facilitate more time engaged in reading for all children, and resulted in gains on early literacy development for young children who demonstrated low early literacy skills at pretest. There was no effect on positive or negative parenting behaviors. Teenage mother's perceptions of treatment and social validity indicated a general consensus of overall satisfaction and enjoyment of the shared reading activity with their child.

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CHAPTER I

STATEMENT OF THE PROBLEM

Of all the skills young children can acquire, reading is one they will use the most. Reading is considered a valuable skill in our society, and is basic to one's education (Dzama & Gilstrap, 1983). Unfortunately, over a third of children in the United States enter school unprepared to learn (Whitehurst, 1992). Children who start school behind often stay behind. Juel (1988) found that 88% of poor readers at the end of first grade were still poor readers at the end of fourth grade. Moreover, Juel (1988) found that good readers had been exposed to 18,681 words by the end of first grade, while poor readers had only been exposed to 9,975. Stanovich (1986) describes this trend as the "Matthew Effect" in which the gap between good and poor readers increases over time.

Serious social concerns are also associated with reading failure. The long-term outcomes often associated with reading failure include juvenile offenders (85% are illiterate) and prison inmates (60% are illiterate) (Brown, 1988). Increasingly, researchers involved in the study of how children learn to read have been turning their attention to the literacy experiences in the home.

Foundations of Literacy for Young Children

For most children, the foundations of reading competence begin *before* they enter school. Exposure to books, magazines, papers, signs, posters, and reading materials of all kinds foster the young child's experiences with printed materials. In particular, reading books to young children has been identified as one of the early foundations that promotes later reading success (Adams, 1990; Anderson et al., 1985). Children who experience reading success in school generally are introduced early to quality literature, have hundreds of picture books in their homes, and see their parent(s) and other family members reading for pleasure. Meanwhile, children at-risk for reading difficulty enter school with fewer hours of shared book reading, have few, if any, children's books in their homes, and they do not see their parent(s) as frequent readers. Indeed, children who have not engaged in these basic reading activities before first grade are at-risk of reading difficulty, possibly culminating in being identified as learning disabled (Manning, 1988).

Parents play a vital role in their children's early literacy development. When parents help their children learn to read, they help open the door to a new world. Reading books to young children is a powerful way of introducing them to a lifelong relationship with quality literature, while reducing the risks of reading failure and adult illiteracy. Both the amount and quality of adult-child reading interaction before school entry are important. What a family does is more important to student success than family income or education. This is true whether the family is rich or poor, whether the parents finished high school or not, or whether the child is in preschool or in the upper grades (Epstein,

1991; Henderson & Berla, 1994; Keith & Keith, 1993; Liontos, 1992). One of the most compelling findings from the Commission on Reading is that "the single most important activity for building the knowledge required for eventual success in reading is reading aloud to children" (Anderson et al., 1985).

Strickland and Morrow (1989) describe early literacy as the knowledge about reading that young children acquire from their environments. Children as young as two and three years of age have ideas about how the processes of reading work (Heath, 1983). For example, young children enjoy the repetitiveness of predictable books, begin to follow the parents' pointing cues, and become interested in the materials and rhythm of language. Early exposure to literacy-related activities can include magnetic letters on the refrigerator, word and letter games on a computer, and parents reading aloud to their children on a regular basis.

Given the importance of early literacy development, differences in the prevalence of exposure to print in the natural course of every-day life among young children are of grave concern. Interactive reading allows a parent to structure storybook reading so that the child knows what it feels like to read a book with comprehension long before the child can perform the task alone. Unfortunately, not all children receive such early support in reading and, for some, early school experiences do not build upon or provide such experiences (Butler & Clay, 1982). According to Silver (1978), 8 to 10 percent of kindergarten children may be at-risk for severe reading failure, and up to 25% may be vulnerable to later reading problems.

Young Children of Teenage Parents Are At-Risk for Poor Literacy and Academic Outcomes

Adolescence is generally conceptualized as the developmental period ranging from 13 to 19 years. Although early literacy activities are important for all children, literacy-related activities for young children of teenage parents may be especially crucial. Nearly 500,000 teenagers in the United States give birth every year. In fact, births to adolescents comprise one-fifth of the annual births in the United States (Testa, 1992). Of grave concern, girls between the ages of 10 to 14 years have become one of the fastest growing groups of parents. Adolescent mothers, adolescent fathers, and their young children face many daunting challenges. For teenage parents, the challenges of 'life' include: (a) time constraints, (b) uncertainty about what to do and their own attitudes towards literacy, (c) cultural barriers, and (d) the lack of a supportive environment. In addition, families headed by teenage parents are at risk of living in poverty (Unger & Cooley, 1992). According to Summerlin (1990), other negative consequences of early childbearing can include: (a) dropping out of school because of parenting responsibilities, (b) limited vocational skills, (c) additional pregnancies, and (d) homelessness as a result of poverty.

These life challenges frequently interfere with the provision of critical early literacy skills for young children of teenage parents (Kupetz & Green, 1997). Moreover, when teenage parents fail to follow-through with literacy-related activities for their young children, it places the child at-risk for poor literacy and academic outcomes. Parallel to addressing early literacy skills for young children of teenage parents is the need to

increase positive parenting interactions and build a constructive basis for adaptive behavior.

Young Children of Teenage Parents Are Also At-Risk for Later Antisocial Behavior Problems

In addition to being at-risk for poor literacy and academic outcomes, young children of teenage parents are also at-risk for later antisocial behavior problems. Although adolescent mothers are able to bear children physically, mastering the developmental tasks of adolescence and becoming a parent simultaneously can be especially challenging. Often, a teenage parent will compromise one role or fail at both roles; i.e., the balance between adolescent development and becoming a parent (Lowenthal & Lowenthal, 1997). Typically, adolescents' self-absorption makes it difficult for them to differentiate between their child's needs and their own. Adolescent parents often have unrealistic expectations about child development (Musick, 1994), which may lead to child abuse when those expectations are not met. Compared to older women, adolescent mothers are considered more impatient, punitive, and less nurturing (Cooper, Dunst & Vance, 1990). Adolescent mothers may also experience the challenges of motherhood as a stressful event, develop a poor self-esteem, become depressed, and may be unable to provide their young child with the emotional stability necessary for the child's development. Indeed, the risk of patterns for poor literacy and academic outcomes for young children, as well as later antisocial behavior problems, may be related.

The early onset of problem behavior defines a unique developmental pathway with a poor prognosis for multiple adolescent outcomes (Dishion, French, & Patterson, 1995; Moffitt, 1993; Patterson, 1993). One of these adolescent outcomes is illiteracy. It is essential for young children to be engaged in positive interactions with their parents as early as possible that help facilitate language development and promote the acquisition of early literacy skills.

One of the core issues in the early onset of problem behavior is academic failure. Research on the development of beginning readers indicates that academic failure has two sources. The most obvious source is a pattern of antisocial behavior that carries over into the school environment (Patterson, Reid, & Dishion, 1992). The second source is poor preparedness for academic skills based on early experiences in the family. Some children simply are not ready either socially or cognitively to benefit from the kinds of tasks typically offered in public school environments. Moreover, early onset conduct problems are known to be associated with teenage pregnancy and childbearing. Adolescent parents simply do not have the stable relationships and economic base to attend fully to the challenging and multiple demands of parenting. Thus, it is essential to provide teenage parents with proven tools to enhance positive parenting interactions, support to use the tools successfully, and continuous feedback on their performance and the progress of their child are essential.

Importance of Early Intervention

Research from the science of prevention was found helpful in developing interventions to promote healthy parenting among adolescent parents (Coie et al., 1993). The guidelines offered by prevention science recommend that programs be (a) implemented *before* the risk factors have been established, (b) targeted to those at highest risk, (c) able to articulate the developmental process that underlies the desired behavioral change, (d) relevant and sensitive to the cultural context of the participants (Coie et al., 1993). Thus, nurturing the families of teenage parents needs to be a priority on the American agenda. These families, who often face other economical and emotional challenges as well, need support from all sectors of the community if they are to become more involved in their children's education. This type of collaboration encourages a proactive approach instead of a reactive approach toward child development. Community organizations need to encourage and support parents as they guide the growth of their children.

A prevention approach is especially important in literacy where difficulty with reading may have more to do with differences in opportunities to learn about books than having a learning deficit (Adams, 1990). By providing young children at-risk of reading failure with early and appropriate learning experiences, future reading problems may be prevented or their severity reduced. Prevention is often more effective than intervention, and may be more economical by preventing the need for expensive special education services (Adelman, 1982).

To further a prevention approach to literacy, President Clinton has made parent-child reading and storytelling a priority. More specifically, in 1994, President Clinton signed Goals 2000: Educate America Act into law stating that "by the year 2000, all children in America will start school ready to learn" (NAEP 1996, p. 2). To help accomplish these objectives, *Ready to Learn*, Goal 1, states that "early, regular reading to children is one of the most important activities parents can do with their children to improve their readiness for school, serve as their child's first teachers, and instill a love of books and reading" (NAEP 1996, p. 6).

Impact of Interactive Reading on Literacy Outcomes and Positive Parenting Outcomes

Interactive reading may provide a means to address both the need for early literacy development and the need to support positive parenting interactions for young children of teenage parents. Shared book reading offers young children many of the skills necessary for school readiness; e.g., vocabulary, sound structure, print awareness, the structure of stories and development of language, enhancement of listening skills, sustained attention, and the pleasure of learning. Shared book reading also offers an opportunity to establish the physical closeness so critical to the young child's emotional and social development (Kupetz & Green, 1997). The sharing of a book is just one of the ways a child may form social bonds and necessary attachments with other people. Combined with this interweave of social bonds and shared book reading skills, young children find ways to communicate with their caregiver and other adults, and learn to

become involved in the social processes of reading. For example, young children who have acquired an interest in sights and sounds through shared reading experiences can begin to show an interest in other people who are present in their surroundings. Just as young children need food, shelter, and love, so do they need the nourishment of books (Whitehurst, 1992).

Reading to young children helps them become more aware of the conventions surrounding books, including the way books are held and the direction in which print is read. Reading to children may also help them learn print-related vocabulary like page, title, and word, which are useful for formal instruction in reading. When parents read aloud to their young children, the interaction (a) provides a positive role model for young children, (b) introduces children to new information and a variety of outside experiences, and (c) helps increase the length of time in which the young child can remain actively engaged in an activity (Trelease, 1989). Through reading aloud, young children learn to want to read, not just the mechanics of how to read (Trelease, 1989). For example, Lundberg and colleagues reported that exposure to print affects subsequent reading performance in first and second grade (Lundberg, Frost, & Petersen, 1988; Oloffson & Lundberg, 1983; 1985). Brown, Cromer and Weinberg (1986) found that an interactive reading program resulted in significant improvement of auditory memory, enhancement of listening skills, development of language, and provided an opportunity to establish a closeness to the parent that is critical to the young child's emotional and social development.

Read-aloud programs have been especially successful in helping children from low socioeconomic backgrounds to acquire early literacy skills. Neuman and Gallagher (1994) coached 6 teenage mothers to support their child's engagement in a literacy-related play activity by increasing the rate of three parenting behaviors: (a) labeling objects, (b) recruiting participation through modeling, demonstrating, and providing assistance, and (c) being sensitive to children's cues and interests and responding to initiations. Neuman and Gallagher (1994) found that after coaching, all of the mothers were able to use the strategies, and they tended to continue using them at a higher rate than baseline levels during the three months they were involved in the study. Children's involvement in literacy-related play activities increased significantly during intervention, and dramatic changes were observed on pre-and post-tests of receptive vocabulary. However, the design of the study does not allow for a clear understanding of which strategies had the most effect on children's development.

Parents need to provide opportunities for young children to have meaningful experiences. It is from these concrete experiences that young children make the connection between the abstract knowledge they are constructing and their environment (Miller, 1990). Likewise, it is just as important for parents to enjoy the shared book reading experience with their young child. Shared book reading can be an enjoyable time for the parent and child alike! Books enrich young children's interest in written language and, equally important, the relationship between the parent and child is also enriched. Parents are powerful role models for their young children and the time spent engaged

with a positive, proactive activity such as shared reading, is likely to increase the positive relationship between parent and child.

Basis for a Proposed Solution

Several studies suggest that parental management skills become critical during the 16 to 20 month time period (Ainsworth, 1979; Isabella & Belsky, 1991). Children's competencies are increasing dramatically in language, motor, and cognitive areas but with these increasing competencies come more attempts by the child to control the parent-child interaction. Between the ages of 12 and 18 months, parents report a drop in pleasure in parenting and an increase in level of stress. In addition, parents increase their level of coercive discipline during this time period in response to their child's increasing independence (Fagot & Kavanagh, 1993).

Especially at this critical age, it is necessary to develop and foster early literacy activities and positive parenting interactions for young children of teenage parents. In addition to increasing the amount of positive time teenage parents spend with their young child during interactive reading sessions, prevention efforts should build on these four components. First, intervention efforts are more likely to be effective if their primary goal is preventive in nature (Berninger, Thalberg, DeBruyn, & Smith, 1987). That is, if services begin during the first few years of life, when early literacy skills are developing, children can acquire critical early literacy skills before formal reading instruction begins. In this way, the education system can respond to children's needs in a proactive versus

reactive manner. Second, intervention efforts may be most effective if they are proven meaningful to young children. Therefore, intervention efforts should be integrated into enjoyable activities for young children. Interventions must be designed and implemented that will help these young children acquire the skills predictive of reading success. Finally, providing teenage parents with support and encouragement will help to increase their self-esteem, self-confidence, and motivation.

Purpose of Study

The purpose of this proposed research was to examine the effects of an interactive reading intervention on early literacy development and positive parenting interactions for young children of teenage parents. The study focused specifically on young children of teenage parents and factors within an urban community that promote the development of print awareness and positive parenting interactions. The study addressed the following questions:

Research Question 1.0. Does an interactive reading intervention increase a young child's early literacy development?

Research Question 2.0. Does an interactive reading intervention increase positive parenting interactions between young children and their teenage mothers?

Research Question 3.0. What are the effects of an interactive reading intervention on the amount of a child's engaged time?

CHAPTER II

LITERATURE REVIEW

The relation between early literacy development in young children, children's interactions with their parents, and predictors of success in reading has been studied extensively. A growing body of research about how parents and children embrace literacy and language skills reveals an array of complex interrelationships (Mikulecky, 1996). Approaches that change parent-child literacy interactions are generally successful. For instance, Becoming a Nation of Readers (Anderson, Hiebert, Scott, & Wilkinson, 1985), the blueprint for a literate society, draws the strong conclusion that reading to children is "the single most important activity for building the knowledge required for eventual success [in learning to read]" (p. 23). Limited success was also attained with studies that involve simple parent-child interventions (Mikulecky, 1996). Research found that it was difficult to transfer parent-child interventions to improved literacy in the home.

One purpose of this research was to examine the effects of an interactive reading intervention on early literacy development for young children of teenage mothers. By identifying print awareness skills that are predictive of reading-related skills, children at-risk of reading difficulties could be identified early. A second component of this research

was to examine factors that promote positive parenting interactions between young children and their teenage mothers.

The scope of this review will be to examine the available research on the effects of (a) adolescent pregnancy and parenting, (b) importance of parent-child interactions, (c) interventions in parent-child interactions, and (d) sharing books with young children.

Adolescent Pregnancy and Parenting

One issue associated with adolescence, which is often conceptualized as the developmental period between 13 and 19 years, is the prevalence of teenage pregnancy and childbearing. As a result, adolescent pregnancy continues to receive national attention as a major challenge affecting youth in the United States. In part, adolescent pregnancies and childbearing remain higher in the United States than in many other industrialized countries (Testa, 1992). Consistent with this claim, Dryfoos (1994) has targeted adolescent pregnancy as one of the "social morbidities" affecting youth in America today. A report by the National Center for Health Statistics provides a compendium of statistics documenting that in 1993, adolescent mothers gave birth to approximately 1 out of 8 infants born in the United States, which is equivalent to 12.9% of the population. While current birth rates among adolescent mothers are lower than rates in the early 1960's, they remain higher than in the late 1970's. Since 1991, birth rates to adolescent mothers have stabilized (Guyer et al., 1995). Prior to the late 1950's, about 90% of single mothers opted for adoption. Today, more than 90% of single mothers

assume the responsibility of caregiver (AGI, 1994). Thus, in today's society, adolescent pregnancy is likely to be accompanied by single parenthood. Recent data provided by the Alan Guttmacher Institute indicated that more than one million adolescents become pregnant each year, with nearly half of them (478,000) becoming adolescent mothers (AGI, 1994). Further estimates suggest that 45% of females aged 15 to 19 years were sexually active prior to a legal contract of marriage (Davis, 1989).

Although adolescent mothers are able to bear children physically, many adolescents present as neither well informed nor well prepared for the demanding responsibilities of parenthood (Lamb & Elster, 1990). Consequently, children of adolescent parents emerge as groups of children at-risk for a range of mental health, health care, developmental problems, and education needs (Barratt, 1991; Furstenberg, Brooks-Gunn, & Morgan, 1987; Hofferth, 1987; Hubbs-Tait et al., 1994; Miller & Moore, 1990; Osofsky, Hann, & Peebles, 1991). Documented programs that have demonstrated changes in adolescent parenting behavior successfully used an ecological theory to develop programs that were comprehensive, skill-oriented, and designed to effect change in the adolescent mother's life circumstances (Field et al., 1982, Olds et al., 1986). Guidelines from prevention science were also found helpful in developing programs to promote healthy parenting among adolescent mothers (Coie et al., 1993). For example, prevention sciences recommend prevention programs that are (a) implemented as early as possible, before the risk factors have stabilized, (b) targeted to those at highest risk, (c) inclusive of the developmental process that underlies the desired behavioral change, and (d) relevant and sensitive to the cultural context of the participants.

Challenges of Adolescent Parenting

Juggling the developmental milestones of adolescence and becoming a parent at the same time can be especially challenging. Substantial evidence suggests that young children of teenage parents are at-risk for a range of health and developmental problems, as well as academic difficulties (Tyree, Vance, & Boals, 1991).

Furstenberg et al. (1989) report that very young parents provide less stimulating home environments for their infants and toddlers than older mothers do, which perhaps explains why children born to teenagers are likely to show deficits in intellectual functioning during the preschool and grade-school years, and very poor academic performances by the time they reach adolescence. Because of such poor teenage parent preparedness, young children of teenage parents are also at-risk for antisocial behavior patterns, juvenile delinquency, and special education placement.

Children of Adolescent Parents

Children of adolescent parents present as a group of youngsters who are often predisposed to developmental and social problems. Risk factors such as limited social and economic support, as well as high-risk environments, are considered characteristics of adolescent-parent families (AGI, 1994; Small & Luster, 1994; Stoiber & Houghton, 1994). In turn, these characteristics impact negatively on the development of their children. For those adolescent mothers who are more likely to come from low-income

families and to resist acceptance of their pregnancy initially, they also tend to receive inadequate prenatal health care. Consequently, babies born to younger mothers, when compared to older mothers, are at greater risk for health problems during childhood.

Further, unrealistic expectations about parenting, which foster important parent-child bonding, attachment, and communication patterns, are more prevalent during the adolescent years. Adolescent mothers have also been found to adopt authoritarian ideas and practices about their role as parents, tending to view typical developmental behaviors as negative unless taught to think otherwise (Furstenberg, Brooks-Gunn, & Chase-Lansdale, 1989). Possible explanations for adolescent parents' tendency toward unrealistic expectations include: (a) the immature developmental status of adolescent parents, (b) failure to adopt child-oriented or empathic concerns, and (c) the belief that the self-oriented needs of adolescents limit their capacity to adapt and be sensitive to their children's developmental needs (Stoiber & Houghton, 1994).

One important challenge for young children of teenage mothers is that they are at-risk of demonstrating lower cognitive abilities and more educational problems. Contrary to popular belief, children's limited academic performance and cognitive development is not a direct result of birth to a young parent. Instead, poor economic conditions, lower parent educational level, and single parenthood appear to be associated with the increased multiple risks (Stoiber & Anderson, 1996). Moreover, the risk environments of adolescent mothers have been reported to have a cumulative effect on their children, increasing the level of academic and behavioral difficulties their children experience, as they age.

Another important challenge for young children of teenage mothers is that they are more likely to develop social-emotional and coping problems (Furstenberg et al., 1989; Stoiber & Anderson, 1996). For instance, limited competency in adapting to environmental situations or initiating social interactions with peer and/or adults has been observed for these children, when compared to other groups of children (Furstenberg et al., 1989; Stoiber & Anderson, 1996). In addition, the stresses that tend to embrace adolescent parent families can be detected earlier in their children's development (Stoiber & Anderson, 1996; Stoiber & Houghton, 1994). As an example, the study by Stoiber and Anderson (1996) illustrated that those behavioral indicators of limited competency with coping behaviors (e.g., poorer self-regulation, greater irritability, negative or sad affect, poorer social engagement) were observed for children of adolescent mothers, particularly for those adolescent families who seemed to experience greater distress in their lives.

Environmental factors are also known to be associated with adolescent families who experience distress in their lives. Pervasive examples include poverty, parental depression, community violence, and less adult supervision. These culminating factors seem to compromise the child's social and affective development negatively. Also, the family context of risk, including harsh parenting practices, child neglect, and not meeting their child's fundamental needs, have been reported for adolescent parents (Furstenberg et al., 1989). Stoiber and colleagues confirm that risk factors associated with adolescent parenting are linked to their child's limited competency in adapting to environmental situations or initiating social interactions with peer and/or adults.

Meanwhile, children who have a high probability of failing to acquire the minimum academic skills necessary for success in the real world are considered to be young children at-risk (Ormrod, 1995). Children identified as at-risk come from all socioeconomic levels, but children of poor, single-parent families are especially likely to leave school prior to graduation. Boys are also more likely than girls to drop out of school. African-Americans, Hispanics, and Native Americans are more likely to drop out of school than their European-American and Asian-American counterparts (Fennema, 1987; Frazer & Wilkinson, 1990; National Center for Education Statistics, 1989; Raber, 1990; Steinberg, Blinde, & Chan, 1984). It is important to note that students who eventually drop out of school often share many of the following characteristics: (a) a history of academic failure, (b) older age in comparison to their classmates, (c) emotional and behavioral problems, (d) lack of psychological attachment to their school, and (e) an increasing lack of involvement with school as they get older (Ormrod, 1995).

Not all children of adolescent mothers, however, exhibit problems in their development (Stoiber & Anderson, 1996; Stoiber & Houghton, 1994). Several protective factors have been reported to facilitate the coping skills necessary for young children of teenage mothers. Adolescent mothers who demonstrate positive and realistic expectations about their role as parents and responsive parental behaviors (e.g., an exchange of verbal interactions, behavioral involvement, limit setting, and proactive monitoring) seem to raise children who portray better outcomes than other children of adolescent mothers (Stoiber & Anderson, 1996; Stoiber & Houghton, 1994). Nonetheless, the need for future research aimed at disentangling the impact of risk conditions by the too-early parent, as

well as their long-term effects on their offspring, is warranted. This would help to reduce the cross-generation transmission of risk for problem behavior and other detrimental effects on the child's cognitive, social, and emotional well-being.

The Importance of Parent-Child Interactions

From the moment of birth, the nature of the parent-child relationship is a critical factor in the child's development. When a strong, affectionate bond is formed between parent and child early in the child's life, children are more amiable, cooperative, independent, and have more positive self-concepts (Hartup, 1989; Jacobson & Willie, 1986; Sroufe, 1983). When children do not become closely attached to their parent in early life, they are likely to be immature, unpopular, dependent, and prone to disruptive and aggressive behaviors (Hartup, 1989; Jacobson & Willie, 1986; Sroufe, 1983).

Reading to a child is one of the most important activities a parent can share with their child. Even infants and toddlers benefit from this experience. Reading stimulates children's imaginations and helps them with verbal skills as they learn to speak (Kupetz & Green, 1997). Parent's interaction patterns during storybook reading influence their children's emergent reading development. Flood (1977) found children's performance on pre-reading measures positively correlated to the number of verbal responses parents initiated during storybook reading events.

For most children, parents are the first and probably most influential socialization agents. Parents often reward their children for acceptable behaviors and punish them for

unacceptable ones. In addition, parents serve as models for their children, who frequently imitate the behaviors they see. And parents often determine the specific activities that their young children will engage in, thereby influencing the information their children encounter and the other people with whom they associate (Hess & McDevitt, 1989).

While early literacy-related activities in children's environments make important contributions to children's emergent literacy skills, they often serve as one way in which literacy skills are acquired (Dicksinson & Beals, 1994). Most of children's language development occurs during the preschool period with their parents as the primary teacher (Snow, 1983). Determining the links between different early literacy experiences and different child outcomes prior to formal reading instruction is important to the development of theoretical models of the role of early literacy. Such models could guide the design of early intervention programs for young children and their parents. What is needed are studies like Neuman and Gallagher (1994) that examine the teenage parents children's involvement with literacy-related activities and its effect on early literacy development and positive parenting interactions.

Important Elements of Parent-Child Interactions

Over the past two decades, research has identified several important aspects of parent-child interactions associated with predictors of success in reading for children. Among these are: (a) parents reading to and with their children, (b) the complexity of language use by parents and children during a reading activity, (c) parents' general

attitudes about literacy and their perceived role with their child's literacy development, and (d) an environment that is structured to support literacy activities and interactions (Mikulecky, 1996).

Parents Reading to and with Their Children

Research reported from the 1970's and 1980's identifies strong correlations between parents reading to and with their children and children's success in reading development (Chomsky, 1972; Laosa, 1982; Anderson et al., 1985; Teale & Sulzby, 1986). Meanwhile, recent research has attempted to explain the nature of what occurs during parent-child reading interactions to make early literacy development so promising. As an example, Lancy and Bergin (1992) found that children who demonstrated fluent reading skills and a positive attitude about reading came from parent-child dyads who viewed reading as a fun activity, kept stories moving with a "semantic" rather than a "decoding" orientation, and fostered questions and humor during reading interactions. On the other hand, Tracey and Young (1994) examined parent-child reading interactions within the home environments of accelerated readers when compared to at-risk readers and their college-educated mothers. They found no difference in the frequency of children's oral reading during first grade and actually found at-risk readers to do more oral reading in second and third grade than did accelerated readers. In a follow-up analysis of videotaped parent-child reading sessions between accelerated and at-risk

readers, however, Tracey (1995) found differences in which the accelerated reader received more physical and verbal attention, support, and extended oral feedback.

Moreover, Baker, Sonnenschein, Serpell, Fernandez-Fein and Scher (1994) conducted an in-depth study of more than 40 families to analyze differences between literacy activities of families from low and middle-income environments. Reports indicated that parents and their kindergarten-age children of low-income environments spent more time with reading and homework activities (e.g., flashcards, letter-practice) than did families of middle-income environments. When compared to parents of low-income environments, the parents of middle-income environments reported only slightly more shared book reading interactions with their children. The parents of middle-income environments, however, did report a higher exchange of play with print-related activities and more independent reading by children. Hence, the nature of what occurs during a parent-child reading activity appears to influence reading development, perhaps more than just the fact that parent-child reading occurs.

Complexity of Language Use by Parents and Children During a Reading Activity

Snow and her colleagues have examined the complex role of language use by parents and their children during reading interactions and in other family-related activities (e.g., mealtime conversations and explanatory talk) for more than a decade (Snow & Goldfield, 1983; Snow, Barnes, Chandler, Goodman, & Hemphill, 1991; Beals, 1992; Beals & De Temple, 1992). Research that has examined the impact of language

and communication during mealtimes, and perhaps parent-child reading activities, suggests that it provides a context for promoting parenting skills that may be both ecologically valid and culturally sensitive (Black & Teti, 1997). In addition, Snow and her colleagues support the notion that explanatory talk during mealtimes and other family-related activities serve as predictors for children's later reading achievement in school and on tests than does a simple read-aloud session between parent and child (Snow & Goldfield, 1983; Snow, Barnes, Chandler, Goodman, & Hemphill, 1991; Beals, 1992; Beals & De Temple, 1992).

According to Snow and colleagues (1983), the most effective strategies that surround explanatory talk involves non-immediate or non-literal comments such as those associated with predictions, elaborations, and joining new ideas to previous experiences. An example of these comments is the parent who encourages their child to comment on the picture or title of the book or to link the story to their real life situation. For instance, with a book entitled "Time for Bed," the child might be asked to relate to the story with its own bedtime routines and/or predict what will happen next in the story.

Lancy, Draper, and Boyce (1989) describe the parents of good readers as "using expansionist strategies which include graduated support or scaffolding as children attempted to understand stories as well as strategies for avoiding frustration." In other words, the parent might read the story aloud to their child initially and would then proceed to model the process of making predictions while reading the story. Over time, the parent would begin to read less and encourage their child to take a more active role in reading or [re] telling the story. This strategy was particularly successful with books that

had been read several times. If children were to experience difficulty and frustration with [re] telling the story or making predictions, parents of good readers were reported to assist their children with the difficulty or simply make a joke. In contrast, parents of poor readers were described by Lancy et al. (1989) as "using reductionist strategies which focus upon decoding, focused criticism, and sometimes even covering pictures to avoid a child's 'cheating' in figuring out a word." Essentially, the tone for children who were reported as poor readers is one of reading as a serious task rather than a fun-shared activity.

Parents' General Attitude About Literacy and Their Perceived Role with Their Child's Literacy Development

Differences in parent-child reading behaviors and the complex role of language use by parents and their children suggest that there might also be differences in parents' general attitude about literacy and their perceived role with their child's literacy development. This hypothesis is not to infer that parents of low-income environments do not value education. In fact, several researchers have noted the high value that parents of low-income environments place upon education, especially for their children. As an example, Delgado-Gaitan (1987) reports that an important consideration for Hispanic families who migrate to the United States is to obtain a better education for their children. Taylor and Dorsey-Gaines (1988) also reported the results of detailed studies of families from low-income environments. To support the cited claim above, families from low-income environments were found to report extreme sacrifices and efforts to support their

children's education, even when the parents' level of education was reported as low. In a study of parents from low and high-income environments, Fitzgerald, Spiegel, and Cunningham (1991) report that parents from low-income environments rated the value of education as higher when compared to parents of high-income environments.

It is important to note, however, that different behaviors that surround literacy-related activities may also illustrate differences with parents' general attitude about literacy and their perceived role with their child's literacy development. Goldenberg, Reese, and Gallimore (1992) explain that Hispanic parents from low-income environments were found to emphasize letter naming and spelling-sound correspondence mostly when helping their child develop the skills necessary for literacy development. Baker et al. (1994) also explained that when parents from low-income environments spend storybook reading time with their children, they are more likely to spend the shared time engaging in explicit instruction as well as practicing the mechanics of literacy. Meanwhile, parents and children from middle-income environments were reported to use storybooks for entertainment, playing, and extended familial conversations. Instead, literacy-related activities were presented and modeled as an enjoyable interaction and another way to entertain oneself and perceive the world around them. Again, the work of Lancy and colleagues (1989) helps to confirm these differences in literacy preparedness.

Further, Baker, Serpell, and Sonnenschein (1995) reminds us that parent-child literacy interactions are bi-directional. In other words, while parents influence children during a reading session, children also influence parents. A child who finds literacy learning to be a painful activity is likely to avoid books and also make the reading

experience frustrating for the parent involved. A child who learns to enjoy the reading activity and perceives it as another source of entertainment is likely to ask for books, seek attention while reading, and begin to read independently over time. Data reported by Baker et al. (1995) helps to support this bi-directional explanation of differences in parents' general attitude about literacy and their perceived role with their child's literacy development.

Literacy Support in the Home Environment

Currently, there is a professional debate about the role parents play in supporting literacy in their children's home environments. According to the work of Anderson et al. (1985), children who performed well in school were identified as having books, magazines, and other educational literacy materials in their homes. Anderson and colleagues (1995) also noted that families who possessed an array of literacy-related materials in their homes were from higher-income environments. When researchers agreed to expand the meaning of literacy materials in home environments to include written notes, refrigerator magnets, and grocery lists, the differences between groups were minimal (Delgado-Gaitan, 1987; Diaz, Moll, & Mehan, 1986; and Taylor & Dorsey-Gaines, 1988).

On the other hand, Heath (1983) reported that families from low-income environments used literacy materials and activities in different ways and for different purposes than families from middle-income environments. Heath continues to add that

the schools, as opposed to the families, need to change their perspectives to accommodate these differences and to not focus solely on the literacy practices of families from middle-income environments. Contradictory evidence, provided by Purcell-Gates (1994), indicates a low-level of print use by families from low-income environments. The greatest obstacles that were reported for the lack of literacy materials and time for shared reading activities were a lack of resources and daily routines.

An interpretation of evidence from other research about literacy support in the home environment also presents conflict. For instance, parents and families from low-income environments tend to model less book and magazine reading and are also reported as taking children to libraries less often than parents and families from higher-income environments (Fitzgerald, Spiegel, & Cunningham, 1991; Baker et al., 1994). Meanwhile, parents and families from low-income environments report their use of literacy-related behaviors by way of storytelling and singing, as well as making great sacrifices to support their children's education financially and physically (Heath, 1983; Taylor & Dorsey-Gaines, 1988; Baker et al., 1994; Gadsden, 1995). Hence, the disagreement among researchers about the role parents play to support literacy in their children's home environments as well as school perspectives to accommodate these differences continues.

Interventions in Parent-Child Interactions

Since the late 1980's, Edwards (1995) has documented consistently the desire of parents from low-income families to learn more about what to do when reading to their children. Comments from parent interviews included:

> "I don't know what to do when I open the book. I mean, I don't know what to do first, second, third, and so on."
>
> "I wish somebody would tell me what to do because I am fed up with teachers saying: "Read to your child."

Tracey (1995), citing the work of Topping (1986) and others, notes that experimental studies that were developed to teach parents strategies to help their child during interactive reading sessions have been largely successful. Success was determined by parent's implementation of the strategies. During these experimental studies, some parents learned to increase wait time before correcting their children's reading errors while other parents learned to offer more praise and encouragement for their child's reading efforts and engagement with the book. Contextual prompts as opposed to word-level prompts were also observed during the parent-child reading interactions. Moreover, evidence of dramatic conventions demonstrated by parents during parent-child reading interactions were reported to increase over time. However, transference of learning these strategies to home environments and continued use was reported as rare. Instead, these experimental studies can be viewed as single approaches toward improved family literacy (Tracey, 1995).

Sharing Books with Young Children

Researchers have suggested that parent-child shared book reading may facilitate the acquisition of reading and the development of emergent literacy skills in young children (Pellegrini, Perlmutter, Galda, & Brody, 1990; Teale & Sulzby, 1986). One prerequisite to reading often cited by literacy researchers is that children must first recognize that print has meaning and that written language is different from speech (Smith, 1973). Research also supports the tenet that children learn to read better if an adult has read them to *before* they enter school (Scarborough & Dobrich, 1994b). The activity of a parent reading aloud to their preschool child is viewed by Allison and Watson (1994) as an essential component of the process of a child's learning to read. For example, reading to preschoolers introduces them to written-language skills (e.g., understanding print concepts, knowing the names or sounds of letters), which is useful for later literacy development and reading achievement (Adams, 1990). Moreover, as new words are introduced through shared book reading, it may help young children make the connection between written language and their environment as well as increase their vocabulary development. Specifying how children acquire these skills is important for the design of an effective and appropriate early intervention.

Clark (1982) found three common occurrences in the homes of young fluent readers: (a) extended positive interactions with an adult in literacy events, (b) variety of exposure to print, and (c) use of local library materials for both the child and adult.

Clearly, adult and child interaction during storybook events in the early years is related to later literacy development.

Using Storybooks to Support Emergent Literacy

Researchers have expanded the definition of literacy and identified several terms to explain the set of skills that may be observed in children as they begin to read. For instance, prereading skills, reading readiness, pre-literacy, and emergent literacy have all been used in research, sometimes interchangeably, and at other times, to represent a particular set of skills. Hence, the increased interest in emergent literacy is based on the belief that learning to read is not only a cognitive process, but a social and cultural process as well (McLane & McNamess, 1990; Teale, 1982; Tudge, Putnam, & Valsinger, 1991). Interactive literacy-related activities between adults and children serve an essential role in the developmental process by allowing children to experience the motives, goals, and conditions of literacy (Teale, 1982).

Dickinson, DeTemple, & Smith (1993) asserts that the frequency of book reading experiences during the early childhood years, the nature of the interaction occurring as books were read, and the type of books read all influence a child's ability to benefit from later reading instruction. Field studies concerning parent-child reading events reveal a typical pattern of interaction that begins with didactic, low-level cognitive demand interactions, mainly consisting of labeling and pointing behaviors (Ninio, 1980). As the child grows older, sessions involve the parent initiating fewer cognitive responses and

reading longer sections of the text verbatim (Harkness & Miller, 1982; Heath, 1982; Pellegrini, Perlmutter, Galda, & Brody, 1990; Snow & Ninio, 1986).

Storybook reading has received the most attention within the array of parent-child literacy activities that might enhance oral-and written-language skills (Bus, van IJzendoorn, & Pellegrini, 1995; Scarborough & Dobrich, 1994b). Although it has been shown that the advantages of storybook reading, such as vocabulary acquisition, are heightened by rich adult-child interactions (Sénéchal, Thomas, & Monker, 1995; Whitehurst et al., 1988), most of the research has focused on the *frequency* and not the quality of storybook reading activities, particularly for young children of teenage parents. Several authors have proposed that the quality of interactions during shared book reading may be more important than the frequency of shared book reading (Chaney, 1994; Dickinson & Smith, 1994; Dunning, Mason, & Stewart, 1994; Snow, Dubber & DeBlauw, 1982). However, this interaction is more complex to measure, and consequently, fewer studies have been conducted to examine the importance of quality during shared book reading. Studies reviewed by Scarborough and Dobrich (1994b) conclude that the qualitative aspects of shared reading do not serve as better predictors of emergent literacy outcomes than frequency. A review of the literature has shown that the association between the frequency of storybook reading and various child outcomes is modest at best (Bus et al., 1995; Scarborough & Dobrich, 1994b) and may depict the general influence of a strong orientation toward early literacy (e.g., Share, Jorm, Maclean, Matthews, & Waterman, 1983). As a result, the specific influences of storybook reading warrant investigation. A possibility that has not been evaluated thoroughly is that

models of early literacy experiences should include the influence of reading-related activities other than storybook reading (e.g., Dunning, Mason, & Stewart, 1994; Scarborough & Dobrich, 1994a). However, it is clear that the support parents provide to their young children for learning about literacy contributes to the development of reading.

In a recent study of shared book reading, Sénéchal and Cornell (1993) found that simply exposing young children to new words in the context of a storybook, regardless of the quality of the interaction, increased significantly children's receptive vocabulary knowledge. This study helps to support Scarborough and Dobrich's (1994b) conclusion that the quality of shared book reading may not contribute to skill acquisition more than frequency. Lonigan (1994) hypothesized that there may be indirect effects of shared book reading, and that small changes early on in life may result in substantial increases in later school years due to the developmental trajectory of reading ability. Preschool exposure to print may affect children's language skills, emergent literacy skills, or their interest in reading. Consequently, all of these factors may impact one another and combine to produce a large effect. Bus et al. (1995) contend that shared book reading is a "necessary preparation for beginning reading at school" (p. 17) and is especially important for young children of teenage parents, as it may make the beginning of school easier.

Summary

Research findings from the studies reviewed in this chapter point to several important implications for research on early literacy development and the prevention of reading difficulties for young children of teenage parents. An emphasis on early childhood development is not only desirable, but may in fact be a necessary path toward success with children's level of reading achievement.

The proposition that some children may go to school more prepared to begin reading was also supported by the literature review. Moreover, young children of teenage parents should be given particular attention when designing research aimed at prevention and developing interventions because of the result that they may be getting fewer of the experiences with shared book reading interactions that facilitate skill acquisition. Also, by improving early literacy skills and positive parenting interactions for young children of teenage parents, it will likely reduce the cross-generation transmission of risk for adult illiteracy and problem behaviors. The more we understand the nature of these parent-child interactions, we will be better able to develop school- or home-based interventions, which are more suited for families and children of diverse backgrounds. Finally, the review of research findings about interactive reading interventions between young children and their teenage mothers illustrates the dearth of literature for two-year old children and its effects on early literacy development.

CHAPTER III

METHOD

This chapter will outline the procedures for examining the effects of an interactive reading intervention on early literacy development and positive parenting interactions for young children of teenage mothers. First, a description of the parent-child dyads that participated in the study, the procedures used for their selection, and their assignment to experimental and control groups will be outlined. A demographic analysis will also be included. Second, a description of the independent variable, interactive reading intervention, and dependent variables, early literacy development and positive parenting interactions, are presented. The materials and training procedures involved are also explained. Third, the data collection procedures employed in the study and a description of the between subjects, experimental design will be outlined. Finally, a description of the data analysis for each of the three research questions is discussed.

Participants

Thirty-two young children between the ages of 23 and 34 months, with a mean of 27.3 months (SD = 3.28) and their teenage mothers between the ages of 16 and 20 years, with a mean of 18.3 years (SD = 0.21) were recruited from an urban Portland community to participate in this study. Table 1 presents a description of Portland Public School District demographics, including 10 high schools with 13,958 students enrolled.

TABLE 1. Portland Public School District Demographics

Demographic Characteristic	Frequency
Number of High School Students (Grades 9-12)	13,958
Ethnicity	
African American/Caribbean	15.9%
American Indian/Eskimo/Aleutian	2.3%
Asian-American/Pacific Islander	8.6%
European American/White/Caucasian	66.7%
Latino/Hispanic	6.5%

Note. Based on 1997-98 Portland Public School District of Government Consensus.

To be included in the research, the selection criteria for teenage mothers were that they were (a) enrolled and in compliance with the rules of the participating school or

agency, (b) between the age of 13 and 20 years, (c) the primary caregiver for their young child, and (d) able to read a picture book aloud in English to their child with measurable fluency. Teenage mothers who met these criteria provided informed assent/consent to participate in the research.

The selection criterion for young children of teenage mothers was that they were (a) between 23 and 35 months of age, and (b) in good health at the time of recruitment. Young children with identified health problems, such as asthma or related illness, were eligible to participate in the research. To be included, each participating parent agreed to be randomly assigned to one of two groups, experimental or control.

Participant Recruitment

Children and their teenage mothers between the ages of 16 and 20 years were recruited from an urban Portland community to participate in this study. Recruitment agencies included urban high schools, alternative high schools, and Family Support Centers. One alternative education setting expressed strong interest in serving as a site for the research project and the student investigator recruited other sites by calling administrators of local alternative high schools and posting advertisement signs on teenage parent involvement boards in schools. After permission to conduct the study at the district level was received, a presentation was made to principals and administrators at several alternative schools. Administrators and staff of these alternative schools were encouraged to inform teenage mothers of the opportunity during parent meetings and/or

classes. The principals and administrators recruited interested teenage mothers, who were then contacted by the researcher. Once teenage mothers expressed their willingness to participate in the study, the student investigator initiated a collective meeting for teenage mothers at each school site. The purpose of the collective meeting with the teenage mothers was to outline the purpose, procedures, potential benefits and risks of participation, and rights of study participants. Eight, 45-minute, daytime meetings were held at each of the school sites to allow maximum participation. Separate meeting times were held for teenage mothers randomly assigned into the intervention and control groups. Teenage mothers were informed that the purpose of the study was to learn more about how teenage mothers can help play an important role in their child's reading skills and to promote an opportunity for teenage mothers to relate with their young children in a supportive way. Once teenage mothers agreed to participate in the study, informed consent was obtained. Samples of the consent forms are included in Appendix A. Follow-up telephone contacts were made with teenage mothers who did not return the consent forms. Thirty-two teenage mothers (100%) signed and returned the consent forms.

Researchers adhered strictly to the human subjects' protections as identified by the University of Oregon Institutional Review Board, as well as the participating districts' policies regarding the recruitment of participants in research. Individuals from underrepresented groups (i.e., color, race, national origin, or gender) were actively recruited to participate.

As an incentive to participate, parent-child dyads that completed the pretest assessment received a $20.00 gift certificate toward purchase from a local grocery

retailer. Parent-child dyads who completed all parts of the intervention phase received a $60.00 gift certificate toward purchase from a local 'one-stop shopping' retailer. As compensation for time, participation, and completion of the post-test assessment, parent-child dyads received a $20.00 gift certificate toward purchase from a local toy retailer ($100 x 16 participants = $1600, $40 x 16 participants = $640). Also, by the end of the intervention phase, each parent-child dyad had an opportunity to accumulate 15 new storybooks.

Assignment to Groups

To determine the degree to which an interactive reading intervention influenced early literacy development and positive parenting interactions, two groups were created, (a) parent-child dyads who received the interactive reading intervention (IRI), and (b) a "wait-list control" group who waited until the first group finished to receive the interactive reading intervention. Each group was comprised of 16 parent-child dyads. Teenage mothers who signed and returned the consent forms were randomly assigned with their young child to one of the two groups. Random assignment to groups occurred by the flip of a coin. Following assignment to groups, a trained coach was assigned to each parent-child dyad. Trained coaches conducted the parent interview, which obtained demographic data, an early literacy development observation assessment, and provided materials to parents during the 6-week intervention. Teenage mothers were asked to complete a survey at pretest and post-test. Prior to initiation of the 6-week intervention, one parent-child dyad had to terminate participation in the study due to legal/custodial

reasons. During the 6-week intervention, one parent-child dyad changed their living arrangement status during the study, however, they were able and willing to continue participation in the study. The numbers of parent-child dyads per group completing the study are described in Table 2.

TABLE 2. Number of Parent-Child Dyads per Group

Groups	Number of Parent-Child Dyads
Interactive Reading Intervention – Experimental	16
Interactive Reading Intervention – Wait-List Control	16

Family Demographics

For purposes of this study, demographic data was obtained during a teenage parent interview, conducted by trained coaches. A copy of the interview questions is included in Appendix A. Descriptive statistics of teenage mothers are presented in Table 3. Chi-square tests and mean comparisons were performed to determine if the groups were equivalent on the following demographic variables: school sites, mother's age and ethnicity, level of mother's education completed at the time of the study, mother's living arrangements, employment status outside of the home, mother's siblings, and the number of adults they can "count on" for extra support. Intervention and control groups were equivalent on all parental variables.

TABLE 3. Demographic Characteristics of Teenage Mothers

Characteristic	χ^2 (df)	Intervention (n=16)	Control (n=16)
School Sites	1.1 (4)		
School Site 1		18.8% (6)	15.6% (5)
School Site 2		9.38% (3)	9.38% (3)
School Site 3		12.5% (4)	12.5% (4)
School Site 4		9.38% (3)	9.38% (3)
School Site 5		0% (0)	3.13% (1)
Mother's Age	2.74 (4)		
16 years		6.3% (2)	0% (0)
17 years		12.5% (4)	12.5% (4)
18 years		12.5% (4)	9.4% (3)
19 years		12.5% (4)	18.8% (6)
20 years		6.3% (2)	9.4% (3)
Mother's Ethnicity	3.5 (6)		
African-American		3.1% (1)	6.3% (2)
American Indian		3.1% (1)	3.1% (1)
Asian-American/Pacific Islander		3.1% (1)	0% (0)
European-American		21.9% (7)	18.8% (6)
Latina/Hispanic		15.6% (5)	18.8% (6)
European & African-American		0% (0)	3.1% (1)
European-American & Latina		3.1% (1)	0% (0)

TABLE 3. Continued

Characteristic	χ^2 (df)	Intervention (n=16)	Control (n=16)
Level of Education Completed	8.6 (5)		
7 – 9th grade		3.1% (1)	6.3% (2)
10th grade		15.6% (5)	3.1% (1)
11th grade		28.1% (9)	18.8% (6)
12th grade		0% (0)	3.1% (1)
General Education Diploma (GED)		3.1% (1)	9.4% (3)
1 – 3 years of college		0% (0)	9.4% (3)
Mother's Living Arrangements	8.5 (5)		
Alone with child		0% (0)	12.5% (4)
Parents and child		9.4% (3)	6.3% (2)
Parents, siblings, and child		25% (8)	9.4% (3)
Partner/Husband and child		15.6% (5)	15.6% (5)
Roommate/Friend and child		0% (0)	3.1% (1)
Transition living		0% (0)	3.1% (1)
Paying Job/Employment Status	2.1 (1)		
Yes		12.5% (4)	25% (8)
No		37.5% (12)	25% (8)

TABLE 3. Continued

Characteristic	Intervention (n=16)	Control (n=16)
Mother's Siblings		
M	3	3.25
SD	.61	.44
Adults for extra support		
M	4.31	5.3
SD	2.85	3

Descriptive statistics for young children of teenage mothers are presented in Table 4. Chi-square tests and mean comparisons were performed to determine if groups were equivalent on the following demographic variables: child's gender, ethnicity, and daycare activities during the time of study participation. Intervention and control groups were equivalent on all child variables.

TABLE 4. Demographic Characteristics for Young Children of Teenage Mothers

Characteristic	χ^2 (df)	Intervention (n=16)	Control (n=16)
Child's Gender	0.00 (1)		
Boy		21.9% (7)	21.9% (7)
Girl		28.1% (9)	28.1% (9)
Child's Ethnicity	6.5 (8)		
African-American		3.1% (1)	6.3% (2)
American Indian		0% (0)	3.1% (1)
Asian-American/Pacific Islander		3.1% (1)	0% (0)
European-American		18.8% (6)	9.4% (3)
Latina(o)/Hispanic		12.5% (4)	21.9% (7)
European & African-American		3.1% (1)	6.3% (2)
European-American & Latina(o)		3.1% (1)	3.1% (1)
Native American & Latina(o)		3.1% (1)	0% (0)
Other Ethnic Combination		3.1% (1)	0% (0)
Daycare Activities	0.8 (1)		
Yes		43.8% (14)	37.5% (12)
No		6.3% (2)	12.5% (4)

Descriptive statistics for parent-child dyads are presented in Table 5. Chi-square tests and mean comparisons were performed to determine if groups were equivalent on the following demographic variables: evening activities and total hours spent together. Intervention and control groups were equivalent on all parent-child dyad variables.

TABLE 5. Demographic Characteristics of Parent-Child Dyads

Characteristic	χ^2 (df)	Intervention (n=16)	Control (n=16)
Evening Activities	1.6 (1)		
Books are mentioned		34.4% (11)	43.8% (14)
Books are not mentioned		15.6% (5)	6.3% (2)
Hours Spent Together			
M		8.8	10.2
SD		5.04	6.30

Mean comparison tests were conducted to determine whether there were significant differences between participants at group levels on demographic variables. There were no significant differences in the amount of mother's siblings in the family. The groups were comprised mostly of Latina parents and Latina(o) children as well as White/European-American families. These proportions were representative of the teenage parent schools in the Portland metropolitan area.

Design

A between-subjects, pre-test/post-test, wait-list control group analysis of covariance design was used to examine the effects of an interactive reading intervention on early literacy development and positive parenting interactions for young children of teenage mothers. Parent-child dyads participated in one administration of baseline data collection and 6 weeks of intervention. The independent variable was interactive reading while the dependent variables were early literacy development and positive parenting interactions. Parent-child dyads were randomly assigned to an intervention or control group, stratified by the young child's age. Young children were given a pretest measure of early literacy development. Analysis of variance (ANOVA) was used to determine if there were statistically significant differences between groups on pretest measures and status variables (e.g., ethnicity, age of child, age of caregiver). Groups were equivalent at pretest on all variables. This between-subjects design increases internal validity and generalizability of the results (Cook & Campbell, 1979). Thus, differences in the dependent measures (early literacy development and positive parenting interactions) can be attributed clearly to the interactive reading intervention.

Figure 1 illustrates the research hypotheses examined in this study. This study examined the short-term effects of an interactive reading intervention designed to facilitate early literacy development and positive parenting interactions for young children of teenage mothers. This school-based, interactive-reading intervention involved reading activities and strategies that were designed to support storybook reading between parent-child dyads. These school-based activities involved teenage mothers reading aloud to their young children for 15 minutes at least 2 days per week. An aggregate measure of early literacy development was obtained from the Early Literacy Development Observation Assessment (ELDOA) and the Stony Brook Family Reading Survey. An aggregate measure of positive and negative parenting behaviors was obtained from the Stony Brook Family Reading Survey, the Dyadic Parent-Child Interaction Coding System (DPICS), and the Coder Impression Rating Scale (COIMP), while pre and post-test scores were used to examine the effects of an interactive reading intervention on engaged time. Treatment integrity data were also reported.

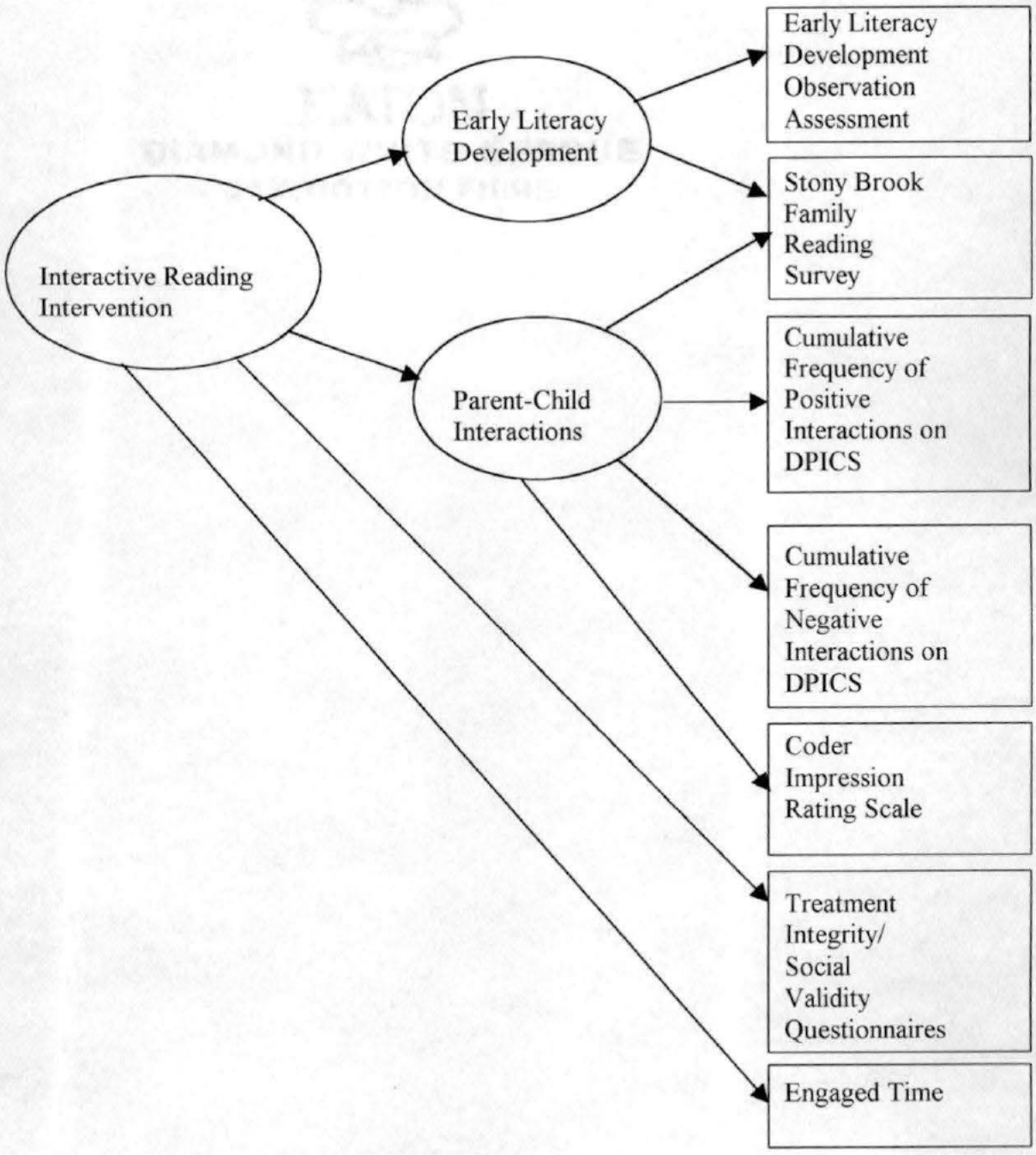

FIGURE 1. Model of research hypotheses and measurement model.

Independent Variable

To examine the effects of an interactive reading intervention on early literacy development and positive parenting interactions, teenage mothers in the Interactive Reading Intervention (IRI) group were instructed to read to their young child from selected reading materials 2 days per week, 15 minutes per session, for six consecutive weeks. The intent of the IRI was to: (a) provide support and encouragement to teenage mothers by trained coaches to use the tools successfully, and (b) examine the amount of time a teenage mother spent interacting with her child during interactive reading. The IRI occurred with parent-child dyads at each alternative high school site.

Interactive Reading Intervention Group (Intervention)

The interactive reading intervention consisted of teenage mothers reading storybooks aloud to their young child in a quiet place 2 days per week, 15 minutes per session. Once parent-child dyads were assigned to groups, the interactive reading intervention was organized and managed at each school site. There were a total of five school sites/alternative education settings. Following standardized procedures including guided practice, the IRI group was provided with books necessary to engage in an interactive read-aloud session, proven strategies for read-aloud interactive sessions, as well as encouragement and support from coaches to use the tools successfully. The intervention phase continued for six weeks. Reading aloud provides a positive reading

role model for young children, introduces them to new information and a variety of outside experiences, and helps increase the length of time in which young children can remain actively engaged in an activity (Trelease, 1989).

A key goal of the interactive reading intervention was for the teenage mother to help her young child participate actively in the telling of the story. Another goal was to have the teenage mother become the listener, the questioner, and the audience for the child. The IRI was designed to lay the foundation for formal reading and to help the child build their print awareness, as they become actively involved with books. Moreover, positive parenting interactions were expected to increase over time.

To demonstrate early literacy development and positive parenting interactions between young children and their teenage mothers, the IRI included reading strategies for making read-aloud sessions meaningful and mutually enjoyable for teenage mothers and their young child, storybooks designed specifically for toddlers, videotaped recordings of the interactive reading sessions, a social validity questionnaire, and a treatment integrity questionnaire.

The IRI consisted of general themes, materials, and strategies that are important to (a) introduce the young child to new information and a variety of experiences; (b) help the young child become familiar with a variety of books; (c) increase the amount of time in which the young child can remain actively engaged in an activity; (d) encourage the ways in which a young child will learn to attend to the sound structure of language, repetition and rhyme, and poetry in motion; and (e) promote the young child's active, concrete involvement in the story. The strategies in Table 6 were used to show teenage

mothers how to share an experience of reading aloud to their young child. These strategies were made accessible to parent-child dyads in a colorful pamphlet at the beginning of the first reading session of that week. Pamphlets were distributed only once per week, at the beginning of each week. Coaches were responsible for distribution of these weekly strategies to the IRI group only. Storybooks used for IRI are included in Appendix D.

TABLE 6. Strategies for Interactive Reading Intervention

Materials	Sample Strategies
Theme 1: Books and young children	
Some baby books (e.g., books made of cardboard or cloth with flaps to lift and holes to peek through)	1. Include books that feature picture and names of familiar objects. 2. As you read, point out objects in the pictures and make sure your child sees all the things that are fun to do with books. 3. Vary the tone of your voice, sing nursery rhymes, bounce your knee, make funny faces, do whatever special effects you can to stimulate your child's interest. 4. Allow your child to touch and hold cloth and sturdy cardboard books. 5. When reading to your child, be brief but read often.
Theme 2: R and R: Repetition and Rhyme	
Books with repeated phrases (i.e., short rhyming poems)	1. Pick a story with repeated phrases or a poem you and your child like. 2. Read slowly, with a smile or a nod, and let your child know you appreciate their participation. 3. As children grow more familiar with the story, pause and give them time to "fill in the blanks."
Theme 3: Poetry in Motion	
Poems that rhyme, tell a story, and are written from a child's point of view.	1. Read a poem slowly to your child, and bring all your dramatic talents to the reading. 2. If there is a poem your child is particularly fond of, suggest acting out a favorite line. Be sure to award such efforts with delighted enthusiasm. 3. Then suggest acting out a verse, stanza, or the entire poem. 4. Ask your child to make a face of the way the character in the poem/story is feeling. Remember that facial expressions bring emotion into the performer's voice. 5. Applause is always nice!

Wait-List Control

Subjects assigned to the wait-list control group were informed prior to commencement of pretest measures that they would be assigned to this group. Participants assigned to the wait-list control group were asked to wait six weeks, until the first group finished the research program. Pretest and post-test measures were administered to the wait-list control group at the same time they were administered to the interactive reading intervention group. Upon completion of the interactive reading group's intervention activities, subjects assigned to the wait-list control group were offered the same services as the interactive reading intervention group. Although parent-child dyads assigned to the wait-list control group were offered the same services as the interactive reading intervention, all of the teenage mothers declined to participate due to the end of the academic year and conflicts with summer plans. It is important to note that, contrary to the intent of the research design, the wait-list control group did not receive the intervention after the first group completed the interactive reading intervention. Thus, the wait-list control group will be identified in this study as a control group.

Dependent Measures

The five dependent measures are divided into 2 categories. Early literacy development was assessed by selected items on the Early Literacy Development Observation Assessment (ELDOA) and the Stony Brook Family Reading Survey.

Positive parenting interactions were assessed by videotaped recordings of the interactive reading intervention sessions, selected items on the Stony Brook Family Reading Survey, cumulative frequency of positive parent-child interactions on Dyadic Parent-Child Interaction Coding System (DPICS), cumulative frequency of negative parent-child interactions on DPICS, and a Coder Impression Rating Scale (COIMP).

Early Literacy Development Observation Assessment

The Early Literacy Development Observation Assessment (ELDOA) is an assessment tool that was developed for this study to assess young children's awareness of print concepts. The ELDOA assesses knowledge of important print concepts that facilitate early print acquisition expected of younger children. Examples of these behaviors include (a) pointing to the pictures in the book, (b) holding the book right side up, (c) opening the book, and (d) turning the pages of the book. The ELDOA consists of three parts and involves having a single observer code the videotaped interaction and indicate whether or not the behavior occurred during a particular segment.

For example, a coder was instructed to watch the first five minutes of the 15-minute videotaped interaction. The first 5 minutes of each (pre- and post-test assessment) tape consisted only of a teenage mother reading with her child, without the reading prompts given to the parent by the coach. Once the 5-minute segment was observed by the coder, the coder would stop the videotape and indicate whether or not the behavior occurred during that observation, beginning with the left hand column, "before prompt."

For each column, the coder was asked to rate the questions based on the following scale: 0 = no opportunity, 1 = no, 2 = yes. Once part one of the ELDOA instrument was complete, the coder would continue to watch the next five minutes of the 15-minute videotaped interaction, where coaches were used in this part of the study. Coaches were used during the pre – and post-test assessments only to prompt the behaviors between the young child and their teenage mother and provide structure to the activity. An example of the script coaches used during the assessments is included in Appendix B. Again, coders would complete the section marked "when prompted" and move onto the last section of the ELDOA, "after prompt." Again, the main idea for this instrument was to assesses knowledge of important print concepts of younger children "before, when, and after prompted" by a coach.

One week prior to intervention implementation, baseline ELDOA data were collected on all young children participating in the study. Inter-rater reliability between research assistants/coders who coded the tapes was calculated at 90%. An example of the instrument is included in Appendix G.

Stony Brook Family Reading Survey

All parents were asked to complete an 8-item multiple choice survey obtained from the Stony Brook Interactive Family Reading Survey (Whitehurst, 1992). This family reading survey was comprised originally of 52 multiple-choice questions which asked caregivers to provide information about the educational experiences of themselves

and their child, and to report the types and frequency of educational activities they engaged in with their child. For this study, a subsection of 8 questions were administered at pre and post-test to describe teenage mothers' interactive reading activities with their child.

These 8-items are designed to assess (a) child-focused reading activities, such as the number of days per week a caregiver reads to a child, the number of minutes of reading per day, and the age at which the caregiver began reading to the child; (b) resources available, such as the number of books in the home; and (c) general attitudes about reading, such as the child's enjoyment, and the caregiver's own reading habits. Payne and colleagues (1994) used this group of questions in a study of the relations between family literacy activities and a variety of measures of child development. In the Payne et al. study, this scale was significantly positively correlated (.43) with children's early vocabulary development as measured by the PPVT-R and EOWPVT-R. A copy of the items from the Stony Brook Family Reading Survey is included in Appendix E.

Dyadic Parent-Child Interaction Coding System

The Dyadic Parent-Child Interaction Coding System (DPICS) was designed for use in assessing the quality of parent-child social interactions. This coding system was specifically designed to: (a) provide an observational measure of parent and child behaviors as an adjunct to parenting skills; (b) serve as a baseline pre-treatment assessment of behaviors occurring in dyadic family interactions; (c) provide a measure of

ongoing progress that focuses on changing general parent-child interaction patterns; and (d) serve as a behavioral observation measure of treatment outcome (Eyberg, Robinson, & The Parenting Clinic, 1994). The DPICS was constructed to provide a comprehensive, yet manageable coding system for use by the observer. This system provides detailed information without requiring elaborate recording equipment, auxiliary coders or lengthy observation periods. To assess reliability, Eyberg et al. (1994) report using Pearson product-moment correlations between raters for each code category. Pearson product-moment correlations were obtained, and ranged from .735 to .999. Inter-rater reliability was also assessed by correlating the frequency of each behavior during observations. The mean reliability for parent behaviors was .91 (range = .67 to 1.0) and for child behaviors was .92 (range = .76 to 1.0).

For the purpose of this study, fourteen out of twenty four possible standard parent and child behavior categories were selected and coded during an observation of each situation. Partial-interval time sampling recording was used to record behaviors that occurred in fleeting moments. More specifically, observation coding resulted in the total frequency of each behavior per 15-second interval. Behaviors were coded alternately between (a) successive intervals for caregiving variables and (b) successive intervals for child variables. A Data Recording Sheet was used to record all data during a 10 to 20 minute parent-child interaction by a single observer (see Appendix H). Behaviors were coded by making a tally mark in the appropriate space on the recording sheet each time the behavior occurred. For purposes of this study, parent behaviors were split into the following categories: (a) direct command, (b) language facilitation, and (c) positive

encouragement. This categorization helped to address the research questions and identify specific areas that contribute to early literacy skills.

Partial-interval time sampling recording also contributes to utility by providing an account of all behaviors. Finally, the structure of the coding situation allows both the parent and child to proceed naturally under varying degrees of parent control, thus maximizing the possibility of observing interactions in problem families. One observation of the parent-child social interactions using DPICS was conducted for pre- and post-test. Inter-rater reliability was established in this study at the rate of 90%.

TABLE 7. Observational Assessment Categories and Variable Labels for Direct Command on DPICS

Parent Behaviors	Description
Direct Command	A direct command is a clearly stated order, demand, or direction in declarative form. The statement must be sufficiently specific as to indicate the behavior that is expected from the child.

TABLE 8. Observational Assessment Categories and Variable Labels for Language Facilitation on DPICS

Parent Behaviors	Description
Statement	A statement is a declarative sentence or phrase that gives an account of the objects or people in the situation or the activity occurring during the observation.
Questions	A question is a comment expressed in question form. It gives an account of the objects or people in the situation or the activity occurring during the interaction. This question follows a child's activity rather than attempting to lead it.
Acknowledgement	An acknowledgement is a brief verbal response to the child's verbalization or behavior that contains no manifest content other than a simple yes or no response to a question, or that communicates recognition of something the child has said or done, with no descriptive content.

TABLE 9. Observational Assessment Categories and Variable Labels for Positive Encouragement on DPICS

Parent Behaviors	Description
Unlabeled Praise	An unlabeled praise is a nonspecific verbalization that expresses a favorable judgment on an activity, product, or attribute of the child.
Labeled Praise	Labeled praise is any specific verbalization that expresses a favorable judgment upon an activity, product, or attribute of the child.
Physical Positive	A physical positive is any bodily contact between parent and child, which is neutral or positive.

TABLE 10. Observational Assessment Categories and Variable Labels for Negative Parenting Behaviors on DPICS

Parent Behaviors	Description
Physical Negative – Parent	A physical negative-parent is a parent-initiated touching of the child that inflicts pain, restrains the child, forces or pulls the child, or accompanies a critical remark.
Critical Statement	A critical statement is a verbalization that finds fault with the activities, products, or attributes of the child. Blame statements and "guilt-tripping" statements are coded as critical statement.
Negative Command	A negative command tells the child not to do something. It is a type of critical statement, but conveys more specific behavioral information.
Parent Ignore	Deviant behavior is ignored when the parent remains silent, maintains a neutral facial expression, avoids or breaks eye contact with the child and makes no movement in response to the child, except to turn away. It must last a minimum of five seconds to be coded as an obvious ignore.

TABLE 11. Observational Assessment Categories and Variable Labels for Child Responses to Commands on DPICS

Child Responses to Commands	Description
Compliance	Compliance occurs when the child obeys, begins to obey, or attempts to obey a direct or indirect parental command.
Noncompliance	Noncompliance occurs when the child does not obey a direct or indirect parental command, even if the coder thinks the child may not have heard the command.
Noncompliance due to time	Noncompliance due to time occurs when the child is not given an adequate chance to obey or disobey a direct or indirect parental command because the time for the interval expires.

Coder Impression Rating Scale

The Coder Impression Rating Scale (COIMP) was designed for use in assessing family interaction dynamics. In particular, the COIMP was instrumental because (a) it underscores the need to take an ecological approach toward studying social development, as well as prevention, considering individual family strengths and weaknesses; (b) it allows the opportunity to study the process of measurement in more detail; and (c) it

provides a direct link to intervention research (Dishion, Skaggs, & Kavanagh, 1997). In the Dishion et al. study, internal consistency on the scores reported was above .70.

For purposes of this study, coders watched the videotapes of parent-child dyads and made ratings on sixteen standard parent-child behavior categories at the conclusion of the observation. Coders were asked to rate their impressions of parent-child interactions, without training for inter-rater agreement. Hence, inter-rater reliability was not obtained for this measure. In addition to ratings obtained on the sixteen standard parent-child behavior categories, the second section of the COIMP scale asked coders to rate questions related directly to the videotaped observations. Without the coder's knowledge, these questions pertained directly to teenage mothers' intervention implementation. Finally, the third section asked coders to rate their impression of the overall parent-child relationship, influences of parents' behavior in front of the camera, and overall enjoyment of the reading activity between parent and child. Ratings for the entire COIMP scale were based on a scale from 1 – 9, with 5 indicating positive skill. A copy of the items is included in Appendix I.

Videotaped Recordings of Interactive Sessions

Each video recorded read-aloud activity session was coded for frequency, duration, and integrity of implementation. At the beginning of each interactive reading session, coaches recorded the date and time of the session, the materials being used, as well as the 15-minute interactive session. To maintain confidentiality, tapes were coded

by a family number and locked in a secure file cabinet. At the end of each week of data collection, the student investigator collected the videotapes. Undergraduate students at the University of Oregon, as opposed to the coaches, were trained to record progress of early literacy development, cumulative frequency of positive and negative parent-child interaction data, and cumulative engaged time in the reading activities. For purposes of this study, these students will be recorded as coders. Coaches (instead of coders) in this study used this arrangement to prevent observer-bias of the videotaped interactions. To ensure a blind effect while coding the videotapes, videotapes were randomly assigned to the coders. Hence, while coding the videotapes, coders were blind to the treatment and control conditions of the parent-child dyads.

Engaged Time

A measurement tool for engaged time was developed for this study as a way to examine the effects of the interactive reading intervention. Essentially, coders were asked to time the child's engagement in the reading activity shared with their teenage mother. Prior to training on this measure, it was necessary to operationalize a child's "engagement" in a reading activity and establish reliability with this definition. Examples of engagement included (a) a child talking about or looking at the pictures in the book; (b) a child pointing to pictures in a book; (c) a child pretending to read the book to the mother; (d) a child asking questions that pertained to the book; and/or (e) a child demonstrating appropriate use of the book (e.g., turning the pages, opening the book,

closing the book). Non-examples of engagement included: (a) a child looking away from/not interested in a book within a 3-second time period; (b) a child walking away from the book; (c) a child playing with a toy, presenting a tantrum, or crying; and/or (d) a child demonstrating inappropriate use of a book (e.g., tearing, throwing, ripping).

Once coders were firm on the criteria for engagement (see Appendix J), duration recording was used to record engaged time during a single, parent-child dyad videotaped observation. More specifically, a duration recording measure was used to record the length of time engagement occurred during a single observation. In addition to a data-recording sheet, stopwatches were used consistently between coders to record all data during a 10 – 20 minute parent-child interaction by a single observer. Coders reported minutes and seconds of engaged time and total time of the observation on the data-recording sheet. Coders did not report stopwatch malfunctions during observations. Coders were randomly assigned tapes weekly and asked to time the entire parent-child dyad tape, without knowledge of pre and post-test segments. Weekly meetings with coders helped to maintain inter-rater reliability and consistency with the definition of engagement. Inter-rater reliability was obtained at 92%. It is also important to note that these coders were different from coders trained on the other dependent measures. This strategy helped to diminish observation fatigue and it also provided an objective observation of parent-child dyad interactions.

Interobserver Reliability of Dependent Measures

Interobserver reliability checks were conducted for 25% of all sessions. Agreement was calculated by dividing the total number of agreement intervals by the total number of possible agreement intervals in the observation period, multiplying by 100. Research assistants were required to meet a criterion of 85% agreement for three consecutive practice sessions before they began to code actual study data. If agreement fell below 85%, observation procedures were reviewed and practiced.

Treatment Integrity Questionnaire

Parent-child dyads that were assigned to the interactive reading intervention only were monitored throughout the 6-week intervention phase of the study. The questions asked on the treatment integrity questionnaire were designed to collect information similar to the Stony Brook Family Reading Survey, on an ongoing basis. Teenage mothers were asked to provide the following information: (a) the number of read-aloud sessions in which they engaged during the week, (b) the length of time for each session, (c) the number of days in which a read-aloud session occurred during the week, and (d) the overall perspective of the sessions with their child during the week.

Responses to questions regarding the frequency and duration of interactive reading behavior were coded using a 7-point Likert scale ranging from not at all (1) to very much (7). To estimate the degree to which the interactive reading intervention was implemented as designed, ratings regarding frequency and duration were averaged over

the 6 weeks of intervention. A copy of the items from the Treatment Integrity questionnaire is included in Appendix F.

Social Validity Questionnaire

A Social Validity Questionnaire was developed as part of the Treatment Integrity Questionnaire for this study to assess teenage mothers' perceptions regarding the level of fun they had interacting with their child during the week. This questionnaire asked the teenage mothers to rate their perceptions of the helpfulness and usefulness of the intervention, the ease with which the intervention was implemented, and the enjoyability of the intervention. Ratings are based on a 7-point Likert scale ranging from not at all (1) to very much (7). A copy of the items from the Social Validity questionnaire is also included in Appendix F.

Data Collection

Parent-child dyads in both intervention and control groups were assessed on three pre-test measures during Weeks 1 and 2. During the intervention phase, Weeks 3 through 8, coaches visited families at school sites and provided them with materials necessary for the activities. Teenage mothers were asked to identify a time for the observation during which they were not preparing for a meal and were not preparing for errands.

For six weeks, every parent-child dyad in the IRI group was given two books per week, one book per session. Each parent-child dyad was given the same book for that

session and instructed to share in a read-aloud session with their child. The Student Investigator selected books suitable for young children that allowed them to participate, and that would also be enjoyable for the teenage mother. The storybooks were all made of cardboard and some had flaps to lift and holes to peek through. Moreover, the storybooks included illustrations and words ranged from few words to more words by the end of the interactive reading intervention. The coaches left the books with the parent-child dyad after each session. By the end of the intervention phase, each parent-child dyad had an opportunity to accumulate 16 new storybooks.

Parent-child dyads in the IRI group were instructed to engage their child in a "read-aloud" activity. Prior to beginning the first session of each week, coaches distributed pamphlets to parent-child dyads that included strategies, which were designed to show teenage mothers how to share an experience of reading aloud to their young child. The same strategies were distributed each week. Although coaches were instructed to answer the fewest questions possible about the actual interactive reading session and their performance with their child, coaches were trained to set up the reading environment for teenage mothers and help prepare teenage mothers to engage in a reading session with their child with the materials necessary. To remain as unobtrusive as possible, coaches left the room while parent-child dyads engaged in their reading activity. Coaches used stopwatches to facilitate and monitor a 15-minute reading session. If parent-child dyads were finished before the 15 minutes, they were instructed by coaches to "do what you would normally do with your child." Parents were not redirected back to their pamphlets.

As cited earlier, coaches were not responsible for coding the videotaped sessions. The coach, however, met with the Student Investigator to exchange videotapes and turn in questionnaires at the end of each week. Following intervention, post-tests were administered for all dependent measures. Data collection procedures for the study are detailed in Tables 12 and 13.

TABLE 12. Data Collection for Interactive Reading Intervention Group

	Time		
Measure	Weeks 1 - 2	Weeks 3 - 8	Week 9 - 10
Teenage Parent Interview	One administration		
Early Literacy Development Observation Assessment	One administration		One administration
Stony Brook Family Reading Survey	One administration		One administration
DPICS	One observation		One observation
Materials to Parent-Child Dyads		Videotapes, storybooks, and IRI strategies	
Treatment Integrity Questionnaire from Teenage Mothers		Once per week	

TABLE 13. Data Collection for Wait-List Control Group

	Time		
Measure	Weeks 1 - 2	Weeks 3 - 8	Week 9 - 10
Teenage Parent Interview	One administration		
Early Literacy Development Observation Assessment	One administration		One administration
Stony Brook Family Reading Survey	One administration		One administration
DPICS	One observation		One observation

Training Coaches

A checklist of all aspects and steps of baseline and intervention conditions was developed. Four coaches, who were staff from a community agency, were hired by the Student Investigator to collect weekly observational data. Two weeks prior to the beginning the investigation, the coaches received four days of systematic training in which data collection procedures were described. The Student Investigator also modeled a method for setting up the reading environment for teenage mothers and preparing teenage mothers to engage in a reading session with their child. Procedures used for the interactive reading sessions are included in Appendix C. Also, coaches were trained and

provided scripts to use the prompts necessary for the pre and post-test assessments of the Early Literacy Development Observation Assessment (ELDOA). Scripts used for the pre and post-test assessments of ELDOA are also included in Appendix B. Coaches were then provided an opportunity to practice methods of communicating with teenage mothers until they felt comfortable. This training familiarized coaches with the use of the procedures necessary to implement and administer activities within the study.

Maintenance of Confidentiality

Standard practices for maintaining participant confidentiality were employed. To help ensure privacy, all project staff signed a statement of confidentiality (see Appendix B). Data was coded by a family identification number, and data with name/code sheets were maintained in a lockable filing cabinet in an office. Access to family data was restricted to the student and faculty investigator. Parental permission was secured prior to participation. Additionally, standard 'human subjects protection' was in effect, as required by the Institutional Review Board of the University of Oregon.

Data Analysis

To answer the research questions, data were analyzed on a group level to examine the effects of an interactive reading intervention on early literacy development and positive parenting interaction for young children of teenage mothers. At the group level,

analysis of variance (ANOVA) and analysis of covariance (ANCOVA) were used to examine whether reliable differences ($p < .05$) between groups on mean levels of early literacy development, positive and negative parenting interactions, and engaged time existed. The dependent variables (early literacy development and positive parenting interaction) were measured by (a) videotaped recordings of interactive sessions; (b) cumulative frequency of positive and negative parent-child interactions; (c) the Early Literacy Development Observation Assessment (ELDOA); (d) Stony Brook Family Reading Survey, and (e) Coder Impression Rating Scale. An important strength of the research design was the ability of the measurement and data analysis procedures to examine the effects of the interactive reading intervention.

Summary

This chapter presented procedures for examining the relationship between an interactive reading intervention on early literacy development and positive parenting interactions for young children of teenage mothers. Descriptions of the 32 participating parent-child dyads and their assignment to groups were outlined. The independent (interactive reading intervention) and dependent (early literacy development and positive parenting interactions) variables evaluated in this study were described and a description of the between and within subjects, experimental design was described.

CHAPTER IV

RESULTS

The purpose of this chapter is to report the relation between the independent variable, interactive reading intervention and the dependent variables, early literacy development and positive parenting interactions. The results of the study are presented in two sections. First, descriptive statistics for the dependent measures used in the study, including early literacy development, parent interactions with their young child, and total duration of engaged time during the interactive reading intervention are presented. Second, data are analyzed to determine whether the interactive reading intervention influenced early literacy development, positive parenting interactions with their child, and duration of time engaged during the interactive reading intervention. Research Questions 1 and 2 examined the effects of an interactive reading intervention on early literacy development and positive parenting interactions at a group level of analysis. Research Question 3 examined the effects of an interactive reading intervention on the amount of engaged time at a group level of analysis.

Descriptive Statistics

In this section, descriptive statistics of the sample are presented. To examine the relation between early literacy development, positive and negative parenting behaviors, and engaged time, a within groups correlation analysis between pre and post-test was examined. A correlation analysis between variables was also calculated to look at possible trends between pre and post-test outcomes, relevant to the covariate. Table 14 presents correlations between the resulting standardized scores of pre and post-test variables for parent-child dyads randomly assigned to the interactive reading intervention and wait-list control group. Across all variables, the pre-post test correlation was lower for the intervention groups than for the control group.

TABLE 14. Correlations Between Pre and Post-Test Measures of Positive Parenting, Negative Parenting, Early Literacy Development, and Engaged Time of Families by Intervention Group

Variables	Control (n = 16)	Intervention (n = 16)
Positive Parenting	.54*	.50*
Negative Parenting	.84**	.41
Early Literacy	.79**	.52*
Engaged Time	.77**	.42

* $p < .05$.

** $p < .01$.

Results show a high correlation between pre and post-test variables, with moderate to strong correlations reported across variables. Of the pre and post measures, negative parenting, early literacy development, and engaged time presented the highest magnitude of correlations, particularly for parent-child dyads randomly assigned to the control group. Meanwhile, moderate correlations for positive parenting and early literacy development were presented for parent-child dyads randomly assigned to the intervention group. For parent-child dyads in the control group, positive parenting was correlated moderately while negative parenting and engaged time did not present significant correlations for parent-child dyads in the intervention group.

Correlations between positive parenting, negative parenting, early literacy development, and engaged time were also examined for pretest measures only. Table 15 illustrates the degree of relation between pretest variables, prior to intervention implementation, for all groups.

TABLE 15. Correlations Between Positive Parenting, Negative Parenting, Early Literacy Development, and Engaged Time for Pretest Measures

Variables	Positive Parenting	Negative Parenting	Early Literacy
Negative Parenting	-.48**		
Early Literacy	.61**	-.53**	
Engaged Time	.60**	-.58**	.37*

* $p < .05$.

** $p < .01$.

Under the positive parenting category, a high correlation was present for early literacy development and engaged time. At pretest, negative parenting had a negative correlation with positive parenting. Negative correlations were presented for early literacy development and engaged time under the negative parenting category. However, there was a high correlation present for these variables. Finally, early literacy and engaged time were correlated positively at pretest.

Means and standard deviations of group on the dependent measures used in the study are presented in Table 16. Although control group scores are consistently higher across all measures at pretest, the differences are not statistically significant. The interactive reading intervention appeared to contribute to improved outcomes of early literacy skills, but only for young children who demonstrated low early literacy skills at pretest. While positive parenting behaviors seemed to increase for teenage mothers randomly assigned to the interactive reading intervention, it appears that positive parenting behaviors decreased slightly for teenage mothers randomly assigned to the control group. Moreover, negative parenting behaviors seemed to decrease slightly for teenage mothers randomly assigned to the interactive reading intervention while negative parenting behaviors seemed to increase for teenage mothers randomly assigned to the control group. However, differences between groups at post-test were small. It is important to note, however, the control group demonstrated outliers on negative parent behaviors, which may have inflated their scores at post-test. Finally, the rate of engaged time increased for parent-child dyads randomly assigned to the interactive reading intervention at post-test, when compared to parent-child dyads in the control group.

TABLE 16. Descriptive Statistics for Early Literacy Development, Positive and Negative Parenting Behaviors, and Engaged Time

Measure	Pre-Test M	Pre-Test SD	Post-Test M	Post-Test SD
	Intervention (n = 16)			
Early Literacy Development	-0.10	0.73	0.07	0.46
Positive Parenting Behaviors	-0.24	0.58	-0.11	0.66
Negative Parenting Behaviors	0.06	0.56	-0.04	0.51
Engaged Time	404.00	143.59	532.81	186.26
	Control (n = 16)			
Early Literacy Development	0.09	0.70	-0.08	0.90
Positive Parenting Behaviors	0.24	0.80	0.11	0.56
Negative Parenting Behaviors	-0.04	0.80	0.06	0.72
Engaged Time	525.38	184.54	492.50	242.24

Research Question 1: Early Literacy Development

Research Question 1 asked, "Does an interactive reading intervention increase a young child's early literacy development?"

To examine this question, an aggregate measure of early literacy skills was obtained from the Stony Brook Family Reading Survey and the Early Literacy Development Observation Assessment (ELDOA). An aggregate measure of early literacy skill was obtained to provide a single focused test of the effect of an interactive reading intervention on young children's early literacy.

First, raw scores for the Stony Brook Family Reading Survey and ELDOA were obtained. Two questions from the Stony Brook Family Reading Survey were identified as representing early literacy development. The Stony Brook Family Reading Survey questions were rated on a 1 – 4 scale and were summed. Then, the overall score obtained from the ELDOA was used to obtain an estimate of early literacy skill. The overall ELDOA score was obtained by adding one point for each positive skill (e.g., holding the book right side up, pointing to pictures in the book, turning the pages) and subtracting 1 or 2 points for each negative behavior (demonstrating inappropriate use of the book, disinterested in the book, picking up the toy instead of the book when prompted). Second, raw scores from the Stony Brook Family Reading Survey and ELDOA were each standardized, with a mean of 0 and a standard deviation of 1. Third, the resulting standardized scores were averaged and analyzed.

The resulting aggregate estimate of early literacy skill was the dependent variable in a one-way analysis of covariance (ANCOVA), with group (intervention or control) as the between-subjects factor and pre-early literacy as the covariate. The results of the equal regression ANCOVA are summarized in Table 17. A first assumption in ANCOVA is that groups were equivalent at pretest. That is, the groups are not different from each other prior to intervention. The goal of analysis of covariance is to determine the amount of variability in the dependent variables attributable to intervention effect alone. Analysis of covariance designs help to reduce the total variability by removing the variability contributed by the covariate. When groups differ initially on the covariate, difference in adjusted means on the dependent variables could be due to either measurement error or

treatment effects (Cook & Campbell, 1979). And, measurement error is always present. When groups are equivalent on the covariate, group differences can be attributed more confidently to treatment effects. At pretest, group means on early literacy were quite close and not statistically different. A second assumption of ANCOVA is that all groups have an equal relationship with the covariate. In other words, the regression lines of each group on the covariate are parallel (i.e., slopes are equal). When regression lines are not equal, an interaction between pre and post-test performance is indicated. This assumption was examined in an unequal slopes ANCOVA model, as an interaction between pre-early literacy and group.

TABLE 17. ANCOVA Summary Table for Early Literacy Skills

Source	df	SS	MS	F
Pre-Early Literacy	1	6.85	6.85	27.81*
Group	1	0.57	0.57	2.33
Pre-Early Literacy x Group	1	1.78	1.78	7.25*
Error	28	6.89	0.25	
Total	31	15.41		

Note. Type III or unique sums of squares are used so sums of squares do not sum to total.

* $p < .05$.

The interaction effect of group by pre-early literacy skills was significant, $F(1, 28) = 7.25$, $p < .05$. Consistent with conventional AOV logic, main effects of group and pre-

early literacy were not examined further due to the significant interaction effect. The interaction between group and pre-early literacy skills is illustrated in Figure 2. These results mean that level of pre-early literacy skills moderated the impact of the intervention. In other words, this significant interaction effect means that the impact of the intervention depends upon the level of early literacy scores displayed by the children at pretest. Depending on the level of pretest early literacy skills, the interactive reading intervention affected early literacy skill differently. For young children of teenage mothers who scored low on early literacy skills at pretest, the interactive reading intervention contributed to improved outcomes. However, for children who demonstrated higher early literacy skills at pretest, there was little or no effect of the interactive reading intervention.

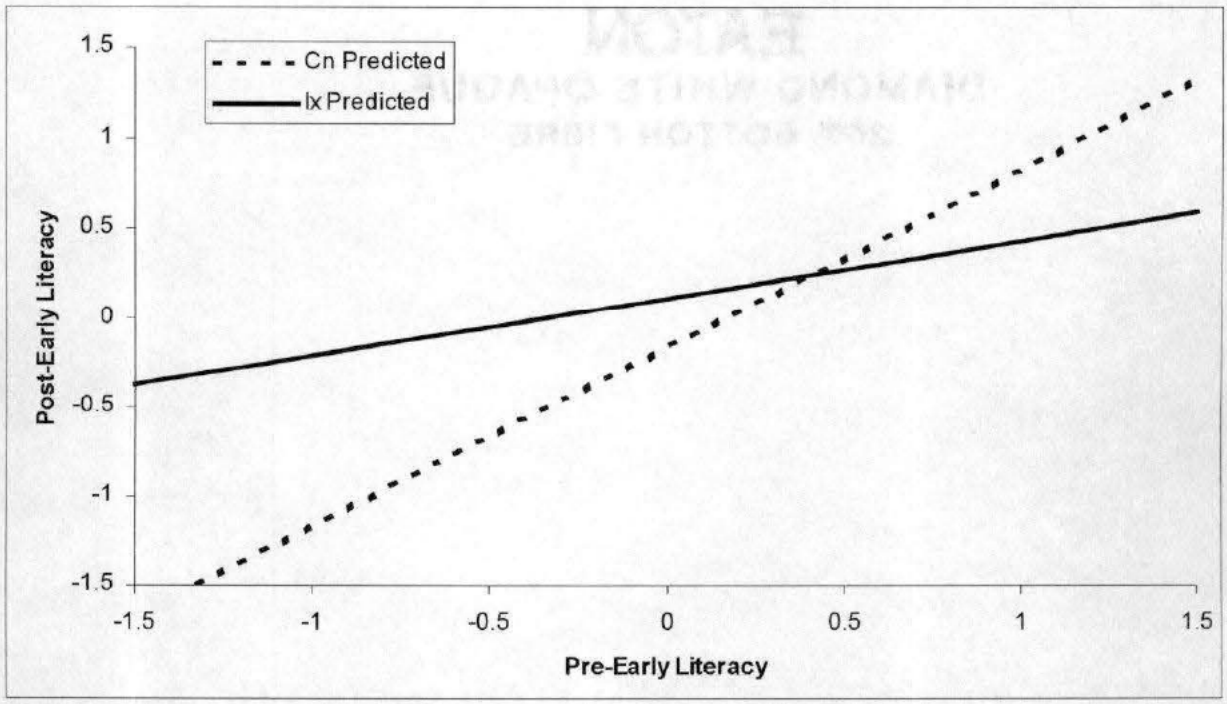

FIGURE 2. Predicted scores of early literacy skills for each level of pre-early literacy.

As illustrated in Figure 2, predicted scores on post-test depended on pre-early literacy and group (intervention or control). For young children who were below –1.0 SD on pre-early literacy skills, the predicted post-test early literacy skills would be –0.4 SD for the intervention group and –1.2 SD for the control group. This would be a substantial positive effect attributed to the interactive reading intervention. In contrast, for young children who were above +0.5 SD at pretest, the predicted post-test outcome would be about +0.2 SD for intervention and +0.3 SD for control. Thus, there was little or no effect for young children who scored higher at pretest.

The results of Question 1 did support the hypothesis that an interactive reading intervention can impact the early literacy skills for young children of teenage mothers.

Consistent with the research hypothesis, the intervention group obtained higher early literacy skills, but only for young children who demonstrated low early literacy skills at pretest. For young children of teenage mothers who demonstrated comparatively high early literacy skills at pretest, however, little or no difference in groups was predicted. Hence, the interactive reading intervention had little or no effect for young children of teenage mothers who demonstrated high early literacy skills at pretest.

Research Question 2: Positive Parenting Interactions

Research Question 2 asked, "Does an interactive reading intervention increase positive parenting interactions between young children and their teenage mothers?"

To examine this question, an aggregate measure of positive parenting behaviors was obtained from the Stony Brook Family Reading Survey, the Dyadic Parent-Child Interaction Coding System (DPICS), and the Coder Impression Rating Scale (COIMP). An aggregate measure of positive parenting behaviors was obtained to provide a single, focused test of the effect of an interactive reading intervention on positive parenting interactions between young children and their teenage mothers.

First, raw scores for positive parenting items on the Stony Brook Family Reading Survey, DPICS, and COIMP were obtained. Five questions from the Stony Brook Family Reading Survey were identified as representing positive parenting behaviors. The Stony Brook Family Reading Survey questions were rated on a scale of 1 – 4 points and were summed. There was one question, however, that was rated on a scale of 1 – 5. Then, an

overall positive parenting score was obtained on the DPICS. The overall score was obtained by adding the frequency of language facilitation and positive encouragement, based on the coder's ratings of the DPICS. Positive parenting raw scores from the COIMP were then obtained. Out of the first 16 standard parent-child interaction categories on the COIMP, six categories were identified as representing positive parenting behaviors (e.g., nonverbal expressions of engagement, acknowledging ideas, positive humor). Ten additional items on the COIMP were identified as representing positive parenting behaviors and these ratings were summed (e.g., pointing out objects, use dramatic talents, applause). Again, an overall score was obtained, based on the coder's ratings of 1 – 9. Second, raw scores from the Stony Brook Family Reading Survey, DPICS, and COIMP were each standardized, with a mean of 0 and a standard deviation of 1. Third, the resulting standardized scores were averaged and analyzed.

The resulting aggregate estimate of positive parenting behavior was the dependent variable in a one-way analysis of covariance (ANCOVA), with group (intervention or control) as the between-subjects factor and pre-positive parenting behavior as the covariate. It was predicted that teenage mothers who were randomly assigned to the interactive reading intervention group would display higher rates of positive parenting behaviors when compared to the control group. An assumption in ANCOVA is that groups were equivalent at pretest. At pretest, group means on positive parenting behaviors were quite close and not statistically different.

Another assumption of ANCOVA is that the regression is equivalent for both groups (i.e., slopes are equal). This assumption was examined in an unequal slopes

ANCOVA model. The interaction effect of group by pre-positive parenting behaviors was not significant, $F(1, 28) = 0.43$, $p > .05$. These results mean that there was no interaction between group and pre-positive parenting behaviors. In other words, the level of pre-positive parenting behaviors did not moderate the impact of the intervention. Another explanation for the non-significant interaction effect would suggest that the impact of the intervention did not depend upon the level of positive parenting behaviors demonstrated by teenage mothers at pretest. So, the assumption of equal regression is tenable. Because there was no interaction effect, it was reasonable to examine main effects.

The results of the equal regression ANCOVA are summarized in Table 18. There was no significant main effect for group, $F(1, 29) = 0.00$, $p > .05$. The independent variables did not have an effect on post-positive parenting behaviors. In other words, the rates of teenage mothers' positive parenting behaviors in the intervention group were not impacted any more or less than teenage mothers in the control group. This is particularly true since assumptions that groups were equivalent at pretest were examined. Hence, the interactive reading intervention did not appear to influence teenage mothers' positive parenting behaviors in the intervention group significantly.

TABLE 18. ANCOVA Summary Table for Positive Parenting Interactions

Source	df	SS	MS	F
Pre-Positive Parenting	1	2.92	2.92	10.00*
Group	1	0.00	0.00	0.00
Error	29	8.46	0.29	
Total	31	11.78		

Note. Type III or unique sums of squares are used so sums of squares do not sum to total.

* $p < .05$.

There was a significant main effect for pre-positive parenting behaviors, $F(1, 29) = 10.00$, $p < .05$. These results mean that pre-positive parenting behaviors were related significantly to post-positive parenting behaviors, indicating that pre-positive parenting was effective as a covariate. Thus, teenage mothers who demonstrated more positive parenting behaviors at pretest were predicted to also demonstrate more positive parenting behaviors at post-test.

Based on this analysis, it appears that the intervention had little or no effect on positive parenting behaviors for teenage mothers randomly assigned to the intervention group. Hence, mean differences in positive parenting behaviors of teenage mothers randomly assigned to the intervention group cannot be attributed to the intervention.

One hypothesis to explain why the interactive reading intervention did not appear to influence teenage mothers' positive parenting behaviors was the impact of negative

parent behaviors at pretest. To test this hypothesis, an aggregate measure of negative parenting behaviors was obtained from the Stony Brook Family Reading Survey, the Dyadic Parent-Child Interaction Coding System (DPICS), and the Coder Impression Rating Scale (COIMP). Again, an aggregate measure of negative parenting behaviors was obtained to provide a single focused test of the effect of an interactive reading intervention on negative parenting interactions between young children and their teenage mothers.

First, negative parenting raw scores for the Stony Brook Family Reading Survey, DPICS, and COIMP were obtained. One question from the Stony Brook Family Reading Survey was identified as representing negative parenting behavior. The question asked, "At what age did you begin to read to your child?" This particular question was deemed as negative parenting behavior because of the responses identified by teenage mothers. Essentially, the higher the rating (e.g., 1 = 0-6 months, 4 = later than 1st birthday), the less time the child had been exposed to books, prior to intervention implementation. And, since parents often initiate reading behavior with their child, this question was identified as representing parenting behavior. This particular question on the Stony Brook Family Reading Survey was rated on a scale from 1 – 4. Then, the overall negative parenting score from the DPICS was used to obtain an estimate of negative parenting behaviors. An overall negative parenting score on the DPICS was obtained by adding the frequency of negative parenting behaviors (i.e., physical negative, critical statement, negative command, and parent ignore). Raw negative parenting scores from the COIMP were also obtained. Out of the first sixteen standard parent-child interaction categories on the

COIMP, nine categories were identified as representing negative parenting behaviors (e.g., negative physical, put-downs, anger or irritability). An additional item on the COIMP was identified as a negative parent behavior (i.e., negative reaction during the tape), based on a rating scale of 1 – 9. Second, raw scores from the Stony Brook Family Reading Survey, DPICS, and COIMP were each standardized, with a mean of 0 and a standard deviation of 1. Third, the resulting standardized scores were averaged and analyzed.

The resulting aggregate estimate of negative parenting behavior was the dependent variable in a one-way analysis of covariance (ANCOVA), with group (intervention or control) as the between-subjects factor and pre-negative parenting behavior as the covariate. It was predicted that teenage mothers who were randomly assigned to the interactive reading intervention group would display lower rates of negative parenting behaviors when compared to the control group. An assumption in ANCOVA is that groups were equivalent at pretest. At pretest, group means on negative parenting behaviors were quite close and not statistically different.

TABLE 19. ANCOVA Summary Table for Negative Parenting Interactions

Source	df	SS	MS	F
Pre- Negative Parenting	1	5.64	5.64	27.76*
Group	1	0.24	0.24	1.17
Error	29	5.89	0.20	
Total	31	11.63		

Note. Type III or unique sums of squares are used so sums of squares do not sum to total.

* $p < .05$.

Another assumption of ANCOVA is that the regression is equivalent for both groups (i.e., slopes are equal). This assumption was examined in an unequal slopes ANCOVA model. The interaction effect of group by pre-negative parenting behaviors was not significant, $F(1, 28) = 2.40$, $p > .05$. These results mean that there was no interaction between group and pre-negative parenting behaviors. In other words, the level of pre-negative parenting behaviors did not moderate the impact of the intervention. Another explanation for the non-significant interaction effect would suggest that the impact of the intervention did not depend upon the level of negative parenting behaviors demonstrated by teenage mothers at pre-test. So, the assumption of equal regression is tenable. Because there was no interaction effect, it was reasonable to examine main effects.

The results of the equal regression ANCOVA are summarized in Table 19. There was no significant main effect for group, $F(1, 29) = 1.17$, $p > .05$. The independent

variables did not have an effect on post-negative parenting behaviors. In other words, the rates of teenage mothers' negative parenting behaviors in the intervention group were not impacted any more or less than teenage mothers in the control group. This is particularly true since assumptions that groups were equivalent at pretest were examined. Hence, the interactive reading intervention did not appear to influence teenage mothers' negative parenting behaviors in the intervention group significantly.

There was a significant main effect, however, for pre-negative parenting behaviors, $F(1, 29) = 27.76$, $p < .05$. These results mean that pre-negative parenting behaviors were related significantly to post-negative parenting behaviors, indicating that a pre-negative parenting behavior was effective as a covariate. Thus, teenage mothers who demonstrated fewer negative parenting behaviors at pretest were predicted to also demonstrate fewer negative parenting behaviors at post-test.

Based on this analysis, it appears that the intervention had little or no effect on negative parenting behaviors for teenage mothers randomly assigned to the intervention group. Hence, mean differences in negative parenting behaviors of teenage mothers randomly assigned to the intervention group cannot be attributed to the intervention.

The results for Question 2 did not support the hypothesis that an interactive reading intervention would increase positive parenting interactions between young children and their teenage mothers. It could be assumed that strategies used during the interactive reading intervention were not specific toward parent behaviors and therefore, did not influence positive parenting behaviors significantly. Despite this assumption, specific analyses of individual behaviors were undertaken to determine if other,

unaccounted for variables might have been influential. Specific analyses of individual behaviors did not yield significant effects, consistent with the aggregate analyses. Further, treatment integrity data reported by teenage mothers assigned to the interactive reading intervention group indicated overall satisfaction and enjoyment with the reading activities shared with their child and they learned something new about their child each week. These self-reports of satisfaction and enjoyment, as well as the amount of times and days spent reading with their child, increased throughout the six-week intervention.

Research Question 3: Engaged Time

Research Question 3 asked, "What are the effects of an interactive reading intervention on amount of engaged time?"

Using pre- and post-test scores of engaged time, it was hypothesized that young children and their teenage mothers who were randomly assigned to the interactive reading intervention would demonstrate higher rates of engaged time than parent-child dyads in the control group. To analyze this hypothesis, a one-way analysis of covariance (ANCOVA), with group (intervention or control) as the between-subjects factor and pre-engaged time as the covariate. A first assumption in ANCOVA is that groups were equivalent at pretest. At pretest, however, group means of engaged time were significantly different. Because groups were significantly different at pretest, interpretation of effects and adjusted means is more complex. A second assumption of ANCOVA is that the regression is equivalent for both groups (i.e., slopes are equal). This

assumption was examined in an unequal slopes ANCOVA model as the interaction effect of pre-engaged time and group. The interaction effect of group by pre-engaged time was not significant, $F(1, 28) = 1.52$, $p > .05$. These results mean that there was no interaction between group and pre-engaged time. In other words, the level of pre-engaged time did not moderate the impact of the intervention. Another explanation for the non-significant interaction effect would suggest that the impact of the intervention did not depend on the level of engaged time demonstrated by parent-child dyads at pretest. So, the assumption of equal regression is tenable. Because there was no interaction effect, it was reasonable to examine main effects.

TABLE 20. ANCOVA Summary Table for Engaged Time

Source	df	SS	MS	F
Pre-Engaged Time	1	575363.67	575363.67	20.22*
Group	1	140994.42	140994.42	4.95*
Error	29	825206.77	28455.41	
Total	31		1413571.22	

Note. Type III or unique sums of squares are used so sums of squares do not sum to total.

* $p < .05$.

The results of the ANCOVA are summarized in Table 20. There was a significant main effect for pre-engaged time, $F(1, 29) = 20.22$, $p < .05$. This means that pre-engaged time was related significantly to post-engaged time, indicating that pre-engaged time was

effective as a covariate. There was also a significant main effect for group, $F(1, 29) = 4.95$, $p < .05$. These results mean that there were significant differences between the intervention and control groups at post-test, when adjusting for pre-engaged time as the covariate. Essentially, the interactive reading intervention affected differences between groups at post-test. Because pre-engaged time was related significantly to post-engaged time, pre-engaged time was effective as a covariate. The main effects for group and pre-engaged time are illustrated in Figure 3.

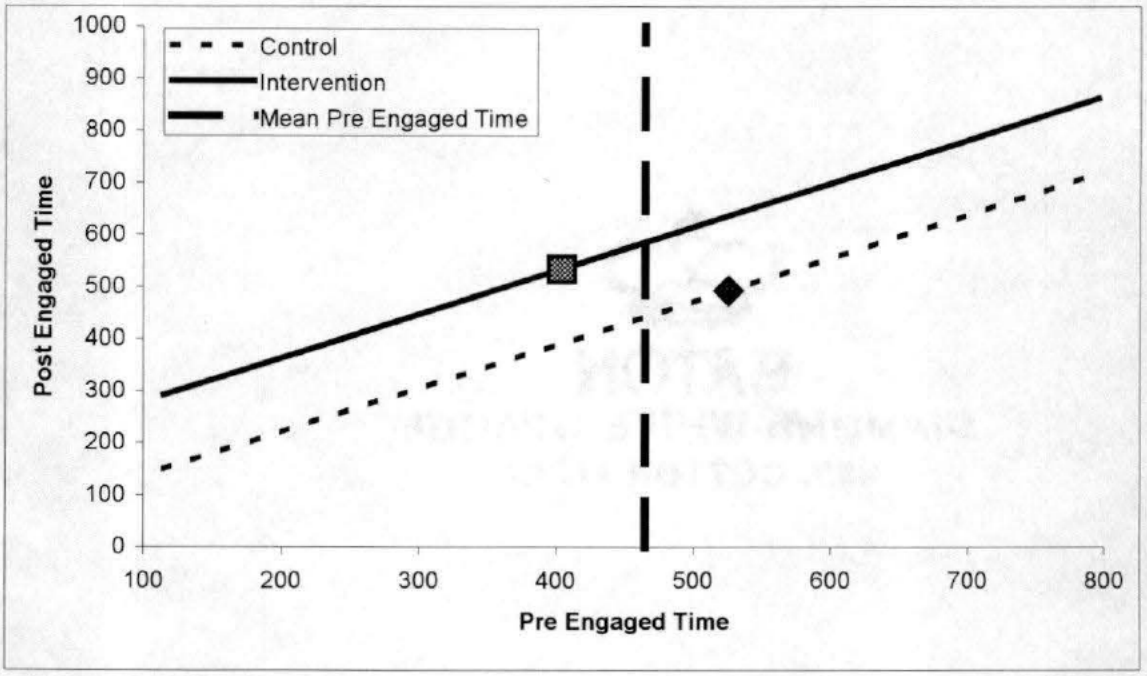

FIGURE 3. Predicted scores of engaged time at post-test, given pretest performance and group.

As illustrated in Figure 3, the regression on slope of predicted post-engaged time was the same for both groups. However, the regression line for the interactive reading intervention group is significantly above the regression line for the control group. Thus, for each level of pre-engaged time, the predicted level of post-engaged time would be higher. The adjusted means in Table 21 provides an indication of the magnitude of the predicted difference in engaged time.

TABLE 21. Actual and Adjusted Means and Predicted Difference in Engaged Time

	Intervention (n = 16)		Control (n = 16)	
Type of Mean	Pre-Test	Post-Test	Pre-Test	Post-Test
Actual Means	404.00	532.81	525.38	492.50
Adjusted Means		583.64		441.67

The grand mean of pre-engaged time is 464.69. Parent-child dyads in the interactive reading intervention group who had pre-engaged time of 464.69 would be predicted to have 583.64 post-engaged time. In comparison, parent-child dyads in the control group, who had the same pre-engaged time, 464.69, would be predicted to have 441.67 post-engaged time.

Thus, these results suggest that the interactive reading intervention impacted scores displayed at post-test. Regardless of level of pre-engaged time, the interactive reading intervention seemed to impact post-engaged time. For instance, parent-child

dyads who obtained lower pre-engaged time scores, combined with the interactive reading intervention, increased their engaged time at post-test. Parent-child dyads that obtained higher scores at pretest also would be predicted to benefit from the interactive reading intervention.

A strength of this design is that the effects of engaged time can be attributed to the intervention directly. Although groups were not equivalent at pretest, the interactive reading intervention appeared to impact engaged time at post-test, thereby indicating that parent-child dyads in the intervention group spent more time engaged in reading activities. It is important to note that parent-child dyads in the interactive reading intervention surpassed parent-child dyads in the control group, indicating that the intervention had a significant impact on engaged time.

The results of Question 3 did support the hypothesis that young children and their teenage mothers who were randomly assigned to the interactive reading intervention would demonstrate higher rates of engaged time at post-test than parent-child dyads in the control group. Consistent with the research hypothesis, the interactive reading intervention was effective in increasing the amount of time parent-child dyads spent in reading activities, when compared to parent-child dyads in the control group. Hence, the interactive reading intervention had the most effect for parent-child dyads that spent more time engaged in reading activities.

Summary

In this chapter, descriptive statistics for the participating families and univariate statistics for each research question have been presented. The overall analysis demonstrated three points. First, the results of Research Question 1 did support the hypothesis that an interactive reading intervention can impact the early literacy skills for young children of teenage mothers. Consistent with the research hypothesis, the intervention group obtained higher early literacy skills, but only for young children who demonstrated low early literacy skills at pretest. This expected result suggests that the interactive reading intervention, designed to increase early literacy skills for young children of teenage mothers, had an effect. Second, the results for Research Question 2 did not support the hypothesis that an interactive reading intervention would increase positive parenting interactions between young children and their teenage mothers. Moreover, the results did not support the hypothesis that an interactive reading intervention would decrease negative parenting interactions between young children and their teenage mothers. It could be assumed that strategies used during the interactive reading intervention were not specific toward parent behaviors and therefore, did not influence positive parenting behaviors significantly. Third, the results of Research Question 3 did support the hypothesis that young children and their teenage mothers who were randomly assigned to the interactive reading intervention would demonstrate higher rates of engaged time than parent-child dyads in the control group. Consistent with the research hypothesis, the intervention group increased their time engaged in a reading

activity, when compared to parent-child dyads in the control group. Hence, the interactive reading intervention had the most effect for parent-child dyads that spent more time engaged in reading activities.

CHAPTER V

DISCUSSION

Research supports the notion that children who enter school with poor early literacy skills may experience difficulty "catching up" to other children identified as good readers (Juel, 1988). This gap between readers can also widen with each passing school year, often resulting in students' dropping out before graduation from high school. Prior to dropping out of school, however, young children with poor early literacy skills may read less often, their vocabulary skills may develop more slowly, and they may learn fewer new concepts and ideas (Copeland & Edwards, 1990; Mason & Allen, 1986; Smith, 1989). However, these chains of events are not inevitable. Reading activities between parent/caregiver and child can help facilitate pre-reading and language skills, which can influence the child's later school success and potentially affect success in adolescence. Such reading activities may also help to reduce children's need for special education services, increase the likelihood of graduation, as well as reduce the risk of delinquency and ultimately increase economic self-sufficiency (Brown, 1988).

The groundwork for early literacy development and pre-reading skills, however, starts long before children are introduced to formal instruction. The literature on the

importance of parent-child interactions and support to use reading strategies effectively may be the link to motivate young parents of young children. While much of the research about early literacy development documents the importance of parent-child interactions, research is limited in the area of early literacy development for young children of teenage mothers. Hence, the purpose of this study was to examine the effects of an interactive reading intervention on early literacy development and positive parenting interactions for young children of teenage mothers.

The purpose of this study was to examine the short-term effects of an interactive reading intervention on early literacy development and positive parenting interactions for young children of teenage mothers. Results indicated that the intervention was effective for some parent-child dyads but not for others. Overall, the interactive reading intervention appeared to facilitate more gains on early literacy development for young children, but only for young children who demonstrated low early literacy skills at pretest. While there was little or no effect on positive and negative parenting interactions for parent-child dyads of either group, parent-child dyads that spent more time in reading activities (i.e., the interactive reading intervention) increased their amount of time engaged in shared reading activities at post-test. Teenage mother's perceptions of treatment and social validity indicated a general consensus of overall satisfaction and enjoyment of the shared reading activity with their child.

Three findings emerged from the results of this study and will be discussed. First, for young children of teenage mothers who scored low on early literacy skills at pretest, the interactive reading intervention contributed to improved outcomes at post-test.

Second, the interactive reading intervention seemed to have little or no effect on positive and negative parenting behaviors for parent-child dyads of either group. Third, parent-child dyads that spent more time in reading activities (i.e., the interactive reading intervention) increased their amount of time engaged in reading at post-test. Interpretations of these findings are discussed in the following sections.

Using an Interactive Reading Intervention to Promote Early Literacy Development

The intent of this interactive reading intervention was to provide an opportunity for young children to share with their teenage mothers a literacy-related activity, during their early years of learning. Not surprisingly, magic does not appear with just reading to children. Instead, the magic comes as parents engage their children in print, and it is this engagement with print that helps young children develop the skills necessary to become readers. Although it appears a positive relation exists between teenage mother's reading to their young children and early literacy skills, the relation was strongest for young children who demonstrated low pre-early literacy skills. About 25% - 50% of the variance can be associated with differences in the amount of pre-early literacy skills young children brought to this study. Consistent with this finding, Meyer et al. (1994) report that activities related to print directly show positive relations with children's reading achievement. On the other hand, Meyer et al. (1994) also report that the farther one moves away from activities related directly to the reading process, the lower the correlation between that reading activity and reading achievement. It seems clear that the

more young children spend engaged with print, the better they will be at understanding concepts about print and grasping the process of how print encodes information. Parents reading to their children is a clear example of this phenomenon.

Based on research suggesting that parents need to read to their young children early, it was hypothesized that teenage mothers reading storybooks aloud to their young children would increase early literacy skills for their children. While research has supported this relation for older parents and their children, this study also presents encouraging information for young children and their teenage mothers. Although findings were most encouraging for young children with low pre-early literacy skills, the interactive reading intervention seemed to facilitate improved gains and outcomes for some parent-child dyads. There may be two possible explanations for why the data increased early literacy skills for some parent-child dyads and not others. The first stems from parent's responses of shared evening activities on the Stony Brook Family Reading Survey, where books are mentioned. A second, perhaps closely related explanation, are the early literacy skills young children brought to the study, prior to intervention implementation. These are a reflection of environmental variables.

Shared Evening Activities and Prior Exposure to Literacy-Related Activities

A first hypothesis to explain why an interactive reading intervention may have improved early literacy skills for some young children of teenage mothers and not for others can be attributed to the self-report of teenage mother's shared evening activities with their child, where books are mentioned. These data are important, as they indicate the level of literacy-related activities that may be happening between mother and child at home, prior to participation in the study. While differences were not statistically significant between groups on the chi-square test, self-reports on the Stony Brook Family Reading Survey and interview questions were explored.

At-a-glance, a few more teenage mothers that were randomly assigned to the control group reported spending a portion of their evening activities reading books with their child. When compared to the intervention group, the difference between groups was three parent-child dyads. Moreover, teenage mothers randomly assigned to the control group reported spending 1.4 hours more with their child than teenage mothers in the intervention group. This information is particularly important because it reflects the amount of time some teenage mothers spend exposing their children to literacy-related activities and storybook reading, especially outside of school. So, it can be hypothesized that young children who are already exposed to print and literacy-related activities are getting the skills necessary for early literacy development and may not benefit from an interactive reading intervention.

A second, but closely related explanation as to why an interactive reading intervention may have improved early literacy skills for some young children of teenage mothers and not for others can be attributed to the early literacy skills young children brought to the study. According to the Stony Brook Family Reading Survey, twelve teenage mothers in the control group report reading to their children between the ages of 0 – 6 months, while seven teenage mothers in the intervention group report reading to their children between the ages of 0 – 6 months. The frequency reported by teenage mothers in the intervention group of reading to their child was between 7 – 12 months (N = 6). Hence, teenage mothers exposed some of the young children in this study to literacy-related activities earlier than others.

Environmental variables, such as exposure to literacy-related activities in the home, may affect the integrity of any intervention. The extent to which intervention experiences are conceptualized and meaningful to young children may facilitate their learning of new skills. Increased opportunities to practice skills targeted in the intervention may also facilitate greater retention and generalization. Thus, children who were experiencing early literacy activities in various settings may have responded less favorably to an interactive reading intervention than children whose early literacy activities were restricted to the intervention alone.

Given the incredible range of individual differences that children bring to learning experiences, these examples of individual differences that could affect children's responses to intervention are not meant to be exhaustive. It would be a challenge to identify, let alone control, all potentially important variables. What seems critical is that

(a) interventions target variables that can be manipulated, (b) intervention effects are monitored, and (c) modifications are made to facilitate early literacy development and prevent reading difficulties in young children (Laimon, 1994).

The work of Snow, Burns, and Griffin (1998) builds on existing knowledge about the skills necessary for early literacy development and the need to prevent reading difficulties in young children. In particular, the authors address the evidence about what those early literacy skills are and add further knowledge about how those skills are best taught to young children who vary in pre-reading-related abilities (e.g., conversations during mealtimes).

Parent-child interactions have been associated with predictors of success in reading for children. More specifically, parents have an important role to play in preparing their children for pre-reading and early literacy development. Exposing young children to literacy-related activities and environments and shared-book reading presents as a worthwhile intervention strategy for parent-child relationships. However, shared-book reading activities for parent-child dyads that have the aim of fostering early literacy development and increasing pre-reading skills need to be designed with close attention to the task components of reading and the conventions of print. Currently, early childhood educators and researchers tend to emphasize language experiences and print awareness as the prime routes toward beginning reading. However, certain early literacy skills are warranted, including letter-word recognition and phonological awareness that may not be covered at depth in a preschool curriculum. Because early childhood educators presume that preschool is a formative experience that enhances the skills that children bring to

school, it is particularly important to provide young parents with the information and support necessary to help motivate a parent-child interaction around literacy-related activities. Again, early interactive reading offers a way to prevent several risk factors in later development.

The results of this study help to support the effectiveness of an early interactive reading intervention. While the results for an interactive reading intervention contributed toward improved outcomes, the results were strongest for young children who demonstrated low early literacy skills at pretest. Essentially, this supports the importance of early literacy experiences and heightens the idea that prevention is crucial. Reading to young children helps them become more aware of the conventions of book, including the way books are held and the direction in which print is read. Reading to children may also help them learn print-related vocabulary words such as: page, title, and word, which are useful for formal instruction in reading. Also, young children at-risk of reading difficulties can be identified early.

Using an Interactive Reading Intervention to Promote Positive Parenting Behaviors and Decrease Negative Parenting Behaviors

A second important finding of this study is the limited effect of the interactive reading intervention on positive and negative parenting behaviors for teenage mothers. It was hypothesized that teenage mothers who received the interactive reading intervention were more likely to exhibit a significant increase in the rate of positive parenting behaviors than teenage mothers who did not receive the interactive reading intervention.

Similarly, teenage mothers who received the interactive reading intervention were expected to exhibit a significant decrease in the rate of negative parenting behaviors than teenage mothers who did not receive the interactive reading intervention. However, the interactive reading intervention did not exhibit significant effects on aggregate measures of positive or negative parenting behaviors.

Several hypotheses may explain why a main effect for group was not found for positive or negative parenting behaviors. First, the skills targeted in the interactive reading intervention correspond closely to early literacy development for young children. For instance, the study was designed primarily for young children to acquire concepts about print such as directional conventions (e.g., print moves from left to right), and story structure (Clay, 1991). In contrast, coding assessments used for parent interactions sampled skills and behaviors not taught directly in the interactive reading intervention. When behaviors of interest are taught directly rather than assumed to be influenced indirectly, larger treatment effects are expected (Cohen, 1987).

A second hypothesis that may explain why a main effect was not found for positive or negative behaviors is that multiple samples of behavior over time may be more sensitive to growth than two samples of behavior before and after an intervention. Multiple samples of behavior allow consideration of the variability in parent's behavior and help to establish trends in performance without relying on individual and often inconsistent data points. Ongoing monitoring is also designed specifically to measure differences within individuals. However, the purpose of standardized coding systems, like the DPICS, is to measure difference between individuals. This focus on inter-

individual differences makes standardized coding systems effective for categorizing subjects but ineffective for monitoring individual growth (Hively & Reynolds, 1975).

A third hypothesis that may help to explain why the interactive reading intervention was not more clearly effective is that a six-week interactive reading intervention may not have been enough time to measure generalizable parent behaviors. In other words, while the skills targeted in the interactive reading intervention corresponded closely to early literacy development for young children, a longer intervention might be deemed necessary to monitor and examine closely the outcomes for positive and negative parenting behaviors. Thus, dependent measures would need to be sensitive to the long-term effects of storybook reading programs, such as a positive attitude towards reading (Butler, 1980), parental support for literacy activities throughout a child's education (Friedberg, 1989), and the quantity of words read to young children by their parents and/or caregivers (Hart & Risely, 1995). The quantity of words read to a child supports the culminating development of language, sociability, vocabularly growth and development, and spontaneous speech. Another explanation to support this hypothesis is that post-test assessment may have been administered too soon or rather, the intervention may not have been long enough. Perhaps the interactive reading intervention set a foundation that would eventually change parenting behaviors, but it may take longer with increased shared reading to see an effect.

Other hypotheses to help explain why significant effects were not found for positive or negative parenting behaviors follow. For instance, one plausible hypothesis that might explain why effects were not stronger at a group level of analysis is that

positive parenting behaviors for some teenage mothers may have been offset by negative parenting behaviors of other teenage mothers. A limitation of group analysis is that outlying data points can cancel each other out, resulting in group means that are not representative of all subjects in the group. Because group means may mask the changes in performance exhibited by individual parents, results must be interpreted with caution.

Another hypothesis that may help to explain why the interactive reading intervention was not more clearly effective is that level of motivation and enthusiasm for the intervention, experienced by teenage mothers, may have limited its potential benefits. While self-reports from the treatment integrity questionnaire revealed overall satisfaction and enjoyment with the reading activities shared with their child, a few videotaped recordings of teenage mothers in the interactive reading intervention illustrated limited reading activities and more play/free-time activities. Also, negative parenting behaviors were revealed (e.g., physical negative, critical statement, negative command, parent ignore). Consequently, their children may have observed their parent's feelings of ambivalence, causing them to develop negative attitudes and higher rates of noncompliance themselves. Teenage mothers and children who were less motivated to participate may not have benefited from a school-based, interactive reading intervention as expected.

Also, a home-based intervention, rather than a school-based intervention, where environmental variables and individual comfort levels may vary, could attribute to differences in parenting behaviors. Finally, an alternative hypothesis to help explain a

lack of effects is that the power was insufficient to detect small group differences due to a small sample size.

While all of these hypotheses contribute to the understanding of limited effects for positive and negative parenting behaviors, the most plausible explanation may be attributed to the limited sample size in this study and the hope for indirect/subtle effects when, in fact, the skills targeted in the interactive reading intervention corresponded closely to early literacy development for young children of teenage mothers.

Using an Interactive Reading Intervention to Increase Engaged Time

A third finding from this study is that, in the absence of intervention, parent-child dyads spent less engaged time in a shared reading activity. Controlling for pretest scores of engaged time, young children and their teenage mothers who were randomly assigned to the interactive reading intervention demonstrated higher rates of engaged time than parent-child dyads in the control group.

Parent-child dyads randomly assigned to the intervention group demonstrated higher rates of engaged time with storybook reading activities by the end of the study. Because groups differed initially at pretest, however, adjusted means on the dependent variable were interpreted. Regardless of the level of pretest engaged time the parent-child dyad displayed, participation in the interactive reading intervention appeared to increase their time engaged in reading. This is exemplified by parent-child dyads in the control group, who did not seem to demonstrate higher rates of engaged time with storybook

reading activities at post-test. Essentially, parent-child dyads who exhibited lower engaged time scores at pretest, combined with the interactive reading intervention, would be predicted to have higher engaged time at post-test. In addition, parent-child dyads that obtained higher scores of early literacy skills at pretest would also be predicted to benefit from the interactive reading intervention.

Results suggest that the interactive reading intervention impacted engaged time scores displayed at the end of the study. Increased engaged time is important for several reasons. First, young children who are not exhibiting progress on early literacy skills may increase their rate at which they learn early literacy skills when they are more engaged in storybook reading activities with their mothers. Second, engaged time may contribute to eventual changes in a young child's temperament. According to the work by Trelease (1989), it is noted: when parents read aloud to their young children, the interaction (a) provides a positive role model for young children, (b) introduces children to new information and a variety of outside experiences, and (c) helps increase the length of time in which the young child can remain actively engaged in an activity. Through reading aloud, young children learn to want to read, not just the mechanics of how to read. Third, engaged time may result in long-term changes in parenting behaviors, as both parent and child experience success and positive experiences around reading (Morrow, Tracey & Maxwell, 1995).

Limitations of the Study

A number of limitations affect the conclusions that can be drawn from this study. This section will address threats to validity in the areas of subjects and dependent variables.

Subjects

Diffusion or imitation of treatment may have been involved in this study. Diffusion or imitation of treatment occurs when treatments involve informational programs and when the various groups can communicate with each other, participants in one group may learn the information intended for others (Cook & Campbell, 1979). This is particularly true since the parent-child dyads were randomly assigned from each school site. At the same time, random assignment poses a strength of the study, because school site were balanced across treatment group. Teenage mothers randomly assigned to the interactive reading intervention, however, had opportunities to exchange information with parent-child dyads randomly assigned to the "wait-list" control group. Even if a verbal exchange of study information did not occur, teenage mothers in the control group may have received cues or signals about the shared reading activities based on the advertisement, consent forms and pretest measures, and/or parent-child dyads leaving the classrooms weekly to participate in the study.

While it was important to consider the early literacy skills young children brought to the study prior to intervention implementation, this study also presents the need to

assess teenage mothers' reading ability and/or literacy skills. As an example, some teenage mothers in this study were able to read the storybooks with minimal difficulty while other teenage mothers, with limited reading fluency, experienced some difficulty expressing the story to their child comfortably. These reading differences became apparent after intervention implementation.

Another limitation of this study relates to the small sample size of parent-child dyads. This low statistical power may explain the lack of significant differences on parenting behaviors. Essentially, the power may not have been sufficient to detect small group differences due to a small sample size.

Finally, a plausible threat to external validity for this study may be related to the interaction of selection. Interaction of selection examines the question, can the results of this study be generalized beyond the groups used to establish the initial relationship – e.g., various racial, social, geographical groups (Cook & Campbell, 1979)? Although parent-child dyads met the criteria for study participation, the findings from this study may be limited to teenage mothers from an urban Portland community. While participation in this study was voluntary, resources and monetary support may have also contributed to parent involvement throughout the study.

Dependent Variables

Limited information is available supporting the reliability and validity of the ELDOA tool for children at this age. However, this study provides the first data regarding

the psychometric properties of this measure for young children of teenage mothers, and their sensitivity in measuring change between pre and post-test. At a group level of analysis, measures with unknown reliability may or may not reflect true changes in behavior, making statistical differences between group means difficult to interpret (Cook & Campbell, 1979).

In addition, the quality of the interactive reading intervention was not examined. Although strategies designed to enhance storybook reading activities were presented to teenage mothers weekly, the degree to which the strategies were used is unknown. Thus, self-reports about treatment integrity are extremely limited in this study.

Implications for Practice

Given the intervention effects shown in this study, it does not appear possible to determine in advance what type of intervention will be effective for an individual child. Thus, progress monitoring is necessary to determine whether a particular intervention is effective for an individual child. Ideally, progress monitoring data can provide a basis for decisions regarding intervention implementation and modification. This type of data could be used to indicate (a) whether a child is benefiting from intervention, (b) when modifications in the intervention should be made, and (c) what skills need to be targeted. When a lack of progress indicates that a child is not benefiting from intervention, the same skills may be targeted, but with modifications. Evidence of progress may also indicate that the current intervention is effective and should be maintained. Evidence of

mastery would indicate that the child might be ready to learn new skills. In this case, the intervention strategies may remain the same but targeted skills would change.

The fact that teenage mothers reported overall satisfaction and enjoyment with the interactive reading intervention is also important for practice. While the perceived social validity of an intervention may be related to the effectiveness of an intervention (Wolf, 1984), videotaped recordings in this study revealed some teenage mothers in the interactive reading intervention spending limited time with reading activities and more time with play/free choice activities. This enhances the idea of videotaped recordings, relying less frequently on parent's self-reports and observing parent-child behaviors unobtrusively and systematically. Moreover, a flaw for relying on parent's self-reports is that it tends to limit the validity of the results. Videotaped sessions can be a viable instrument for practice, particularly during parent-training classes and individual meetings with parents.

Moreover, an intervention that targets and corresponds more closely to positive parenting behaviors for teenage mothers may be necessary to improve outcomes in positive parenting. It may not be enough to assume that the interactive reading intervention will influence behaviors indirectly. Instead, positive parenting behaviors may need to be taught directly in the intervention.

Since schools represent an important site for service delivery and service coordination for pregnant and parenting teens, a final implication for practice would be to enhance parent-child relationships within the educational curriculum for teenage parents. In addition to the rudimentary focus of services provided to teenage parents, including

individual counseling, career development and job training, economic survival, and general parenting skills, an intervention that is part of an educational curriculum or parenting classes would allow for longer intervention implementation and reduce the likelihood of mortality. Also, an intervention that is school-based is likely to provide a basis for ongoing monitoring of intervention. The focus of parent-child relationships as part of an interactive reading intervention is also likely to provide an opportunity for teenage mothers to relate to their children in a positive way. And, an effect with increased and longer duration of shared reading on parenting behaviors might become apparent.

Implications for Future Research

Additional research is necessary to better understand issues that surround adolescent pregnancy and parenting. One area of additional research should clarify the relation between ethnic status and adolescent parenting. Betancourt and Lopez (1993) argue that cultural sensitivity should address not only physical features of the people, such as race, but also subjective features, such as norms, family roles, communication patterns, and values. Essentially, limited information is known about why some at-risk adolescents become parents while other adolescents, who share similar risk patterns, do not. Empirical data regarding the factors that place an adolescent at particular risk for becoming pregnant is vital for developing efficient and effective prevention programs. Increased sensitivity to the needs and realities of youth at-risk for pregnancy and parenting would also help to construct socially valid and meaningful pathways toward

prevention. In particular, increased sensitivity to an interactive reading intervention might include storybooks that reflect diverse backgrounds and cultures, as opposed to storybook themes most representative of the dominant culture. This significant change might also help to increase engaged time between parent-child dyads.

Another important implication for future research would be to include teenage fathers in intervention studies. This is particularly important, as many relationship-focused intervention components seem to target mothers and children. Fathers, too, can play a vital role in their child's reading skills and promote an opportunity for them to relate with their children in a supportive way. While many teenage fathers tend to be "absent" from their child's life, and provide minimal (and sometimes only) financial support, the choice to be "absent" is not always made by teenage fathers. When given an opportunity, teenage fathers could also benefit from time spent with their children, regardless of the intervention.

Longitudinal studies that examine the effects of an interactive reading intervention on later reading achievement would generalize to other settings. While this particular study was designed to examine the short-term effects of an interactive reading intervention in a controlled setting, it would also be meaningful to examine whether or not the intervention generalized to other settings.

In fact, this study may have begun the process of laying the foundation for positive parent-child interactions and early literacy development. Differences may start small but changes may increase over time. Either way, further review of eventual change

in early literacy skills and positive parenting behaviors for young children of teenage mothers is warranted.

Finally, research should examine (a) the validity of measures used to evaluate intervention effects on dependent measures, and (b) procedures that may improve the perceived treatment integrity of interventions. The main goal of research in this area will be establishing valid and reliable measures of treatment integrity and social validity (Laimon, 1994).

Summary

The findings of this study reflect a focused and persistent effort to contribute reliable and valid information to better understand early literacy development and positive parenting interactions for young children of teenage mothers. Contributions of this study include the development of an interactive reading intervention, and implementation of a methodological research protocol within an urban Portland community. This process serves as a model for future intervention evaluations to better understand the importance of parent-child interactions on early literacy development.

More specifically, results from the current study indicate that the interactive reading intervention implemented in the study offers potential for the development of important early literacy skills for young children of teenage mothers. However, the effects of the interactive reading intervention varied; the intervention was more effective for some children than for others. For all children, the interactive reading intervention increased engaged time; for children with low early literacy skills, it also improved skill

levels. In other words, parent-child dyads that spent more time in reading activities (i.e., the interactive reading intervention) increased their amount of time engaged in reading at post-test. When compared to the control group, this result seems to be attributed to the interactive reading intervention. And, as a group, the interactive reading intervention contributed to improved early literacy outcomes at post-test, but only for young children of teenage mothers who scored low on early literacy skills at pretest.

On the other hand, the interactive reading intervention seemed to have little or no effect on positive and negative parenting behaviors for parent-child dyads of either group. While there was no main effect for parenting behaviors, it is important to highlight that the intervention did not pose harmful effects on parent-child dyads; i.e., the interactive reading intervention did not increase negative parenting behaviors from pre to post-test. This is a particularly important contribution to practice and research, as we would not want an intervention to create a hostile environment and/or relationship between parent and child.

Moreover, findings from this study provide limited support for the validity of evaluating change in young children's early literacy skills (i.e., ELDOA). In addition, the quality of the interactive reading intervention was not examined. Although strategies designed to enhance storybook reading activities were presented to teenage mothers weekly, the degree to which the strategies were used is unknown.

In sum, findings from this study help to support the theme of shared book reading activities, even for young children of teenage mothers: parent-child reading interactions before school entry are important. Parent-child reading interactions can be increased and

can help to improve early literacy skills for young children. What a family does is more important to student success than family income or education (Epstein, 1991; Henderson & Berla, 1994; Keith & Keith, 1993; Liotos, 1992).

APPENDIX A

CONSENT FORMS AND TEENAGE PARENT INTERVIEW QUESTIONS

ARE YOU A TEENAGE MOTHER

who would like to earn $100*?

you qualify if you are

between the ages of 13-19 years,
with a toddler who is 2 years of age,

and are interested in participating in a research program that involves reading storybooks aloud to your child,

learn more about

PROJECT BRIDGE!!!

PROJECT BRIDGE:

is a research program that is designed to last 12 weeks.
*For your time and participation, you may receive a total of $100.00 in gift certificates.

is directed by Khaliyah Williams, a doctoral student in the School Psychology program at the University of Oregon in conjunction with The Youth Employment Institute.

For more details, please contact
Ms. Khaliyah Williams or
Ms. Gerri Fortson at:

The Youth Employment Institute
1704 N.E. 26th Avenue
503.280.1058

PROJECT BRIDGE

BEGIN READING IN DYADIC GROUPS EARLY

Dear Parent:

You and your child are invited to take part in a research program that will look at how teenage mothers and their children relate when they share reading activities. You were chosen as a possible participant because you are enrolled and follow the basic rules of *The Youth Employment Institute*. The program is being conducted by Khaliyah Williams, a graduate student from the School Psychology program at the University of Oregon, Eugene, Oregon. The goals of the program are to learn more about how teenage mothers can help play an important role in their child's reading skills and promote an opportunity for teenage mothers to relate with their young children in a supportive way. Studies show that when parents expose their young children to printed materials and read aloud to their young children *before* they enter school, it promotes later reading success.

Your participation is important to us. Your information will help us to help families in your community and promote success between teenage mothers and their children. Due to the number of staff involved with the research program and scheduling, we need to divide families into two groups. If you are assigned to the second group, we may need to ask you to wait 12 weeks, until one group finishes the research program, before you can participate. If this occurs, you will receive the same services as the first group.

All interviews, questions, and observations will be conducted in a private, quiet place at *The Youth Employment Institute*. The research program has been divided into three parts:

PART ONE

- You will be asked to participate in a 15-minute interview that will cover your family background, your reading experiences and the reading experiences of your child. Researchers involved in the program will record your answers for you. Also, you will be asked to complete a 10-minute survey about your general attitude toward reading.
- Observations and interviews about reading will also be conducted with your child.

PART TWO

- Meetings with your child will occur at *The Youth Employment Institute* two days a week, 15 minutes each session, for 10 weeks in a row.
- Each observation with your child will be videotaped and completed in a private, quiet setting at *The Youth Employment Institute*.
- The observations will focus on the reading activities you share with your child. Also, you will be asked to complete a 10-minute rating scale each week of the program. The rating scale will help researchers understand your opinion about the reading activities you share with your child while participating in the program. Researchers will provide you with the materials necessary to read aloud to your child each week and by the end of the program, each parent-child family will have accumulated 30 new books.
- Once a week, researchers will meet with you to provide you with support and encouragement as you share reading activities with your child.

PART THREE

- You will be asked to complete another 10-minute survey about your general attitude toward reading and a final observation and interview about reading with your child will be conducted.

PAYMENT

Parent-child families are paid in appreciation for their time and participation. Payment will be offered as gift certificates to local retail stores. You will receive a total of $100.00, divided into three parts. During PART TWO, $10.00 gift certificates will be given at the end of each week that you participate in the program.

Family Payment for:	
Participation of PART ONE:	$20.00
Participation of PART TWO:	$60.00
Participation of PART THREE:	$20.00
Total Family Payment:	**$100.00**

CONFIDENTIALITY

- All of the information you share with us will be kept private. It will not be shared with anyone outside of **PROJECT BRIDGE** staff. That means your neighbors, school, other family members (or anyone else) will not have access to the information you give us.
- Information will be coded with a number that will not be connected to your name. Any information that has both your name and your number will be locked securely in file cabinets.
- To help keep information private, we ask that you also treat the interviews, rating scales, and observations as private and do not discuss them with anyone else outside of the research team
- The information and videotapes will be used as part of a doctoral project, to be completed by Khaliyah Williams. The information and videotapes will be stored for no more than 10 years, at which time they will be destroyed. The final results of the program will be available to you as group information, and **not** about specific individuals.

YOUR RIGHTS, RISKS, AND BENEFITS

- **RIGHTS:** *Your participation in this program is entirely voluntary. Your decision about whether or not to participate will not affect your relationship with The Youth Employment Institute.* If you choose to participate in the program, you are free to stop and discontinue participation at any time without loss of services from *The Youth Employment Institute*.

- **RISKS:** The information will not be released to any individual or agency without a signed release from you. There are only two possible exceptions to this: staff members of **PROJECT BRIDGE** will report to appropriate authorities 1) physical injury or abuse to any child caused by other than accidental means, as required by Oregon law; and 2) information from a study participant which leads them to believe a person is in danger of physical harm. For example, staff members may inform administrators at *The Youth Employment Institute* if the young child is in serious physical danger.

- Although the risks associated with participating in the program are small, it is possible that our efforts to protect your privacy will not be effective, or that you may feel uncomfortable sharing personal information during the interview. However, we will do everything we can to ensure that your information is treated with the highest level of privacy. All project staff have signed a statement of confidentiality to help ensure your privacy.

- **BENEFITS:** The benefit of your participation in this program is that you may help to (a) provide new knowledge and understanding about teenage parent-child relationships, (b) promote healthy parenting among teenage mothers, (c) increase young children's familiarity with books, and (d) promote an opportunity for teenage mothers to interact with their young children in an encouraging and supportive way, which, in turn, may help create effective practices, which are more suited for families and children of diverse backgrounds.

CONTACT PHONE NUMBERS

If you should have questions about the program, please contact Khaliyah Williams (503-280-1058) at the *Youth Employment Institute*. You may also contact Dr. Roland Good (541-346-2145), who is the program advisor at the University of Oregon. If you should have questions about your rights as a participant in the research program, you may also contact the Human Subjects Compliance office directly at the University of Oregon, Eugene, Oregon (541-346-2510). You will be given a copy of this consent form for your records.

THANK YOU!

We value your participation, and will do all that we can to make your involvement both rewarding and enjoyable. We appreciate your efforts to help us improve our understanding of teenage mothers and their families. Thank you for your cooperation and interest in PROJECT BRIDGE.

Your signature below (a) serves as your agreement to participate willingly in the BEGIN READING IN DYADIC GROUPS EARLY research program, (b) indicates that you have read and understand the information provided above and may take away your permission at any time and discontinue participation without penalty, and (c) confirms that you have received a copy of this form, and that you are not waiving any legal claims, rights, or remedies.

Parent signature _____ Date: _____

Witness _____ Date: _____

Name of child participant_____

[see attached Consent Agreement for Videotaping]

Dear Parent/Legal Guardian of _____:

This letter is to inform you about an exciting research program called **PROJECT BRIDGE** that is happening at the *Youth Employment Institute* this year. The goals of this program are to learn more about how teenage mothers can help play an important role in their child's reading skills and promote an opportunity for teenage mothers to relate with their young children in a supportive way. Another goal of the program is to improve the understanding of child development at this age and learn about the role teenage mothers and their families play in children's lives. Other parents have enthusiastically supported similar research programs.

Your daughter and grandchild's participation in this study is important. All of the information gathered from your family will be kept strictly confidential. The research staff cannot share the information given to us with anyone. The participation involvement includes the following:

- A 15-minute interview with the teenage parent at the beginning of the study. The interview questions will focus on brief descriptions about parenting and family routines and reading experiences of the teenage parent as well as the child. Teenage mothers will also be asked to complete a 10-minute questionnaire about their general attitude toward reading.
- Observations and interviews about exposure to books will also be conducted with the young child before and after the study.
- Teenage parent/child observations of reading activities will also be conducted and videotaped in a private place at *The Youth Employment Institute.* The program will require the teenage parent & child to meet two days a week, 15 minutes each session, for 10 weeks in a row.
- Teenage parent-child families are paid in appreciation for their time and involvement. Payment will be offered as 'gift certificates' to local retail stores. The stipend will be a total of $100.00, divided into three parts: $20 for their participation in PART ONE, $60 for their participation in PART TWO, and $20 for their participation in PART THREE. Throughout the course of the program, each parent-child family will also have an opportunity to accumulate 30 new storybooks.
- Due to the number of staff involved with the research program and scheduling, we need to divide families into two groups. If your daughter and grandchild are assigned to the second group, we may need to ask them to wait 12 weeks, until one group finishes the research program, before they can participate. If this occurs, they will receive the same services as the first group.

RIGHTS: Your daughter and grandchild's participation in this study is voluntary. Their decision about whether or not to participate will not affect their relationship or services received with *The Youth Employment Institute.* If they should decide to participate, they are free to take away their permission and discontinue participation at any time. Although your daughter is a parent, she is under the age of 18 years. Because you are the parent/legal guardian of the young child, according to Oregon law, your consent is required for your daughter's and grandchild's participation in **PROJECT BRIDGE.**

RISKS: The information will not be released to any individual or agency without a signed release from you. There are only two possible exceptions to this: staff members of **PROJECT BRIDGE** will report to appropriate authorities 1) physical injury or abuse to any child caused by other than accidental means, as required by Oregon law; and 2) information from a study participant which leads them to believe a person is in danger of physical harm. For example, staff members may inform administrators at *The Youth Employment Institute* if the young child is in serious physical danger.

- Although the risks associated with participating in the program are small, it is possible that our efforts to protect your privacy will not be effective, or that you may feel uncomfortable sharing personal information during the interview. However, we will do everything we can to ensure that your information is treated with the highest level of privacy. All project staff have signed a statement of confidentiality to help ensure your privacy.

BENEFITS: The benefit of participation in this program is that the information may help to (a) offer new knowledge and understanding about teenage parent-child relationships, (b) promote healthy parenting among teenage mothers, (c) increase young children's familiarity with books, and (d) promote an opportunity for teenage mothers to interact with their young children in an encouraging and supportive way, which, in turn, may help create effective practices, which are more suited for families and children of diverse backgrounds.

PROJECT BRIDGE is directed by Khaliyah Williams, a doctoral student at the University of Oregon. If you should have questions about the program, please contact Khaliyah Williams (503-280-1058) at the *Youth Employment Institute*. You may also contact Dr. Roland Good (541-346-2145), who is the program advisor at the University of Oregon. If you should have questions about your rights as a participant in the research program, you may also contact the Human Subjects Compliance office directly at the University of Oregon, Eugene, Oregon (541-346-2510). You will be given a copy of this consent form for your records.

Please sign this consent form to indicate whether or not your daughter and grandchild has permission to participate in the research program. I am asking all parent(s)/legal guardian(s) to return this consent form with 24 hours.

Thank you for your help.

Sincerely,

As legal guardian, I give permission for _____

to participate in **PROJECT BRIDGE** with his/her teenage mother _____.

_____ _____

Signature of parent/legal guardian **Date**

[see attached Consent Agreement for Videotaping]

I understand that I will be participating in **PROJECT BRIDGE**, which is under the direction of Khaliyah Williams, a graduate student at the University of Oregon. I have received a full explanation for the purpose and procedures of the videotaping activities during the course of the research program and have had all my questions answered to my satisfaction. I give my permission to allow my son/daughter _____ to be videotaped during the program, and for those videotapes to be looked at by researchers involved in the program, as well as for other professional purposes as described to me. Professional purposes include training of staff who are involved in the research program. I understand that all information about my family will be kept private and will not be reported in a way that would identify us. I understand that the information and videotapes will be used as part of a doctoral project, to be completed by Khaliyah Williams, and will be stored for no more than 10 years, at which time they will be destroyed. I further understand that I may take away my permission at any time, without penalty. If I have further questions, I understand that I may contact Khaliyah Williams directly (503-280-1058) at the *Youth Employment Institute*.

_____ _____

Signature of parent/legal guardian
(for teenage parent under 18 years)

Date

_____ _____

Signature of parent
(for child participant)

Date

Coder _____ **Date** _____ **Family ID #**_____

Teenage Parent Interview Questions

This section asks about your background experiences and home environment. Remember, we won't share your answers with anyone!

1. Your birthday:

2. Your son's/daughter's birthday:

3. How would you identify *your* cultural background?

4. How would you identify *your child's* cultural background?

5. What is your highest level of education completed so far?

6. How many brothers and sisters do you have?

7. Briefly describe your living arrangements at home (e.g., alone? with parents? with a partner? head of the household?).

8. Do you have a paying job outside of your home at this time? If yes, how many hours per week are you working now?

Coder _____ **Date** _____ **Family ID #**_____

9. Which teenage parent is primarily responsible for your child (i.e., who has legal custodial responsibilities for the child?)?

10. Briefly describe your boyfriend's/girlfriend's involvement with your child (e.g., how often does s/he visit? what type of support is offered – monetary or emotional?).

11. Briefly describe *your* parents'/relatives' involvement with your child (e.g., how often does s/he visit? what type of support is offered – monetary or emotional?).

12. What types of [daycare] activities is your child involved in during the day?

13. What activities do you share with your child at home/in the evening?

14. What were your expectations of parenting a child?

15. Is parenting a young child anything you'd expected (e.g., very hard, hard, neither hard nor easy, easy, very easy)?

Coder _____ **Date** _____ **Family ID #**_____

16. While parenting your child, what is the hardest part? easiest?

Hardest:

Easiest:

17. Approximately, how many hours per day do you spend with your child?

18. About how many adults do you feel you can count on (for help? Advice? To talk about important things?)? Who?

APPENDIX B

CONFIDENTIALITY AGREEMENT AND SCRIPTS FOR COACHES

RESEARCHER CONFIDENTIALITY AGREEMENT

During your involvement with **PROJECT BRIDGE**, you will have access to important information relating to teenage parents, their children, and families. Such information may include personal family information such as home environment situations, teenage parenting and family routines, teenage parents' reading experiences, and their relationship with their young child.

You should be aware that this information must be regarded as *confidential* information and treated with utmost privacy. Information may be disclosed only insofar as it is necessary to do your job or to serve the family to which the information relates. More specifically, information should only be discussed with other research staff in a research setting and families should only be referred to by numbers.

The obligation to keep confidential information private extends beyond the termination of your involvement with **PROJECT BRIDGE**. All information obtained during your involvement is *permanently* confidential. No documents containing confidential information may be retained by you when the research project is terminated.

Oral and written communication and/or presentations of this material need to be approved by the principal investigator, Khaliyah Williams. If you should have questions regarding any aspect of this policy, please contact Khaliyah Williams (503-280-1058), or contact the Human Subjects Compliance office directly at the University of Oregon, Eugene, Oregon (541-346-2510).

As an employee, volunteer, visitor, or research associate with **PROJECT BRIDGE**, I agree to the following:

1. To refrain from discussing material relating to individual persons and/or families with, or in the presence of, persons other than those who have signed this confidentiality agreement, except for professional exchanges which facilitate family treatment goals or authorized research needs, e.g., school, court, physician, mental health, and other social services sources.
2. To refrain from disclosing the participation of individual persons and/or families in research, intervention, demonstration, and/or treatment projects with **PROJECT BRIDGE** to persons other than those who have signed this confidentiality agreement.
3. To maintain confidentiality as outlined above both during and after my association with **PROJECT BRIDGE**.
4. To see that all files are locked, and that information is released only to authorized persons.

I understand that violation of this agreement could result in civil action.

_____ _____

Printed name **Date**

_____

Signature

Script for COACHES

Initial Greeting (i.e., consent form, interview)

- Introductions
- Thank the parent/family for making time for the research program; show appreciation!
- Use small talk to break the ice
- *Ask* "Where would be a good place to sit and talk about the project? Anywhere is fine."

Project Background

- PROJECT BRIDGE is an eight-week research program.
- Our goal is to learn more about how teenage parents can help play an important role in their child's reading skills and promote an opportunity for teenage parents/mothers to relate with their young children in a supportive way.
- We also want to promote success between teenage parents and their children.
- We are working with Khaliyah Williams, who is a graduate student at the University of Oregon. Her area of interest includes working with teenage parents & their children.
- We are also inviting other teenage parents from the local community to participate in this research program.
- Your participation is important to us. Your participation will help us to help families in your community and across the country.
- All the information gathered from your family will be kept strictly confidential. We will not share what you tell us with anyone.
- ***"What questions do you have so far?"***

Participation

- Your participation will involve several weekly visits with us. Today is the first visit.
- If you decide to participate, we will have you sign a consent form. After the consent form, we will do personal interviews & fill out some forms together.
- The interview will ask questions about your family background, your reading experiences and the reading experiences of your child, and parenting and family routines.
- Last, we will set up a convenient time to meet for the weekly visits. Visits are scheduled 2 days a week, 15 minutes each session, for 10 weeks in a row.
- The observations will focus on the reading activities you share with your child. ***To ensure your privacy***, we will videotape the observations [**you may need to explain what this means**]. This way, the only people in the room will be you and your child. We will provide you with the materials necessary to read with your child and then, we will leave the room while you read with your child.
- Again, t***o ensure everyone's privacy***, we will conduct the observations & interviews in a private setting here at _____ (name of school).
- ***What questions do you have?***

Confidentiality

- "Now I'm going to talk to you about confidentiality because it is very important to us."

- All of the information you share with us will be kept confidential. It will not be given to anyone outside of PROJECT BRIDGE staff, and will be used for research purposes only. That means your neighbors, school, other family members (or anyone else!) will not have access to the information you give us.
- Information is coded with a number that cannot be associated with your name. Any information that has both your name and number will be securely locked.
- Information gathered about your family will be combined with other families' information to provide an overview of teenage parents and their children.
- The information will not be released to any individual or agency without a signed release from you. There are only two possible exceptions to this:
  staff members of **PROJECT BRIDGE** will report to appropriate authorities 1) physical injury or abuse to any child caused by other than accidental means, as required by Oregon law; and 2) information from a study participant which leads them to believe a person is in danger of physical harm. For example, staff members may inform administrators at *name of school* if the young child is in serious physical danger.
- You should be aware that there is a risk that your confidentiality could be jeopardized. This risk exists any time there is a transfer of personal information. However, all project staff have signed a statement of confidentiality to help ensure your privacy.
- ***"What questions do you have?"***

Payment

Parent-child families are paid in appreciation for their time and participation. Payment will be offered as gift certificates to local retail stores. You will receive a total of $100.00, divided into three parts.

Family Payment for:	
Participation of PART ONE:	$20.00
Participation of PART TWO:	$60.00
Participation of PART THREE:	$20.00
Total Family Payment:	**$100.00**

Scheduling

- We realize that families have busy schedules, so we try to keep a very flexible appointment schedule for visits. You can choose morning or afternoon appointment times.
- We request that if you are unable to keep a scheduled appointment, please call me to reschedule your appointment as soon as you realize you will be unable to make it.
- ***"What questions do you have?"***

The Decision

- ***Do you want to participate in PROJECT BRIDGE?***

IF THEY SAY NO:

Ask if there are any specific concerns. Write down their concerns, if any. If they don't want to participate, thank them for their time.

IF THEY SAY YES:

"Thank you …! We will do all we can to make your participation enjoyable!"

Consent

- Signatures should be obtained in ink from parents & coaches/witness.
- Hand the [teenage] parent a consent form if they'd like to follow along as you paraphrase.

"This is your official agreement that you will participate, and that we will keep the information you provide strictly confidential (*please, make eye contact with parents).* That means we won't share what you tell us with anyone, including family members, friends, teachers, neighbors, or anyone else. We'll give you a copy of the signed consent form for you to keep, at the next visit."

You are free to paraphrase the main points of each paragraph and let them read it!

"This part lists all the ways we collect information, so please look it over."

Script for COACHES during initial interactive reading assessment

Purpose/Objective

- Provide some structure to their first activity

Coach

Prompt the mother: "Please read the story to your child."

When mother has finished reading the 1st book to the child, ask the mother the following:

1. Please ask [child's name] "what is s/he holding?"
2. Please ask [child's name] to hold the book.
3. Please ask [child's name] to open the book.
4. Please ask [child's name] to turn the pages of the book.
5. Please ask [child's name] to close the book.
6. Please ask [child's name] "what is s/he holding?"

Again, prompt the mother: "Please ask your child to go & get the other book."

Assess whether or not the child picks up the book or some other object in the room.

If the child does not pick up the book, prompt the mother: "Please pick up the book & hand it to your child."

At that point, say to the mother: "Now have [child's name] read the book to you."

Thank mother & child for completing their first session together.

Remember to schedule another time to meet.

Note: This entire assessment should occupy 15 minutes.

ID Number	Consent Forms	Stony Brook Family Reading Survey	Parent Interview	ELDOA Ax.	Treatment Integrity Questionnaire	Treatment Integrity Questionnaire	Treatment Integrity Questionnaire	Treatment Integrity Questionnaire	Treatment Integrity Questionnaire	Treatment Integrity Questionnaire	ELDOA Ax.	Stony Brook Family Reading Survey
101												
102												
103												
104												
105												
106												
107												
108												
109												
110												
111												
112												
113												
114												
115												
116												
117												
118												
119												
120												
121												
122												
123												
124												
125												
126												
127												
128												
129												
130												
131												
132												

PROJECT BRIDGE

BEGIN READING IN DYADIC GROUPS EARLY

_____
Date

I, _____ have received my gift certificate to **Safeway** in the amount of $20.

_____ _____
Signed Witness

_____
Date

I, _____ have received my gift certificate to **Toys 'R Us** in the amount of $20.

_____ _____
Signed Witness

APPENDIX C

PROCEDURES USED FOR INTERACTIVE READING SESSIONS

Read-Aloud Procedures

Overview of Procedures: **Please read a story to your child for 15 minutes during your time together** (or more if you want to!).

A. ACTIVITIES BEFORE YOU BEGIN TO READ

1. Please make every effort to be on time and sensitive to the needs of your child
2. Many of the books provided to you and your child will have heavy pages or "board books"
3. Think about voices you may want to imitate or sing, and pictures you will want to discuss with your child; feel free to become as animated as you want
4. Think about questions you can ask your child as you are reading the book to involve them in the story; it will be important to pause so that your child can fill in the blanks

B. SETTING UP THE READING ENVIRONMENT

1. You will always meet with the same coach, preferably in the same place/office at your school
2. Your assigned coach will help to arrange a comfortable environment for you and your child to read (e.g., chair, space on a mat, a quiet room with few distractions, adequate lighting, etc.)
3. Remember, you and your child leave each reading session with a book to keep

C. ACTIVITIES DURING THE READING SESSION

Opening the book

1. It will be important to allow your child a few minutes to settle down and adjust themselves to the environment and story before you begin to read

2. Arrange your child in front of/next to you and hold the book in front of them so that they can see the words and pictures

3. Open the book by showing your child the new book they are about to read and engage them in a discussion of the topic

4. On the first occasion that you read the book, show your child the front cover and tell them what it says while pointing to the words

5. If time allows, try to elicit the name of the book from your child

6. Introduce the content by encouraging them to comment on the picture or title or to link the story to real life. For example, with a book entitled "Time for Bed," you might say, "Here's a story called *Time for Bed*. It's about a little child who is getting ready for bed." Elicit a response from your child to "What do you do to get ready for bed?" Then say, "Let's see what happens when it's time for this child to go to bed."

Modeling and Tryouts

1. Model story reading by reading the story aloud to the child in a clear and animated manner

2. You may want to use your finger to underline the print as you read

3. Read the book exactly as it is printed, with enthusiasm and interest. Point out the words as you read but it is not necessary to talk about their letters or sounds.

4. Talk about the pictures and ask questions like, "Do you see the dog – where's the dog?" to help them find objects on the page.

5. It is appropriate to talk about the story by laughing with your child when it is silly or funny

6. Answer any questions your child may have about the story, pictures, or print. It helps to know that they are paying attention.

7. Have your child help you use sound effects like "mooooo" or "arf-arf."

8. If time allows you to reread the book a second time, your child may anticipate the text and begin to recite it with you. Encourage their participation.

9. Keep the pace moving and provide lots of praise to your child for paying attention and following along in the story.

Closing

1. At this time, you may want to talk about or summarize the story. Solicit their feedback too.

2. Remind your child that they get to take the book with them and can have another chance to read the book later, at home. Your child can show you, or other family members, how they have learned to use books.

D. REMINDERS

1. Some books are more difficult or less interesting to particular children. Because it is not necessary for your child to learn to read every book, it will be important to enjoy the time that you spend with your child.

2. Some children might have difficulty sitting still or paying attention to books for as long as 15 minutes. Here are some more helpful tips to help your child concentrate:

   i. Build upon the amount of time your child sits during a story. Begin with shorter sessions and increase your time during reading sessions as your child becomes more attentive to the stories.

   ii. Make sure that your child realizes that these special times together are for reading, but be sure not to punish them for being distracted.

   iii. You can stop the reading session in a pleasant way: "Well, I see that you are ready to do something else. We'll put this away for now."

   iv. Children who have trouble sitting still are often the ones who are distracted easily by noises, people moving around, or nearby objects (e.g., toys). To aid in your child's concentration, your coach will assist you with setting up an appropriate reading environment.

   v. Avoid using books as a threat/punishment for something else. For example, taking the book away from them if they don't comply immediately with your request. It could make this experience a negative one.

   vi. Enjoy this special time with your child.

Thank you!

Contact Information:
Ms. Khaliyah Williams
Phone: 503.282.3662
Fax: 503.282.3808

Project Bridge

~ Begin Reading in Dyadic Groups Early ~

Family Study

You and Your Child

1. As you read, point out objects in the pictures and make sure your child sees all the things that are fun to do with books.

2. Vary the tone of your voice, sing nursery rhymes, bounce your knee, make funny faces, do whatever special effects you can to stimulate your child's interest.

3. Allow your child to touch and sturdy cardboard books.

4. When reading to your child, be brief but read often.

Repetition & Rhyme

1. Read slowly, with a smile or a nod, and let your child know you appreciate their participation.

2. As your child grows more familiar with the story, pause and give them time to "fill in the blanks."

Poetry-In-Motion

1. Read a poem slowly to your child, and bring all your dramatic talents to the reading.

2. If there is a poem your child is particularly fond of, suggest acting out a favorite line. Be sure to award such

efforts with delighted enthusiasm.

3. Ask your child to make a face of the way the character in the story/poem is feeling. Remember that facial expressions bring emotion into the performers' voice.

4. Applause is always nice!!!

Treatment Integrity Questionnaire

1. How did things go this week?

   What was your child's favorite book?

2. About how many **times** did you have an opportunity to read to your child this week?
   (*please indicate the exact number of times*)

   1 2 3 4 5 6 7+

3. About how many minutes did **each** of the reading sessions with your child last this week?

Session 1:	0	5	10	15	20	25+
Session 2:	0	5	10	15	20	25+
Session 3:	0	5	10	15	20	25+

4. About how many **days** did you have an opportunity to read to your child this week?

   1 2 3 4 5 6 7

5. Overall, did **you** have fun reading with your child this week?

   1 2 3 4 5 6 7
   not at all somewhat very much

6. Overall, did **your child** have fun reading with you this week?

   1 2 3 4 5 6 7
   not at all somewhat very much

7. Did you have any problems? If so, what?

8. Did **your child** learn something new this week? If so, what?

9. Did **you** learn something new about your child this week? If so, what?

APPENDIX D

LIST OF STORYBOOKS BY AUTHOR AND TITLE

Author	Title
Campbell, Rod	The Pop-Up Farm
Campbell, Rod	It's Mine
Friedman, Jeannie	Ginger in the City
Griffin, Sunny	A Visit to My Grandpa's Garden
Nayer, Judy	Tricky Puppies
Ohanesian, Diane C.	Never Too Little to Help
Ohanesian, Diane C..	Charlie Comes to Town
Owen, Annie	Hungry Panda
Palmer, Gary	Three Toots for Freddie
Patience, John	Pop-Up Counting Book
Patience, John	Pop-Up Opposites
Patience, John	Pop-Up Shapes and Colors
Patience, John	Pop-Up Word Book
Straw, Wendy	Hush Little Baby
Vurnakes, Claudia Denny	The Pizza Cat
Watanabe, Shigeo	How Do I Put It On?

APPENDIX E

STONY BROOK FAMILY READING SURVEY

Stony Brook Family Reading Survey

1. **How often do <u>you</u> read a picture book with your child?**
   A. Hardly ever B. Once or twice a month
   C. Once or twice a week D. Almost Daily

2. **At <u>what age</u> did you begin to read to your child?**
   A. 0-6 months B. 7-12 months
   C. 13 months – 1 ½ years D. Later than 2nd birthday

3. **How many – total – minutes do you read to your child (*per day*)?**
   A. 0 minutes B. 1-10 minutes
   C. 11-20 minutes D. More than 20 minutes

4. **Approximately <u>how many</u> picture books do you have in your home for your child's use?**
   A. 0-2 B. 3-10
   C. 11-20 D. 21-40
   E. More than 40

5. **How often does <u>your child</u> ask to be read to?**
   A. Hardly ever B. Once or twice a month
   C. Once or twice a week D. Almost daily

6. **How much do <u>you</u> enjoy reading?**
   A. Not at all B. Some
   C. Moderately D. Very Much

7. **How often does <u>your child</u> look at books by him/herself?**
   A. Hardly ever B. Once or twice a month
   C. Once or twice a week D. Almost daily

8. **How many minutes <u>per day</u> do you spend reading (*<u>not</u> counting the time spent reading with your child*)?**
   A. Hardly any B. 2-15 minutes
   C. 16-30 minutes D. 31-60 minutes
   E. More than one hour

APPENDIX F

TREATMENT INTEGRITY/SOCIAL VALIDITY QUESTIONNAIRE

Treatment Integrity/Social Validity Questionnaire

1. How did things go this week?

   What was your child's favorite book?

2. About how many **times** did you have an opportunity to read to your child this week? (*please indicate the exact number of times*)

   1 2 3 4 5 6 7+

3. About how long did **each** of these sessions last? (*please indicate the exact number of minutes on the line*)

   ____ 0 minutes ____ 5-10 minutes

   ____ 10-20 minutes ____ 20-30 minutes

   ____ 30-45 minutes ____ 45-60 minutes

4. About how many **days** did you have an opportunity to read to your child this week?

   1 2 3 4 5 6 7

5. Overall, did **you** have fun reading with your child this week?

   1 2 3 4 5 6 7
   not at all moderately very much

6. Overall, did **your child** have fun reading with you this week?

   1 2 3 4 5 6 7
   not at all moderately very much

7. Did you have any problems? If so, what?

8. Did **your child** learn something new this week? If so, what?

9. Did **you** learn something new about your child this week? If so, what?

APPENDIX G

EARLY LITERACY DEVELOPMENT OBSERVATION ASSESSMENT

Early Literacy Development Observation Assessment

Date _____ **Coder Initials** _____ **ID #** _____

Segment I **Segment II**

Please rate the following questions according to this scale: 0 = No Opportunity 1 = no 2= yes

_____ start time _____ start time

QUESTIONS	① BEFORE PROMPT	③ AFTER PROMPT
1) Does the child talk about the pictures in the book?	O 1 O 2	O 1 O 2
2) Does the child point to pictures in the book?	O 1 O 2	O 1 O 2
3) Does the child look interested in the book (e.g., smiles, laughs, listens to mother while reading, etc.)?	O 1 O 2	O 1 O 2
4) Does the child seem disinterested in the book (e.g., looking/walking away, frown)?	O 1 O 2	O 1 O 2
5) Does the child demonstrate appropriate use of the book (e.g., holding, turning pages, sharing, anything NON-DESTRUCTIVE)?	O 0 O 1 O 2	O 0 O 1 O 2
6) Does the child demonstrate inappropriate use of the book (e.g., ripping, gnawing, throwing, anything DESTRUCTIVE)?	O 0 O 1 O 2	O 0 O 1 O 2

If the child has the book in their possession:

7) Does the child hold the book right side up?	O 0 O 1 O 2	O 0 O 1 O 2

_____ start time

QUESTIONS	② WHEN PROMPTED
1) Does the child hold the book?	O 1 O 2
2) Does the child open the book?	O 1 O 2
3) Does the child turn the pages of the book?	O 1 O 2
4) Does the child close the book?	O 1 O 2
5) Does the child respond appropriately to "what is s/he holding?" (i.e., B-O-O-K!)	O 1 O 2
6) Does the child go & pick up the other BOOK *first*?	O 1 O 2
7) Does the child go & pick up the TOY *first*?	O 1 O 2
8) Does the child go & pick up the book & the toy *simultaneously*?	O 1 O 2
9) Does the child engage the mother in the book?	O 1 O 2

_____ end time

APPENDIX H

DYADIC PARENT-CHILD INTERACTION CODING SYSTEM

DYADIC PARENT-CHILD INTERACTION CODING SYSTEM

Coder Initials _____ **Family ID #** _____ **Date Coded** _____

Time Begin _____ **Time Ended** _____

SEGMENT I **SEGMENT II**

PARENT BEHAVIORS

:15	TALLY		:30	TALLY		:45	TALLY		:60	TALLY	
DC			DC			DC			DC		
ST			ST			ST			ST		
QU			QU			QU			QU		
AK			AK			AK			AK		
UP			UP			UP			UP		
LP			LP			LP			LP		
PY +			PY +			PY +			PY +		
PY -			PY -			PY -			PY -		
CS			CS			CS			CS		
- CO			- CO			- CO			- CO		
PI			PI			PI			PI		

CHILD RESPONSES TO COMMANDS

:15	TALLY		:30	TALLY		:45	TALLY		:60	TALLY	
COM			COM			COM			COM		
NON-C			NON-C			NON-C			NON-C		
NON-C/T			NON-C/T			NON-C/T			NON-C/T		

- **DC:** direct command **ST:** statement **QU:** question **AK:** acknowledgement **UP:** unlabeled praise **LP:** labeled praise
- **PY+:** physical positive **PY-:** physical negative **CS:** critical statement **- CO:** negative command **PI:** parent ignore

- **COM:** compliance **NON-C:** noncompliance **NON-C/T:** noncompliance due to time

APPENDIX I

CODER IMPRESION RATING SCALE

SEGMENT I **SEGMENT II** **SEGMENT III**

Please rate for each pair/dyad HOW OFTEN the following occurred. Note: For TC-Mom, rate how much TC did each behavior toward Mom. For Mom-TC, rate how much Mom did each behavior toward TC.

SCALE: A lot — Sometimes — Not at all

9 8 7 6 5 4 3 2 1

OBSERVATION	TC - MOM	MOM - TC
1) Suggesting Positive Ideas	O 9 O 8 O 7 O 6 O 5 O 4 O 3 O 2 O 1	O 9 O 8 O 7 O 6 O 5 O 4 O 3 O 2 O 1
2) Acknowledging or responding to positive ideas	O 9 O 8 O 7 O 6 O 5 O 4 O 3 O 2 O 1	O 9 O 8 O 7 O 6 O 5 O 4 O 3 O 2 O 1
3) Nonresponsive or ignoring	O 9 O 8 O 7 O 6 O 5 O 4 O 3 O 2 O 1	O 9 O 8 O 7 O 6 O 5 O 4 O 3 O 2 O 1

Coder's Initials _____

Please rate for each pair/dyad HOW OFTEN the following occurred. Note: For TC-Mom, rate how much TC did each behavior toward Mom. For Mom-TC, rate how much Mom did each behavior toward TC.

SCALE: A lot — Sometimes — Not at all

9 8 7 6 5 4 3 2 1

OBSERVATION	TC - MOM	MOM - TC
4) Nonverbal expressions of engagement (e.g., winks, smiles, etc.)	o 9 o 8 o 7 o 6 o 5 o 4 o 3 o 2 o 1	o 9 o 8 o 7 o 6 o 5 o 4 o 3 o 2 o 1
5) Nonverbal expressions of disengagement (e.g., frowns, looks of contempt, etc.)	o 9 o 8 o 7 o 6 o 5 o 4 o 3 o 2 o 1	o 9 o 8 o 7 o 6 o 5 o 4 o 3 o 2 o 1
6) Negative physical	o 9 o 8 o 7 o 6 o 5 o 4 o 3 o 2 o 1	o 9 o 8 o 7 o 6 o 5 o 4 o 3 o 2 o 1

Coder's Initials _____

Please rate for each pair/dyad HOW OFTEN the following occurred. Note: For TC-Mom, rate how much TC did each behavior toward Mom. For Mom-TC, rate how much Mom did each behavior toward TC.

SCALE: A lot — Sometimes — Not at all

9 8 7 6 5 4 3 2 1

OBSERVATION	TC - MOM	MOM - TC
7) Positive Physical	O 9 O 8 O 7 O 6 O 5 O 4 O 3 O 2 O 1	O 9 O 8 O 7 O 6 O 5 O 4 O 3 O 2 O 1
8) Put-downs of persons or ideas and/or implied negative criticism	O 9 O 8 O 7 O 6 O 5 O 4 O 3 O 2 O 1	O 9 O 8 O 7 O 6 O 5 O 4 O 3 O 2 O 1
9) Negative humor/sarcasm	O 9 O 8 O 7 O 6 O 5 O 4 O 3 O 2 O 1	O 9 O 8 O 7 O 6 O 5 O 4 O 3 O 2 O 1

Coder's Initials _____

Please rate for each pair/dyad HOW OFTEN the following occurred. Note: For TC-Mom, rate how much TC did each behavior toward Mom. For Mom-TC, rate how much Mom did each behavior toward TC.

SCALE: A lot ——— Sometimes ——— Not at all

9 8 7 6 5 4 3 2 1

OBSERVATION	TC - MOM	MOM - TC
10) Complaining	o 9 o 8 o 7 o 6 o 5 o 4 o 3 o 2 o 1	o 9 o 8 o 7 o 6 o 5 o 4 o 3 o 2 o 1
11) Positive Humor	o 9 o 8 o 7 o 6 o 5 o 4 o 3 o 2 o 1	o 9 o 8 o 7 o 6 o 5 o 4 o 3 o 2 o 1
12) Directing or giving negative commands	o 9 o 8 o 7 o 6 o 5 o 4 o 3 o 2 o 1	o 9 o 8 o 7 o 6 o 5 o 4 o 3 o 2 o 1

Coder's Initials _____

Please rate for each pair/dyad HOW OFTEN the following occurred. Note: For TC-Mom, rate how much TC did each behavior toward Mom. For Mom-TC, rate how much Mom did each behavior toward TC.

SCALE: A lot — Sometimes — Not at all

9 8 7 6 5 4 3 2 1

OBSERVATION	TC - MOM	MOM - TC
13) Clear communication	o 9 o 8 o 7 o 6 o 5 o 4 o 3 o 2 o 1	o 9 o 8 o 7 o 6 o 5 o 4 o 3 o 2 o 1
14) Interruptions	o 9 o 8 o 7 o 6 o 5 o 4 o 3 o 2 o 1	o 9 o 8 o 7 o 6 o 5 o 4 o 3 o 2 o 1
15) Conflict or tension	o 9 o 8 o 7 o 6 o 5 o 4 o 3 o 2 o 1	o 9 o 8 o 7 o 6 o 5 o 4 o 3 o 2 o 1

Coder's Initials _____

Please rate for each pair/dyad HOW OFTEN the following occurred. Note: For TC-Mom, rate how much TC did each behavior toward Mom. For Mom-TC, rate how much Mom did each behavior toward TC.

SCALE: A lot ... Sometimes ... Not at all

9 8 7 6 5 4 3 2 1

OBSERVATION	TC - MOM	MOM - TC
16) Anger or Irritability	○ 9 ○ 8 ○ 7 ○ 6 ○ 5 ○ 4 ○ 3 ○ 2 ○ 1	○ 9 ○ 8 ○ 7 ○ 6 ○ 5 ○ 4 ○ 3 ○ 2 ○ 1

II. The following questions are related directly to SEGMENTS I, II, & III. Please answer the following questions accordingly. This section is looking at *frequency*:

SCALE: Very much ... Somewhat ... Not at all

9 8 7 6 5 4 3 2 1

1) Does the mother *point out objects* in the pictures?	○ 9 ○ 8 ○ 7 ○ 6 ○ 5 ○ 4 ○ 3 ○ 2 ○ 1

II. The following questions are related directly to SEGMENTS I, II, & III. Please answer the following questions accordingly. This section is looking at *frequency*:

SCALE: Very much ——— Somewhat ——— Not at all

9 8 7 6 5 4 3 2 1

2) Does the mother *vary the tone* in her voice as she reads the story aloud to her child?	○ 9 ○ 8 ○ 7 ○ 6 ○ 5 ○ 4 ○ 3 ○ 2 ○ 1
3) Does the mother *allow her child to touch* the books?	○ 9 ○ 8 ○ 7 ○ 6 ○ 5 ○ 4 ○ 3 ○ 2 ○ 1
4) Does the mother *pause and give the child time to "fill in the blanks"*?	○ 9 ○ 8 ○ 7 ○ 6 ○ 5 ○ 4 ○ 3 ○ 2 ○ 1

II. The following questions are related directly to SEGMENTS I, II, & III. Please answer the following questions accordingly. This section is looking at *frequency*:

SCALE:	Very much				Somewhat				Not at all
	9	8	7	6	5	4	3	2	1

5) Does the mother bring any *dramatic talents* to the reading (e.g., acting out a part, singing, facial expressions)?	○ 9 ○ 8 ○ 7 ○ 6 ○ 5 ○ 4 ○ 3 ○ 2 ○ 1
6) Does the mother use applause?	○ 9 ○ 8 ○ 7 ○ 6 ○ 5 ○ 4 ○ 3 ○ 2 ○ 1

III. Please rate for each pair/dyad accordingly. This section is looking at *Intensity*:

SCALE: Very much ____ Somewhat ____ Not at all

9 8 7 6 5 4 3 2 1

1) Does the mother seem to have a close relationship with her child?	○ 9 ○ 8 ○ 7 ○ 6 ○ 5 ○ 4 ○ 3 ○ 2 ○ 1
2) Does the mother seem to be overly concerned with looking good in front of the camera?	○ 9 ○ 8 ○ 7 ○ 6 ○ 5 ○ 4 ○ 3 ○ 2 ○ 1
3) Do you think being on tape influenced the mother's behavior around the reading activity?	○ 9 ○ 8 ○ 7 ○ 6 ○ 5 ○ 4 ○ 3 ○ 2 ○ 1

III. Please rate for each pair/dyad accordingly. This section is looking at *Intensity*:

SCALE: Very much ____ Somewhat ____ Not at all

9 8 7 6 5 4 3 2 1

4) Does the mother seem so shy or inhibited that it is difficult to make ratings?	○ 9 ○ 8 ○ 7 ○ 6 ○ 5 ○ 4 ○ 3 ○ 2 ○ 1
5) Does the mother seem to have a negative reaction – such as becoming angry and/or upset easily *during* the reading interaction?	○ 9 ○ 8 ○ 7 ○ 6 ○ 5 ○ 4 ○ 3 ○ 2 ○ 1
6) Does the mother try to make reading fun and engaging for the child?	○ 9 ○ 8 ○ 7 ○ 6 ○ 5 ○ 4 ○ 3 ○ 2 ○ 1

III. Please rate for each pair/dyad accordingly. This section is looking at *Intensity*:

SCALE: Very much ____ Somewhat ____ Not at all

9 8 7 6 5 4 3 2 1

7) Does the mother enjoy the activity with the child?	○ 9 ○ 8 ○ 7 ○ 6 ○ 5 ○ 4 ○ 3 ○ 2 ○ 1
8) Does the child enjoy the activity with the mother?	○ 9 ○ 8 ○ 7 ○ 6 ○ 5 ○ 4 ○ 3 ○ 2 ○ 1

Comments? Questions?

APPENDIX J

PROCEDURES AND INSTRUMENTS FOR ENGAGED TIME

PROJECT BRIDGE – ENGAGED TIME

Procedures for Coding "Engaged Time"

1. Before you begin coding, please make sure you have the materials necessary for coding the videotapes (i.e., **writing instrument, 2 stopwatches, forms for coding - 1 form per family/videotape, and the assigned videotapes**).

2. Remember to orient yourselves to the stopwatches & be prepared to begin BOTH stopwatches at the same time.

3. If necessary, rewind each session so that you can begin timing at the beginning of each session! For example, if you see that the session has begun *before* you've had a chance to begin timing with the stopwatches, please rewind the tape so that you know when to be prepared and are expecting the session to begin.

4. Here are some decision rules/guidelines we talked about for coding "engaged time":

   - We are interested in the reading behavior/engaged time of the child and not the mother.
   - **Examples of engaged time include:**
     1. The child is talking about the pictures in the book (also, the child could be talking about the book and/or reading)
     2. The child is pointing to the pictures in the book
     3. The child is looking at the book and/or pretending to read the book to the mother
     4. The child looks interested in the book (e.g., smiles, laughs, listens to the mother while reading)
     5. The child is demonstrating appropriate use of the book (e.g., sharing, holding, turning the pages, anything non-destructive)

   - If the coach enters the room, please keep the stopwatch running, as the coach is prompting "reading behavior" for the child. However, once the coach and mother asks the child the question, please wait 3 seconds to see if the child complies. If the child does not comply (or follow the guidelines of "engaged time") within 3 seconds, stop the stopwatch until the next question is asked.

     For example, if the coach and mother asks the child: "Open the book" and the child puts the book on the floor and walks away, please wait 3 seconds before stopping the stopwatch. Begin the stopwatch again when the coach and mother asks the next set of questions.

   - It is important to remember to wait 3 seconds before stopping the stopwatch, which will reflect "time not engaged."
   - **Examples of "time not engaged" include:**
   - The child does not seem interested in the book (e.g., **looking/walking away from the book, frowning, falling asleep, looking outside the window, playing with a toy, crying, whining, tantruming**, etc.).

   - When you have completed an entire videotape/per family, please remember to complete a **COIMP.** Your impression(s) will be valuable information!!!

THANK YOU! THANK YOU! THANK YOU!

PROJECT BRIDGE – ENGAGED TIME

Family ID# _____ **Coder** _____

OBSERVATION (include date completed)	COACH involved during session (Y/N)?	TOTAL TIME	TIME ENGAGED
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
25.			

* please include all of the numbers on the stopwatch (minutes/seconds/milliseconds)
* numbers on the OBSERVATION column indicate # of sessions per videotape

CO-IMP completed? Y or N?

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