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Author
Neulight, Nina

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Maternal Participation and Scaffolding

While Coviewing Educational Television

A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of Philosophy in Education

by

Nina Raquel Neulight

2012
ABSTRACT OF THE DISSERTATION

Maternal Participation and Scaffolding
While Co-viewing Educational Television

by

Nina Raquel Neulight
Doctor of Philosophy in Education
University of California, Los Angeles, 2012
Professor Aimée Dorr, Chair

This dissertation study examined how mothers participated and scaffolded while watching an educational television program at home with their 3- to 5-year-old children; whether maternal participation and scaffolding predicted children’s learning of vocabulary, sight words, and reading skills presented in the program; and reasons (i.e., maternal beliefs and program characteristics) for maternal participation and scaffolding. The study used a scaffolding lens to enrich our understanding of how parents can help their children learn from educational programs. Scaffolding has been used to conceptualize the guidance of an expert other to help children do a task or learn a concept that they could only do with assistance (Wood, Bruner, & Ross, 1976). Thirty-one mother-child dyads were observed in their homes watching an educational program. For analyses the program was divided into 70 segments, all worthy of participation. Each segment was analyzed for the types of content and formal features present. Children were
assessed before and after the observation on a subset of the vocabulary, sight words, and reading skills presented in the program to determine whether children learned after watching the program with their mothers. All mothers completed a survey prior to the observation and answered follow-up questions after the observation. The survey was used to identify the scaffolding opportunities (i.e., the places in the program mothers could scaffold since they thought that their children did not know the target vocabulary, sight word, or reading skill) and to measure the beliefs mothers had about school readiness and educational television as a tool to learn. The follow-up questions were used to situate some of the findings. Field notes, video, and audio recordings were used to record the behaviors of the dyads. Mothers participated and scaffolded less than expected while coviewing. Children learned some of the target vocabulary, sight words, and reading skills. The amount of maternal participation when there were items and skills that mothers thought their children did not know and the amount of maternal scaffolding predicted children’s learning of the target vocabulary and sight words but not children’s learning of the target reading skills. There were probable relationships between some types of maternal participation and when the program segment had vocabulary and sight words; characters; tightening of the camera; or music. There were probable relationships between maternal scaffolding and when the program segment had vocabulary and sight words; text; and voiceovers. Neither belief that was measured (i.e., about school readiness and about educational television as a tool to learn) predicted the amount mothers participated or scaffolded. The findings of this work have implications for researchers, parents, and program designers since this study describes how mothers participated and scaffolded while coviewing; shows that parental participation while coviewing an educational program made a difference in what children learned; and
suggests that a program with a strong academic content, having text on-screen, and the use of voiceovers, might relate with maternal scaffolding, which predicted children’s learning.
The dissertation of Nina Raquel Neulight is approved.

Alison Bailey
Noel Enyedy
Catherine M. Sandhofer
Aimée Dorr, Committee Chair

University of California, Los Angeles
2012
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VITA

EDUCATION

University of California, Los Angeles
Psychological Studies in Education

Stanford University, School of Education
M.A. in Learning, Design and Technology, 2002

Dartmouth College
A.B. in Spanish Literature, 1992

RESEARCH EXPERIENCE

Graduate Student Researcher,
University of California Los Angeles, 2002-2003, 2011-2012

Researcher and Educational Consultant
Thinkbox, Inc. 2005-2007

Research Assistant
Liberated Learning Project, Stanford University, 2001-2002

Teacher Researcher
Center X, University of California, Los Angeles, 1999-2000

TEACHING EXPERIENCE: K-12

Teacher, Kindergarten and grade 1
Selma Avenue, Los Angeles Unified School District, 1998-2001

Teacher, Grade 5 and Grades 7-10 Spanish and mathematics

TEACHING EXPERIENCE: HIGHER EDUCATION

Special Reader, Educational Psychology
University of California, Los Angeles, Fall 2002

Teacher Assistant, beginning and intermediate Spanish courses
Dartmouth College, 1991-1992
CREEDENTIALS

Multiple Subject Credential with BCLAD (Spanish) and supplementary authorization in Spanish and science

PUBLICATIONS


PRESENTATIONS


CHAPTER I

Introduction

There seems to be plenty of opportunity for parents to have a positive effect on what their children can learn from television, particularly from educational television. Young children (0- to 6-years-old) watch over two hours of television a day and their parents report that they are around 40% of that time (Rideout, Vandewater, & Wartella, 2003); children learn from what they watch on television; and what parents do with their children can make a positive difference in what children learn.

It seems relevant to update what we know about parental mediation of children’s television viewing. Much of what we know about parental mediation has been informed by research from the 1970s and 1980s. There have been many technological advances in how we access educational programming and what parents can do when educational programs are being viewed. This prompts us to wonder whether what we know about parental mediation is out-dated. Parents now might be participating differently while watching television than in the past.

In addition, we know little about how parents mediate while cviewing educational programs with their children. Most of the studies used self-reported data; only reported whether or not the parents cviewed with their children; and/or did not use a scaffolding lens to conceptualize how parents guided their children. This leads us to wonder how parents are participating and, in particular, what parents do while cviewing to help their children’s learning. Using a scaffolding lens can enrich our understanding of how parents can help their children learn from educational programs. Scaffolding has been used to conceptualize guidance of an adult or expert other who helps children do a task or learn a concept that they could only do with assistance (Wood, Bruner, & Ross, 1976).
It is important to know whether parental participation or scaffolding helps children learn from educational television. Past research affirms that, in general, adult guidance while a child watches television generates positive results for a child’s learning (Ball & Bogatz, 1970; Rice, Huston, Rosemarie, & Wright, 1990; Salomon, 1977). However, as said before, the majority of these studies did not detail what it was that parents did, other than coviewing that made a difference in what their children learned. Research in other domains (e.g., book reading, using computers, language development, and instruction) indicates that some ways that adults guide their children make a greater impact than do other ways on what a child can learn and the activities and tasks the child does (Hargrave & Sénéchal, 2000; Hart & Risley, 1995; Lonigan & Whitehurst, 2000; Neuman & Celano, 2006). In addition to what parents do with their children during activities, the amount a parent speaks with a young child seems to have a relationship on a child’s language development, specifically the amount a parent spoke to his or her child related to the child’s vocabulary size (Hart & Risley, 2003).

We should also know why parents participate and scaffold in the ways they do while coviewing educational programs. In this way, we might see what, if anything, motivates parental participation, in particular that which guides children when they encounter an item or skill that they might not know. It could be that the program characteristics inform how mothers participate and scaffold. Many educational programs (e.g., Sesame Street) have been designed, through its content and the formal features (i.e., production techniques used to deliver the content), to encourage viewers to participate in particular ways (Fisch & Truglio, 2001). Some program characteristics have been related to viewer participation and attention to the program (Anderson, Lorch, Field, & Sanders, 1981; Barr, 2008; Fisch & Truglio, 2001; Wright & Huston, 1983).
Other factors beyond the program characteristics could motivate parents to participate and to scaffold in the ways they do, such as beliefs mothers have about school readiness (e.g., about children learning language and literacy skills and content) and about the role of educational television. These beliefs have been associated with how parents have participated with their children (Austin, Bolls, Fujioka, & Engelbertson, 1999; Dorr, Kovaric, & Doubleday, 1989; Reese, Garnier, Gallimore, & Goldenberg, 2000). Specifically, parents with different beliefs related to parental participation during coviewing television and activities planned with their children.

The primary goals of this dissertation study were to get a current portrayal of how mothers participated and how they scaffolded while coviewing an educational program with their 3- to 5-year-old children; determine whether maternal participation and scaffolding predicted children’s learning of vocabulary, sight words, and reading skills that were presented in the educational program all participants watched; and examine the reasons mothers participated and scaffolded in the ways they did.

A focus of this dissertation study was to determine how mothers might have helped their children learn some language and literacy skills while watching an educational program and how mothers might have helped them learn these skills. Language and literacy development has been a characteristic area for preschool preparation; it also has been the focus of much educational television that has academic content (Crawley, Anderson, Wilder, Williams, & Santomero, 1999; Linebarger, 2001; Linebarger, Kosanic, Greenwood, & Doku, 2004; Rice, Huston, Rosemarie et al., 1990; Rice & Woodsmall, 1988; Singer & Singer, 1998).

In this study, 31 mothers and their 3- to 5-year-old children were observed coviewing an educational program focused on language and literacy concepts and skills (i.e., vocabulary, sight
words, and reading skills). The ways mothers participated throughout the program were described in order to update what we know about how parents participate while co-viewing. The ways mothers scaffolded were identified by looking at the strategies mothers used during the particular places in the program when they thought that their children did not know the target skill or concept being presented or discussed in order to enrich our understanding of how parents can help their children learn. For a mother’s behavior to be coded as scaffolding, the behavior needed to be a scaffolding strategy and be used in relation to a target item or skill (i.e., a subset of the program content) that the mother thought that her child did not know. Only a subset of the program vocabulary, sight words, and reading skills were tracked, which were referred to in this dissertation as the target skills and items. It is possible that mothers could have scaffolded for their children at other times during the program on items and skills that were not measured or tracked and/or scaffolded learning of the target skills and items at times other than during co-viewing.

This study also identified some of the types of content and formal features that were used in the program and measured two beliefs of mothers and examined their relationship to mothers participating and scaffolding in the ways they did. One belief was about how mothers valued young children to have early educational experiences and to learn language and literacy content and skills before they entered Kindergarten. The other belief was about how mothers valued educational television as a tool for young children to learn language and literacy content and skills.

Based on the reasoning provided earlier, it was expected that mothers in this study would participate throughout the program and scaffold often. It was expected that some of the program characteristics (i.e., some of its content and formal features) would relate to how mothers
participated and scaffolded while coviewing. Also, it was expected that the beliefs mothers had about school readiness and educational television as a tool to learn would predict the amount mothers participated and scaffolded while coviewing an educational program. Specifically, it was expected that mothers who believed that children should participate in early educational experiences and acquire skills or who believed that educational television was an effective tool to learn would predict the amount they participated and scaffolded while coviewing. Finally, it was expected that the amount mothers participated and scaffolded while coviewing would predict children’s learning of vocabulary, sight words, and reading skills.

Research motivated by the belief that children watch television passively or the fact that television and media present negative content is not addressed in this study. Specifically, work on restrictive mediation (e.g., setting rules about time spent watching television and programs watched) is not included as it has been motivated by concerns about watching too much television or concerns more closely associated with children’s viewing of adult programs, advertising, and violence (Bybee, Robinson, & Turow, 1982; Nathanson, 2001; St. Peters, Fitch, Huston, Wright, & Eakins, 1991; Valkenburg, Kremar, Peeters, & Marseille, 1999; van der Voort, Nikken, & van Lil, 1992; Vandewater, Park, Huang, & Wartella, 2005). In the rest of this dissertation, a single term, watching television, will refer to the viewing of television, videotapes, DVDs, and DVR (Digital Video Recorder). The term educational television will be used in reference to educational and informational programming. Rather than focusing on the negative aspects of television, this study focused on positive aspects of television by looking at how mothers might help their children learn while watching educational television.
CHAPTER II

Background

This chapter provides a rationale for the dissertation study by (a) reviewing ways parents have mediated in their children’s television viewing; (b) illustrating ways parents and adults help children learn in various activities; (c) demonstrating how television program characteristics influence how viewers participate; (d) highlighting how television has been used as a medium to learn language and literacy skills and concepts; and (e) showing how parental beliefs influence parental practices.

Parental Mediation While Children Watch Television

The literature about parental mediation of children’s television viewing informs us about how parents have been involved while their children watched television and some of the positive outcomes of parents coviewing with their children. Past research on parental mediation of children’s television viewing consistently identified three ways that parents mediate their children’s television viewing in three ways – active mediation, coviewing, and restrictive mediation (Bybee et al., 1982; Valkenburg et al., 1999; van der Voort et al., 1992; Warren, 2005). Two of these ways, active mediation and coviewing, particularly inform the research design of this study. Active mediation refers to how parents discuss the program content before, during, and after their children watch television (Austin, 1993; Valkenburg et al., 1999). Coviewing refers to the time when adults and children watch television together (Valkenburg et al., 1999) and mainly has been examined apart from active mediation (Austin, 1993; Dorr et al., 1989; Salomon, 1977; Warren, Gerke, & Kelly, 2002).

The literature about restrictive mediation, which describes the rules parents set about what children watch and for how long (St. Peters et al., 1991; Vandewater et al., 2005), was not
used to inform this study. The rationale for this choice is that restrictive mediation is directed primarily at how parents reduce the potential negative effects of spending too much time watching television, watching age-inappropriate programs, or undesirable content—none of which is a concern when the focus is on educational programs as it was in this study.

**Parental participation during coviewing.** Studies have demonstrated that parental coviewing had positive effects on child outcomes (Ball & Bogatz, 1970; Dorr et al., 1989; Rice, Huston, Rosemarie et al., 1990; Salomon, 1977). Some of the learning outcomes have been letter and number recognition; receptive and expressive vocabulary development; and content comprehension (Ball & Bogatz, 1970; Rice, Huston, Rosemarie et al., 1990; Salomon, 1977). While these studies showed that coviewing has a positive effect on children’s learning, these studies did not describe the types of behaviors parents did that might have been associated with children’s learning. Also, these studies about whether coviewing had an effect on children’s learning took place in the 1970s and 1980s. Since then, there have been changes in what and how parents can access age-appropriate educational programs for their children.

The ways that television can be watched today in an on-demand climate are different from when most of the research on parent mediation of children’s television viewing was conducted, when programs could only be watched at their broadcast time. Today there is a wide range of educational programs available for young children and multiple ways to access that content. These circumstances might impact how parents participate in their children’s viewing of television. With greater access to children’s programming and more program selections, children and parents can more easily select programs that are age-appropriate, familiar, and appealing to a child. With technological changes, parents can pause a show, repeat a part, or skip commercials.
We know generally the ways that parents have mediated while their children watch television in general or about news or advertising and less about how they have mediated while their children watch educational television in particular. Many of the studies that have examined active mediation practices based their findings on parent reports (Austin et al., 1999; Bybee et al., 1982; Valkenburg et al., 1999; van der Voort et al., 1992; Warren et al., 2002). As exceptions, Stoneman and Brody (1982, 1983) recorded verbal communications of mothers watching television with their children and Barr (2008) directly observed of mothers and their infants watching educational programs at home. Findings of how parents mediate while coviewing show that parents provide clarifying and supplementary information (Austin, 1993; Valkenburg et al., 1999). Barr (2008) provided more details about how parents participated than previous studies about coviewing. For example, while coviewing a 30-minute educational program with their infant children, parents used the program content to ask questions; label and describe items; and make connections between the infant’s experience and the program. These parents also provided feedback to their children; directed their children’s attention, and helped their children interact with the program.

Methods to obtain data about parental mediation. Studies that have relied on parent-reported and sometimes child-reported data provide the researcher with valuable information. The researchers can ask participants questions specifically designed to access information that might not be revealed if the participant were directly observed; infrequent actions can be reported; and behavior can be aggregated over time to report what usually happens. Also, by using self-reports, parental behavior has not been influenced by the direct observation of a researcher or by a recording device.
These self-reported data also have limitations. The parent report relies mainly on what is being asked of the study participant and results may be skewed by how truthful parents are in reporting and how much parents remember (Messaris & Sarett, 1981). Parents may label or interpret their behavior differently than would someone directly observing it. As pointed out by Scarborough and Dobrich (1994) in their review of methodologies to study shared book reading, parents might feel they need to provide the socially appropriate responses to the researcher. Similarly, with television viewing, parents may over-report certain items such as the importance of educational television and under-report others such as the amount of television watched in the house (Messaris & Sarett, 1981).

In a naturalistic observation a researcher can record more of what is happening in the environment (e.g., content of program; number of people viewing; distractions; and both non-verbal and verbal interactions between child and parent) than can be gleaned from self-reports, in-home video recordings, or audio recording. It might take some time for study participants to become accustomed to an observer’s presence, so repeat observations help make the participants feel more comfortable and prone to act more naturally (Hart & Risley, 1995; Messaris & Sarett, 1981). Some limitations of naturalistic observations are that not all behaviors can be observed and recorded (Hart & Risley, 1995) and the behaviors observed are not necessarily those that happen all the time (Scarborough & Dobrich, 1994).

Researchers have advocated that there should be research about how television is being watched. Barr (2008, p. 53) stated, “How these media are used might be as important as the fact that they are being used at all.” The question becomes which methods to use in order to describe how people watch television. While the literature about parental mediation of children’s television viewing informs us about how parents have mediated in their children’s viewing of
television and some of the positive outcomes of parents co-viewing with their children, the majority of studies about parental mediation of children’s television viewing did not detail what parents did to help their children learn nor describe how parents used the current capabilities of technology with their children. A reason for this is that the bulk of the research on how parents have mediated their children’s viewing of educational television and whether what they did had an effect on what children learned has been informed by self-reported data.

**Ways Parents Help Children Learn**

The research about parental mediation in other learning situations demonstrates that the ways parents mediate might have an effect how children participate and also might improve learning. Studies have supported that parental guidance can be beneficial while children use computers; parents talk with their children; and parents and children read books together. In a study about how children engaged with materials (e.g., books and computers) at four public libraries, Neuman and Celano (2006) associated parental guidance while children were doing computer activities with ways that children used the computers. Children who had more parental guidance engaged in more sophisticated computer activities, while those with limited or no parental guidance often used the computers as play or stopped using the computer (Neuman & Celano, 2006). In a study about parents talking with their children, Hart & Risely (2003) found that the amount parents talk to their children related to how much children talk and the size of children’s vocabulary (Hart & Risley, 2003). Also, Hart and Risely (1992) found in their home observations of forty families that families of higher socio-economic status (SES) spoke more to their children than families of lower SES.

In a shared reading intervention by Lonigan and Whitehurst (2000), parents were taught how to read to their preschool-age children using dialogic reading, a different method than
typically used during book reading. With dialogic reading, parents asked their children open-ended questions and asked their children to label objects in the books so that the children could produce more oral language than otherwise. Results showed that children with the dialogic reading intervention showed significant change in their expressive vocabulary than children without the intervention. Hargrave and Sénéchal (2000) also found that dialogic reading was an effective way for children to learn expressive vocabulary. Also, children who had read with a parent showed more change in their expressive vocabulary than children who had read with a teacher in a group setting (Lonigan & Whitehurst, 2000). This last finding suggests that individual parental guidance might help children’s oral language development.

**Scaffolding as a Way to Help Children Learn**

Knowing the ways that parents help their children learn a new task or perform differently might help other parents so that their children can also learn or perform differently. A way to do this is to characterize some of how parents might help their children learn by identifying how they scaffold. Scaffolding is a metaphor that has been widely used in different contexts, both in formal and informal settings, with a parent and with a teacher. Wood et al. (1976) first applied the scaffolding metaphor to learning as a way to describe what an adult or expert other does to help a child do a task, solve a problem, or achieve a goal that he or she would not be able to do unassisted. Since its introduction into learning, scaffolding has been used to describe how young girls learned to weave from their mothers in a Zinacantec Maya community in Mexico during the 1970s (Greenfield, 1999; Greenfield, Maynard, & Childs, 2000) to how children engage in classroom discourse (van de Pol, Volman, & Beishuizen, 2010). There have been variations in how scaffolding has been conceptualized, the methodologies used to examine scaffolding, and how its effectiveness has been measured (van de Pol et al., 2010).
Early studies about parental mediation of their children’s viewing of television have not differentiated a parent’s mediation as scaffolding. Recently, Barr et al. (2008) examined how parental scaffolding predicted infant’s attention and responsiveness to program content. Because scaffolding is “a way to understand how new abilities come into being” (Granott, 2005, p. 140), it is important to examine how parents might scaffold their children’s learning while co-viewing. In this way, we might better understand the ways in which parents guide children to understand concepts and skills presented in educational programs that might be a little beyond but not too beyond what the child could do alone.

Scaffolding has been referred to as a dynamic process in that what a child comes to know or does changes over time (van de Pol et al., 2010). For example, an adult who does a particular behavior might scaffold for a child who does not know a skill or concept and that skill or concept is within the reach of the child but with assistance. However, the same adult or even another adult who does the same behavior for a child who knows the skill or concept or the skill or concept is beyond the reach of the child, even with assistance is not scaffolding. As the learning process progresses, there should be a transfer of responsibility in that the child can gradually do more of the task alone, without assistance and the adult or expert other is doing less (van de Pol et al., 2010). Scaffolding has been characterized as an active process for both the child and adult (or expert other) in that scaffolding fades when the child is less challenged and ends when a child has mastery of the skill (Rogoff, 1990; Tharp & Gallimore, 1988). Because maternal behavior was observed only during a comparatively short educational video, there was no reason to expect fading of scaffolding during the period of data collection and no way to know where in the fading process any observed scaffolding behavior might fall.
Many researchers have used the concept of the Zone of Proximal Development (ZPD) with scaffolding (Barr, 2008; Carr, 2012; Jadallah et al., 2011; van de Pol et al., 2010). A child’s ZPD is what he or she can do with the assistance of a more skilled partner but cannot yet do on his or her own. It is a little beyond what a child currently can do alone and has been referred to as what a child can do tomorrow (Vygotsky & Cole, 1978). Lonigan and Whitehurst (2000) hypothesized that parents scaffolded children’s learning more effectively than in a group setting since parents were more readily able to have their child perform in his or her ZPD (Lonigan & Whitehurst, 2000).

There have been different ways to characterize the behaviors parents or adults did as scaffolding. In a review article about studies that examined how teachers scaffolded Van de Pol et al. (2010) identified six strategies (i.e., feeding back, giving of hints, instructing, explaining, modeling, and questioning) that could lead to scaffolding. Whether there was scaffolding depended on the specific context (i.e., whether the task is within the child’s ZPD) in which the behavior occurred. Other studies (Barr, 2008; Lonigan & Whitehurst, 2000) automatically classified behaviors as scaffolding based on the nature of the behaviors (e.g., asking different types of questions, labeling, and describing). There also have been different outcome measures to examine the effects of scaffolding. Some studies have focused on how the child responds to the content or the adult during scaffolding (Bailey, 2007; Barr, 2008; Jadallah et al., 2011). Other studies have focused on what children can do after scaffolding (van de Pol et al., 2010).

**Television Program Characteristics as Influential to Participation**

The ways that viewers participate while watching television can also be related to some of the program characteristics – both the content and the ways that the content have been presented, through formal features. Formal features of television are techniques used to produce
and edit the program that help a viewer attend to and understand the content presented (Lee & Huston, 2003; Wright & Huston, 1983). Wright and Huston (1983, p. 836) have distinguished formal features from the content of a program with the following example: “The presence or absence of dialogue is the formal feature; what is said [if there is dialogue] is the content.” Some examples of formal features are voices, dialogue, laugh tracks, music, sound effects, zooms, cuts, pans, dissolves, and special effects.

**Types of program content.** The content of educational programming can impact how parents participate in their children’s viewing. Some parents might need to guide their children less during programs in which children are exposed informally on a daily basis (e.g., getting along) than during programs in which children are more formally introduced to educational material (e.g., letter recognition and sign language). The types of educational programs children can watch range from prosocial (e.g., sharing and friendship) to academic (e.g., language, literacy, and mathematics). As an example of variety in program content, Jordan (2000), in a study of the content of educational and informational programs in Philadelphia during the 1999-2000 broadcast year, found that most programs contained content that was prosocial (45%) or academic (41%), while a small portion of the programs focused on physical well-being (4%); more than one content area (7%); or did not have a clear lesson (3%). However, this study was limited in that the programs were not sub-grouped according to age group (e.g., preschool-age, elementary-age, and adolescence) and in that it was representative of Philadelphia only during one broadcast year only. Nonetheless, everyday experience suggests that the range and distribution of program types that Jordan found in Philadelphia a decade ago would be found today.
**Formal features.** The majority of research about how formal features relates to viewer participation focuses on the viewer’s attention to the program or comprehension of the material presented (Salomon, 1979; Watkins, Calvert, Huston-Stein, & Wright, 1980; Wright & Huston, 1983). Some formal features that have been associated with getting young children’s attention are having a range of characters with variations in race and gender; children’s voices; strange and peculiar voices; child-oriented language; catch phrases or repetition in how program is sequenced; slow pace during long segments; fast pace during short segments; separators between segments; pausing and having the program characters make mistakes or hesitating to allow for viewer participation; and having humor (Anderson et al., 1981; Fisch & Truglio, 2001; Wright & Huston, 1983). The present study examined how program characteristics might have related to parental participation and scaffolding rather than how they related to the viewer’s attention or comprehension. It was expected, however, that the same techniques found to be related to attention and comprehension would also be related to mothers’ participation while co-viewing.

There have been some studies that examined how specific formal features had an effect on other behaviors of the viewer. For example, program characters interacting with the viewer; labeling objects; and leaving time for the child to respond were positively associated with a child’s oral language development (Linebarger & Walker, 2005). Also, having a character pause before saying answer (i.e., the *James Earle Jones Effect*) prompted the viewer to participate and say what was on screen before the character did (Fisch & Truglio, 2001). During this segment with the *James Earle Jones Effect*, there was more than one formal feature at play that might have related to viewers participating – having the letter on screen, having a character, and having the character pause. This suggests that the ways a viewer participates could be related to the group of formal features rather than a single feature. Mayer and Moreno (2002) demonstrated
some formal features grouped together were more effective for learning than other groups. For example, college students showed better comprehension of science material when the material was presented with verbal instructions and printed text than accompanied with graphics (Moreno & Mayer, 2004).

The relation between program characteristics and viewer participation has been analyzed by looking at a viewer’s behaviors while a characteristic or a set of characteristics was present during the entire program or particular segments. Barr (2008) examined whether prior exposure to a child’s educational program related to a child’s attention when particular features were present during an entire educational program. In their study, the percentage a child a looked at the screen (i.e., looking time) of the total time the formal feature was present during the program was calculated. The relationship between a viewer’s behavior during a single segment, rather than the entire program, with a particular program characteristic or set of program characteristics (e.g., labeling of letters and asking the viewer to participate) also has been examined (Fisch & Truglio, 2001).

**Television as a Medium to Learn Language and Literacy Skills and Concepts**

Television continues to be an effective medium to introduce and teach a wide range of content to young children, particularly emergent language and literacy skills, the skills prior to reading and writing (Fisch, 2004; Linebarger et al., 2004; Linebarger & Walker, 2005; Naigles & Mayeux, 2001; Rice, Huston, Rosemarie et al., 1990; Rice & Woodsmall, 1988). Emergent language and literacy skills are the skills children develop before reading and writing (Whitehurst & Lonigan, 2001). Relevant to this study was how parents helped their children learn vocabulary and reading skills from an educational program. This review of the literature focuses primarily on children’s learning vocabulary from television because there have been
more studies focused on vocabulary development than reading.

Television is an especially effective medium to present oral vocabulary that might not surface often or may not be retained well if presented solely through children’s everyday interactions. For example, a television program can be developed to present words multiple times and in different contexts, a task that is often more difficult to achieve without television (Rice & Woodsmall, 1988). Vocabulary acquisition has been studied extensively as an outcome of young children’s television viewing and findings show that young children learn receptive and expressive vocabulary from television (Crawley et al., 1999; Linebarger, 2004; Linebarger & Walker, 2005; Rice, Huston, Truglio, & Wright, 1990; Rice & Woodsmall, 1988; Singer & Singer, 1998). For example, in a longitudinal study of children 6-months to 2.5-years-old, Linebarger et al. (2005) associated the viewing of certain children’s programs (e.g., Blue’s Clues, Dora the Explorer, Arthur, and Clifford) with more expressive (i.e., oral) language production per month than the viewing of other programs, which they associated with fewer words produced per month (e.g., Teletubbies and Barney & Friends) or which they found unrelated to expressive language production (e.g., Dragon Tales, Sesame Street, and Disney movies). From these findings we also can infer that some program characteristics – either through the content that is presented or the techniques used to present that content – are more effective to help children learn oral language than other programs.

**Parental Beliefs as Influential to Parental Participation and Scaffolding**

**Parental beliefs about learning and television.** Educational programs tend to have the intention to be instructional. However, some parents might think that their children should not learn what is being instructed and/or might not buy into whether children actually can learn from a television program. Part of the reason for this could be due to beliefs parents have –
particularly whether young children should be participating in certain learning activities or acquiring certain skills and whether television is an effective learning tool.

Parents have different beliefs about which aspects of social, emotional, and cognitive development to emphasize in their child’s upbringing. In a longitudinal study of families that were immigrant and Latino living in Los Angeles, Reese et al. (2000) found that two-thirds of the sample believed that preschool-age children had not reached the age to reason (i.e., la edad de razón). This finding gives reason to believe that parents of preschool-age children might have divergent opinions about the kinds of social, emotional, and academic experiences young children should have. This is in line with preschool curricula, with different preschool curricula emphasizing certain areas of development more than other areas of development (Kagan, Moore, & Bredekamp, 1995).

Parents also have different beliefs about how educational television influences children’s learning (Rideout et al., 2003). The Kaiser Family Foundation (2003) in their national survey of parents of 0- to 6-year-olds reported that about half of the parents (58%) thought educational television was very important for children’s learning and nearly half (43%) thought that educational videos and DVDs were very important for children’s learning. The rest of the parents reported that television, videos and DVDs neither hurt nor helped or just hurt children’s learning.

**Relation of parental beliefs to parental participation.** These two parental beliefs (i.e., about academic experiences and skills young children should have and about television as a tool to learn) have been related to how parents have mediated their children’s general activities and their television viewing. Reese et al (2000) found that the parental beliefs about whether their children were ready to learn manifested in parental practices, with some parents not reading to their preschool-age children since they believed their children were not yet ready to understand.
Dorr et al. (1989) found that certain beliefs parents had about television programs about families (e.g., the extent to which programs about families could help children get new information and learn good lessons) were significantly associated with the frequency parents co-viewed programs about families with their children in second-, sixth-, and tenth-grade. Austin (1999) found that parental beliefs about appropriate uses of general television (e.g., television as a babysitter and television as a learning tool) related to how they mediated their children’s viewing of television (e.g., affirming or contradicting the content of television). While the relationships between certain parental beliefs and certain forms of mediation have been examined, the relationship between parental beliefs and active mediation during educational programming in particular – a focus of this study – has not been examined.
CHAPTER III

From Background to Research Questions

The preceding Background chapter presented information that motivates the research questions for this study. It is clear that parents now have more options to mediate their children’s television viewing than in the 1980s when much of the research about parental mediation was conducted. The research about parental mediation of their children’s viewing of educational television, and research in other learning situations, demonstrates that parental mediation might help children learn. Most of the data informing our understanding of how parents mediate their children’s viewing of educational television have been derived from parent reports rather than naturalistic observation. Additionally, the majority of studies did not consider the role of scaffolding, a particular kind of mediation that other research suggests is especially effective in promoting learning.

It is important to examine how parents guide their young children at home while watching television, particularly educational television, in an on-demand environment. It is also important to examine the reasons parents might behave in the ways they do. This study examined some of those reasons. First, the program’s characteristics, its content and formal features, might play a role in how parents participate and scaffold. Also, there is some evidence indicating that parental beliefs about school readiness and television as a tool to learn might be associated with how parents participate while their children watch educational television. Beliefs may operate powerfully in today’s media environment in which it is much easier to bring educational content into the home and to use it in educational ways.

In this study the researcher observed a child watching educational television at home with his or her mother or female guardian in the vicinity. All mother-child dyads watched the same
program, *Showy Show: The Preschool Show*, an educational DVD for preschool-age children, provided by the principal investigator. During the observation, it was expected that a mother would mediate her child’s viewing and, in particular, scaffold her child’s learning of target vocabulary, sight words, and reading skills that were presented in the program that mothers and children watched together.

A primary goal of this study was to obtain first hand evidence about how mothers participated while coviewing an age-appropriate, educational program at home. This study used naturalistic observations to describe how mothers participated while coviewing. The naturalistic observations also were used to contextualize how mothers participated and scaffolded with the program characteristics (e.g., type of content and formal features). Parent self-reports were used to help determine whether mothers scaffolded their children’s learning of the target vocabulary, sight words, and reading skills.

Another goal of this study was to see how mothers scaffolded their children’s learning of the target vocabulary, sight words, and reading skills. Scaffolding, as conceptualized in this study, took place when a mother used a scaffolding strategy in relationship to a target item or skill presented in the program that the mother thought her child did not know. Children were assessed on the target vocabulary, sight words, and reading skills (i.e., items and skills presented in the program). This study also looked at what children knew of these items and skills before and after coviewing in order to see if maternal participation or scaffolding related to what children knew after coviewing.

**Research Questions**

This study addressed four research questions:
(1) How do mothers participate and scaffold while coviewing an educational television program with their 3- to 5-year-old children at home?

(2) Do certain program characteristics (i.e., the type of content being delivered and how it is delivered through the program’s formal features) relate to maternal participation and scaffolding? If yes, in which ways?

(3) Do maternal beliefs about school readiness (i.e., how mothers valued young children to have early educational experiences and to learn language and literacy content and skills before they enter Kindergarten) and television as a tool to learn (i.e., how mothers valued educational television as a tool for young children to learn language and literacy content and skills) predict maternal participation and scaffolding? If yes, in which ways?

(4) Do maternal participation and scaffolding predict children’s learning (i.e., vocabulary, sight words, and reading skills) after coviewing an educational television program? If yes, in which ways?
CHAPTER IV
Methods

Participants

In order to participate in this study the child needed to meet the following criteria: (a) be 3- to 5-years-old and have had some experience attending preschool, daycare, or childcare at the time of the study since the program everyone watched was about preschool; (b) watch television, DVDs, or videotapes on a regular basis, at least five times a week for at least one-hour a day; (c) be from an English-speaking family; (d) watch television, DVDs, or videotapes when his or her mother is at home; (e) have an operable DVD-player; and (f) be of a middle-class family (i.e., household’s annual gross income between $35,000 and $250,000). The researcher asked the mother if the child met the above inclusion criteria during recruitment.

Thirty-one mother-child dyads participated in this study. There were 34 dyads that started the study. Three were dropped from the study for these reasons: the researcher developed a close relationship with one mother after the first visit; one mother did not coview with her child during the observation; and one child took the post-assessment 10 days after he watched the program. Of the 31 participants, there were 15 boys and 16 girls. There were 8 children who were 3-years-old, 16 who were 4-years-old, and 7 who were 5-years-old. Attempts were made to get an equal distribution of 3-, 4-, and 5-year-olds. However, participant recruitment proved more challenging than anticipated. For each age group, there were roughly equal numbers of boys and girls. Each participating family received a DVD of the program that all dyads watched (i.e., Showy Show: The Preschool Show) which they could keep after the study if they wanted. There was no monetary payment for participation.

Researcher

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The principal investigator, also referred to as researcher, conducted all aspects of research. She holds a multiple-subject teaching credential with a Bilingual, Cross-cultural, Language, and Academic Development (BCLAD) certificate in Spanish; has eight years teaching experience in K-12 schools (public and independent); assisted in the curriculum development of *Showy Show: The Preschool Show*; and appeared in a non-speaking role as the preschool teacher in some video portions of *Showy Show: The Preschool Show*. Some mothers and participating children recognized the researcher in the program. During the writing of the proposal for this dissertation, the principal investigator conducted pilot work, in which she observed two parent-child dyads watching educational television and *Showy Show: The Preschool Show* at their home and also observed and recorded the behaviors of 3-, 4-, and 5-year-old children watching a prototype of a live action program with academic and prosocial content produced by Nickelodeon. The home visits and research with Nickelodeon informed the research design of this study, in particular the kinds of data that could be recorded during direct observations of children watching television. The researcher participated in other observation experiences that were relevant to the present study in which she used field notes; pre- and post-assessments; focus groups; and video recording of students and teachers.

**Educational Television Program**

The educational program used during the home observation visit was a DVD of *Showy Show: The Preschool Show*. The 25-minute program had a magazine format; described the daily activities at a preschool; used a variety of formal features that were relevant to the thesis of this study; and drew upon techniques that have been effective in educational programming and preschool curriculum. The format of the program was informed by the High/Scope Preschool Curriculum, a widely used preschool curriculum (Hohmann, Weikart, & High/Scope Educational
Research Foundation, 2002). The program’s story line was that the three main characters were putting on a show about preschool. These characters discussed items and concepts that had to do with preschool and invited the viewer to sing, answer questions, and do movements that had to do with the target vocabulary, sight words, and reading skills.

The program contained a range of emergent language and literacy skills that would likely target many abilities and support learning for the youngest and oldest viewers, from 2- to 6-years-old. Some of the skills presented in Showy Show: The Preschool Show were likely outside of some of the participating children’s ZPD, either because the child already knew the item or skill (e.g., some of the vocabulary items) or the skill was too advanced for the child (e.g., reading sentences). However, it was anticipated that many of the vocabulary, sight words, and reading skills presented in the program might be within the children’s ZPD.

During analysis the program was divided into 70 segments in order to identify the types of content and the formal features used; opportunities mothers could scaffold target vocabulary, sight words, and reading skills; and interactional patterns between a child and mother. The segments were based on changes in style, characters, and targeted learning outcomes. The duration of the segments varied from 1 second (i.e., animated applause) to 96 seconds (i.e., a song interspersed with video clips) and the mean duration of a segment was 21 seconds ($SD = 23.62$).

**Measures**

Preliminary coding schemes were developed prior to the observations and data analyses. The coding schemes were augmented and modified after the data was collected using an iterative process, which involved discussing the codes with three additional researchers.
Program characteristics. Program characteristics were used to answer the second research question about whether program characteristics related to maternal participation and scaffolding. Program characteristics consisted of the type of content presented and the formal features (i.e., audio and visual techniques used to deliver the content). Appendix A has descriptions of the program characteristics (i.e., type of content and formal features).

Tracking the type of content. There were five types of content tracked: vocabulary and sight words; reading; prosocial (e.g., feelings and cooperation); and story related content (e.g., the characters putting on a show). These types of content were selected because they are standard types of content found in educational programming and/or were significant for this study. To code the type of content the researcher watched and listened to each segment. The language and literacy content (i.e., vocabulary, sight words, and reading) was a main focus of this study. It was anticipated, as mentioned earlier, that most of the target items and skills presented in Showy Show: The Preschool Show might be within the children’s ZPD. As mentioned earlier, scaffolding was coded as occurring only if a mother used a strategy in relation to one of the target items or skills.

The seven target vocabulary and sight word items were selected since they were items and skills that some pre-school children might not know but ready to learn they appeared and they appeared frequently throughout the program. The target vocabulary items were presented in skits, songs, and live action footage. Of the seven vocabulary items, three of these items (i.e., happy, share, lunchbox), referred to in this study as the target sight words, were presented as text with accompanying narration at various times. A similar format was used to present each of the three sight words. The sight words were introduced on a vertical list on a main character’s clipboard and were listed in the order in which they were presented. The meanings of the
vocabulary and sight words were explained through songs, skits with the main characters, and live action footage. The three sight words were presented in a similar format. After the presentation of the meaning an individual sight word, the text of that sight word was presented with a voiceover of a child who said the sight word, and asked the viewer, “Do you know what this word is?” Live action footage that was used in the initial presentation of the word was presented again; the word was checked off the list on the clipboard; voiceovers of children repeated the word; and the characters sung about the meaning of the sight word.

The program also provided the child with the opportunity to read and use various emergent reading skills. Song lyrics were positioned at the bottom of the screen during songs. The child was prompted to read by a voiceover of a child that said, “Now it’s time for your lines.” The word that was currently being sung was highlighted in a different color and a star that was positioned above the words moved to the word currently being sung.

**Tracking of formal features.** The formal features tracked were selected because they were standard production techniques proven to be effective features to get the viewer’s attention and/or to enhance learning. As mentioned earlier, it was expected that these techniques would also be effective to get mothers to participate while co-viewing. Each program segment was coded for the presence of three types of formal features coded (i.e., visual, audio, and audio-visual). Of the features that were tracked there were a total of 61 formal features present in the program. The audio-visual feature (i.e., when the pace and action was fast) was tracked but was not present. The audio feature of the race and ethnicity of characters’ voices was not tracked because the race and ethnicity of a voice without an on-screen character could not be determined. Similar coding procedures as those used for content were used to code the formal features presented within the program. To code the visual features the researcher watched each segment
without sound. To code the audio features, the researcher listened to each segment without
coding for the visual features. After coding the features in this way, the researcher adjusted codes
by watching and listening to the program segments together. The audio-visual formal features
involved examining audio and visual features together. A formal feature was counted as being
present only once per segment regardless of the number of times the feature was used during the
segment or how long it was present.

**Children’s knowledge of target items and skills.** Children were assessed before and
after they watched *Showy Show: The Preschool Show* on their knowledge of vocabulary, sight
words, and reading skills in order to answer the fourth research question about whether maternal
participation and scaffolding predicted a child’s learning (see Appendix B). The principal
investigator developed and piloted the pre- and post- assessments. The procedures to assess
novel vocabulary and sight words by having the child identify the vocabulary item or sight word
when asked to point to the image or word and by having the child say the image or word when
asked, “What is this?” were informed by a study by Rice and Woodsmall (1988) and the
structure of the Peabody Picture Vocabulary Test (PPVT).

The pre- and post-assessments were the same, with the exception that the post-assessment
included three questions about watching *Showy Show: The Preschool Show*. These questions
were used to situate the findings. Both assessments contained 32 items (i.e., 21 items assessing a
child’s knowledge of vocabulary, sight words, and reading skills; 11 distracter items). Distracter
items were included for two reasons. First, these were items that children were likely to answer
correctly, which would give them confidence to continue with the assessments. Also, the
distracter items were included to prevent a mother from working with her child to get the right
answers prior to the post-assessment.
In the assessments, the items asking a child to express the vocabulary item or sight word when shown an image or text of a sight word and asked, “What is this?” were presented before the child was asked to recognize the corresponding image or word. This was done so that the child would not be primed by the researcher saying the word of an item to be presented. For the items that asked the child to point to a certain image or word, there was an array of three images or words. The arrays were designed so that items or words shared a common characteristic (i.e., similar function, equal number of syllables, compound words, or a same beginning sound). During piloting the item that asked the child to express the word preschool when shown an image of a preschool and asked, “What is this?” was excluded from the final assessments. The reason for this was that children were unable to express the word for preschool simply by looking at an image of a single aspect of preschool curricula (e.g., painting and circle time).

The researcher administered the pre-assessment to the child at the first home visit and the post-assessment to the child at the second home visit, after the child watched Showy Show: The Preschool Show. Each assessment took approximately 10 minutes for the child to complete. The researcher recorded the child’s answers on a scoring sheet. The child was asked each item once. After presenting each item one time, the researcher went back to any item that the child did not answer or answered “don’t know” and asked those items a second time, recording that the items were presented a second time. However, for the analyses of this study, whether the item was presented more than once was not taken into account when assessing a child’s knowledge of that item. During the assessments, if a child asked the researcher a question similar to “Why are you asking these questions?” the researcher responded, “I want to know what children like you know and don’t know. Some words you’ll know and some you won’t.” If a child provided an answer to a question tapping the target items or sight words that was similar to the intended response, the
researcher asked, “Is there another word you could use for that?” For the two sentences in which a child was asked to read, the action the child did (e.g., pointing to the words, sounding the letters, or saying a few words) was recorded on the scoring sheet.

**Coding and grouping of the items.** There were 21 items that assessed a child’s knowledge of the target items and skills (see Appendix C for descriptions of these items and skills). There were 19 items that assessed a child’s knowledge of target vocabulary and sight words. These items were scored using a two-point scale (i.e., correct or incorrect response). A correct response indicated that the child responded with the correct and entire target response regardless of whether the item was presented once or twice. An incorrect response indicated that a child did not know an answer, did not respond, or answered incorrectly. There were 2 items that assessed a child’s reading skills. In each of these items, the child was asked whether he or she could read a sentence. These items were scored using a five-point scale. (i.e., incorrect or no answer; sounding letters; directional tracking; saying one to three words; and saying four or more words). There was only one missing score for an item (i.e., one child’s response was eliminated from analyses because the researcher read the question incorrectly and said the answer). Table K1 shows how children scored on each item at the pre- and post-assessments.

The items used to measure children’s knowledge of target vocabulary, sight words, and reading skills were organized into groups in order to reduce the number of variables used for analyses of how maternal participation and scaffolding predicted children’s learning. Pre- and post-assessment group scores were calculated by summing a child’s scores for individual items. Reliability analyses were done to ensure that items within a group were internally consistent. The two items measuring children’s reading skills were highly reliable at the pre-assessment ($\alpha = .88$) and at the post-assessment ($\alpha = .79$). These two reading items remained a separate variable for
final analyses. However, the items measuring children’s knowledge of vocabulary and sight words were arranged as variables using four different groups until there was a group that had variables that were internally reliable (see Tables K2, K3, and K4 for groups that were not used for analyses). Groups of the 19 vocabulary and sight word items were designed to have variables that were related conceptually. The preliminary groups had two to four variables, which provided more differentiation in what was being measured than the final group, which had one variable. However, the variables within these groups were not internally reliable, even with item deletions.

The group used in final analyses had one variable of vocabulary and sight word items and one variable of the reading items. The two variables within this group had the highest Cronbach’s alphas of the previous groups. In this group, the variable measuring children’s knowledge of vocabulary and sight words had 5 item deletions (i.e., 3 items that were images and 2 items that were text). This variable was moderately reliable at the pre-assessment (α = .518) and at the post-assessment (α = .622). Children’s scores on average at the post-assessment for both measures (i.e., children’s knowledge of vocabulary and sight words; children’s knowledge of vocabulary and sight words) were greater than at the pre assessment (see Table 4-1).

Maternal knowledge of what children knew and maternal beliefs. The Survey for the Mother consisted of two sections (see Appendix D). The first section helped identify whether mothers scaffolded, which was used to answer all of the research questions. The second section helped to answer the third research question about whether maternal beliefs about school readiness and educational television as a tool to learn predicted maternal participation and scaffolding. The mother completed the survey during the first home visit. If the mother was unable to complete the survey then, she was asked to complete it prior to the second visit. The
survey took approximately 10 minutes to complete. The survey was designed and piloted by the principal investigator.

**Identifying maternal scaffolding opportunities.** The survey items asked to the mother about what her child already knew of the target vocabulary, sight words, and reading skills prior to watching the program served as a benchmark to determine whether a mother scaffolded her child’s learning of a target item or skill while co-viewing. There was little missing data: One mother did not answer two of the items and there were two mothers who did not respond to one item each. The missing responses were coded as similar to the mother thinking that the child did not know the target skill or item. On average a mother had indicated her child did not know 9.06 items ($SD = 2.69$) out of the 21 total items.

Whenever the target item or skill appeared in the program and the mother had indicated that she thought her child did not know the item or skill, the mother had an opportunity to scaffold her child’s learning of that item or skill. These opportunities were referred to as **scaffolding opportunities.** The number of scaffolding opportunities a mother had depended on which target items or skills she thought that her child did not know and the number of segments in which that target item or skill was presented at least once. The program provided the mother with opportunities to scaffold by presenting the target vocabulary, sight words, and reading skills in various segments (see Appendix C). There was variation in the number of scaffolding opportunities mothers had since the places mothers could scaffold were dependent on the target items and skills each mother thought her child knew before the observation, as measured by the survey responses. On average a mother had 49.74 scaffolding opportunities ($SD = 12.15$).

The content in the mother’s survey was the same as the content in the child’s assessment. However, the format was different. In the mother’s survey reference was made to whether the
child would be able to recognize the image or text of a target vocabulary or sight word without showing the image of that vocabulary or sight word whereas in the child’s assessment, the image or text was shown. Similar to the pre- and post-assessments, the survey contained distracter items to decrease the likelihood that the mother would work with her child to get the right answers on the post-assessment prior to the second visit.

*Measuring maternal beliefs.* The second section of the survey contained two subsets of items that measured maternal beliefs in two areas. These items were used to create the two belief measures used during analyses for the third research question about how maternal beliefs predicted maternal participation and scaffolding. The items that measured the belief for activities and skills of 3- to 5-year-old children were informed by the literature on predictors of later achievement in language and literacy (Hart & Risley, 2003; Hart & Risley, 1995; Scarborough & Dobrich, 1994). The items that measured the belief of television as a tool to learn were informed by published studies (Austin et al., 1999; Dorr et al., 1989; Rideout et al., 2003).

There were 25 items in the first subset of items about school readiness and 9 items in the other subset about educational television. All items within each subset used the same 4-point Likert scale. The items within each subset were designed so that a “1” represented that the mother valued school readiness or educational television while a “4” represented that the mother did not value school readiness or educational television. All of the items used in the survey were piloted prior to the study to ensure that there were variations in the opinions. There was little missing data, with the great majority of mothers (n = 26) answering all of the items with a single response. For the measure of maternal beliefs about school readiness, four mothers did not answer five items and one mother answered an item with more than 1 response. Missing data was handled by averaging the responses for the other items that made the measure.
There was one measure for each belief. Each belief measure was computed by averaging the items designed to measure each belief and for which mothers responded with one answer. As detailed above, items without responses and items with more than one answer were not included in the average. Two survey items were not used to compute the belief measures. First, one item originally intended to measure maternal beliefs about school readiness (i.e., How important is having lots of age-appropriate books in the home?) focused on the environment that young children were in rather than the activities in which they engaged or the skills that they should acquire, which was the focus of the other items measuring that belief. Second, one item (i.e., “From high-quality educational television, preschool age children can learn to play well with others”) originally intended to measure maternal beliefs about educational television that did not relate to language and literacy content was dropped. All other items measuring maternal beliefs about educational television were about language and literacy skills and concepts (see Appendix D for all items included in the survey). Both measures were highly reliable, as assessed by Cronbach’s alpha. The measure for the value of school readiness consisted of 24 items ($\alpha = .865$). The measure for the value of educational television consisted of 8 items ($\alpha = .951$).

**Child and maternal participation during cviewing.** Field notes, video recordings, and audio recordings were used to describe child and maternal participation during cviewing, which helped to answer all of the research questions.

**Using video recordings.** Video recordings were used to record the mother-child interactions while the child and mother were watching *Showy Show: The Preschool Show* and provided a source of verbal and non-verbal communication of both the child and the mother to augment the field notes. The video recorder (i.e., Canon Digital Video Camcorder FS200) was charged before the first visit of the day. A fully charged battery pack allowed for 1 hour 40
minutes of typical recording. In addition, there was a plug-in option to charge the camera, which was used during most observations. The transmitter, which connected to the video recorder, used a 9V battery. The researcher kept four back-up 9V batteries during each observation. Data was recorded and stored on an SD 4GB card.

The video recorder was positioned near the television set on a tripod, keeping the child in frame with at least the arms and at least half of the face in view. The child was in focus because in this study the behaviors of interest were those the mother did in relation to her child. Also, pilot work showed that the child stayed in the viewing area more than the mother, although the mother was often sitting next to her child. If the child changed locations, the researcher adjusted the camera to get the child back in focus. A wireless lapel microphone was placed on the child’s clothing and the receiver for the wireless microphone was placed in a pouch covered in child-friendly designs and attached over the child’s shoulders to minimize the child playing with the device. At the start of the recording the researcher clapped in order to synchronize the audio and video and pan the room to contextualize the rest of the videotape. After the observation, video recordings were downloaded to the computer. After the observation visit, the data was transferred to computer with a USB cable after observation visit. The file name of the video taping for each observation visit was xxmmddyy with xx as the identification number of the dyad.

Using audio recordings. The researcher audio recorded the observation portion of the second visit and some of the follow-up questions asked to the mother after the observation (i.e., five through seven). The audio recordings of the observation helped to augment field notes. An Olympus Digital Voice Recorder WS-400s was used. Extra AAA batteries were taken to each observation visit. During the observation, the mother carried the audio recorder in a pouch that was attached over her shoulders so that the recorder was resting in front of her. Audio recordings
captured what mothers said during the observation and were used to augment the field notes and videotapes by providing another source of the mother’s verbal communication in case data was missing from the field notes and/or video recordings. Before leaving the participants’ home, the researcher made sure that the tape had recorded the follow-up questions. The audio recordings were digital in format. After the observation, the audio files were transferred and stored on the computer.

*Using field notes.* Field notes were taken during the observation in order to capture maternal behaviors. The researcher attempted to record all of what the participating mother and child said and a particular set of their non-verbal actions (i.e., interacting with the program by actions such as dancing, clapping, and laughing; interacting with the child, mother, or program by actions such as holding the child, giving the child food, or pointing). The researcher recorded the participation of other adults and children if what they said or did was directed to the child, mother, or program. In addition, the researcher recorded information about changes in the environment such as whether someone else joined the mother and child. In the field notes, the researcher specified the person who participated (i.e., M = mother, C = child; F = father, OC = other child, and OA = other adult), who initiated the behavior, and to whom the interactions were directed.

Field notes were recorded directly on the script of *Showy Show: The Preschool Show* with what the mother and child did and/or said recorded at the place on the script that corresponded with what was happening in the program for two purposes. First, there was a record of what was occurring in the program in terms of the type of content being delivered and the formal features used to deliver that content at the time a mother participated or scaffolded, which was used to answer the second research question about how the program related to
maternal participation and scaffolding. Second, the researcher was able to mark where in the program the missing data was located. During analyses, incomplete data, as noted in the field notes, were augmented as much as possible with the audio and video recordings of the observations. When augmenting missing data, video recordings were used before the audio recordings since the video captured more communication between the child and mother than the audio recordings, which captured mainly what the mother said.

**Describing maternal participation and scaffolding.** Final transcripts of the mother-child interactions were made once the field notes were augmented. Each maternal behavior in the final transcripts was coded twice, using distinct coding schemes, once for the type of behavior it represented and once for the scaffolding strategy or strategies used, if any (see Appendixes E and F). Some of the scaffolding strategies involved more than one behavior on the mother’s part. The codes about maternal participation (i.e., the types of behaviors mothers did) and maternal scaffolding (i.e., the types of strategies mothers used) were not completely independent of one another. All maternal behaviors had a corresponding code for type of behavior. However, not all behaviors had corresponding codes for the scaffolding strategy since a mother could do a behavior that was not necessarily a scaffolding strategy. Also, using a strategy alone was not sufficient to conclude that a mother had scaffold. To determine whether the mother had scaffold, further analysis was done to see whether the strategy also occurred when a mother had a scaffolding opportunity.

Identifying the types of behaviors mothers did helped describe how mothers participated while coviewing, which then was used to answer all of the research questions. Preliminary codes were developed prior to the study and were informed by past research on parental mediation while coviewing (Austin, 1993; Valkenburg et al., 1999). Codes were modified during analysis
to describe in more detail the behaviors mothers did during the observation. For final analyses, there were 15 types of behaviors to describe maternal participation during coviewing. Appendix E provides descriptions and examples of the types of behaviors mothers did.

Identifying the strategies mothers used helped to describe how mothers scaffold while coviewing, which then was used to answer all of the research questions. As previously mentioned, for scaffolding to occur, a mother needed to be using a scaffolding strategy during a scaffolding opportunity. For final analyses, there were 7 scaffolding strategies. Six of these strategies were used in past research (van de Pol et al., 2010) and included feeding back, giving of hints, instructing, explaining, questioning, and modeling. An additional strategy of checking in was used to describe maternal behaviors that checked the level of the child and/or directed the child’s attention (e.g., “Did you see the word?”). Appendix F describes the codes for the scaffolding strategies, with examples of when each strategy was used to scaffold.

**Using the observation follow-up protocol.** The Observation Follow-up Protocol consisted of 7 items (see Appendix G). The first six items were used to situate some of the findings. The last item was designed to determine whether mothers helped their children learn within their children’s ZPD, which was used to help answer all the research questions. The researcher audio recorded questions 5 through 7, with the mother’s permission. Only the items designed to situate the findings (i.e., items 1 through 6) were used for final analyses.

For item 7, the researcher asked a mother why she did certain behaviors when she had scaffolding opportunities. To do this, prior to the observation the researcher identified all the segments that a mother had a scaffolding opportunity, based on her survey responses. The researcher then asked follow-up questions about behaviors a mother did during these segments (i.e., segments with scaffolding opportunities for that mother) and that were in reference to a
target item or skill during she thought that her child did not know. These follow-up questions were asked in order to find out whether a mother thought that the item or skill was within the child’s ZPD. However, the answers mothers provided were inconsistent. Therefore, it was decided that these follow-up questions would not be used to verify that mothers had scaffolded within their child’s ZPD.

**Procedures**

IRB approved the final versions of all instruments; consent and assent forms; and procedures used in the piloting and main study. The researcher piloted instruments and procedures in order to develop final versions of the instruments and methods to be used during the main study.

**Recruitment.** Children and mothers were recruited in two ways. The first way was by posting recruitment flyers (see Appendix H). All flyers had contact information for the study, so that interested parents could contact the researcher directly. The flyers were posted in public spaces that preschoolers and their families commonly frequent (i.e., university graduate student apartments, preschools, and day care centers [with site directors’ permission]). The flyers were also posted to electronic message boards [with site moderators’ permission], which service local families. The second way was via a “snowball sampling” recruitment procedure, whereby the researcher gave recruitment flyers to prospective and actual participating parents and asked these parents to provide copies of the flyers to their acquaintances or tell them about the study. There were 17 participants recruited by flyers and 14 participants recruited by snowball sampling. The researcher screened potential participants by telephone using a university approved Screening Consent Script (see Appendix I).
An initial criterion of the proposal was that the researcher not be familiar with the participants. The rationale to recruit participants that were not familiar to the researcher was to reduce researcher and participant bias and possible discomfort on behalf of the observer and the researcher (e.g., if the participants and researcher had a prior relationship the participants might have certain expectations about how they thought that the researcher would want them to behave and, therefore, might not behave in their natural ways or participants might have felt that if they or their child behaved a certain way, that the relationship between the researcher and the family might be harmed). However, after doing all recruitment procedures the desired number of participants for the study was not reached. The criterion was expanded so that the researcher could have some prior familiarity with the participants (i.e., families in attendance at similar school as researcher and neighbors), which helped recruit more participants. The researcher had prior familiarity with 16 of the 31 final study participants.

During initial points of contact, all details of the project were described and questions answered. Identification numbers were assigned to all children and parents in the study. The identification numbers were random numbers and written on all data collected. Each mother-child dyad shared the same dyad number, with mother and child numbers differentiated by \( M \) for mother and \( C \) for child.

**Phases of contact.** There were three phases of contact between the researcher and mother-child dyad. The three phases included participant recruitment; the first home visit which included administering the pre-assessment to the child and having the mother complete the survey; the second home visit which included observing, taking field notes, video and audio recording while the dyad watched *Showy Show: The Preschool Show*, administering the post-assessment to the child, and asking the mother questions about some of her behaviors while
watching the program. In cases where a research activity (e.g., pre-assessment, post-assessment, or follow-up questions) was not completed, the researcher arranged follow-up contact or additional visits to occur within one day of the observation visit. Table 4-2 summarizes the approximate time the researcher stayed at each mother-child dyad's home.

Mothers learned of the study via print and electronic postings or word-of-mouth. Once a mother had expressed interest in the study, the researcher contacted the mother by phone or email, using a university approved screening consent form to ensure the inclusion criteria had been met; answer any questions about the study; and arrange the introductory home visit and the observation visit. If the mother was interested in participating in the study and the participating child and family met the inclusion criteria to participate in the study, the mother was given a consent form (before or at the first visit) to sign allowing herself and the child to participate in the study (see Appendix J). Additional adults and children to be present during the observation visit were asked to sign or have signed for them if participants were children the appropriate consent or assent forms prior to the observation visit. All consent and assent forms were university approved. The researcher arranged the home visits at a time that was convenient for each family and when the participating child would be watching educational television at home and the mother would be at home in the immediate vicinity of the child. The researcher brought a clipboard with materials needed for the visit and the audio-visual equipment to be used during the observation to familiarize the mother and child with the audio and video recording procedures prior to the second home visit.

At the first home visit the researcher asked the mother and eligible participants to sign consent and assent for all participants of the study, including adults and children who might be present during the observation visit; planned how best to collect the data (e.g., where to sit);
confirmed details about the following observation visit (e.g., date, time, and format); showed the mother and child the equipment (e.g., the tripod, the video recorder, and the audio recorder) to be used during the second visit and how the microphones and audio recorders were to be worn by the mother and child; administered the pre-assessment to the child (see Appendix B); had the mother complete the Survey for Mother (see Appendix D); and gave the mother a copy of the DVD Showy Show: The Preschool Show. While the researcher administered the pre-assessment to the child, the mother was asked to complete a survey about the language and literacy items and skills that were emphasized in Showy Show: The Preschool Show and her beliefs about the importance of certain activities and skills for preschool-age children and her beliefs about the importance of television as a learning tool to develop certain skills. In this way, the mother was occupied while her child was taking the pre-assessment so that she would not hear her child’s responses, which might have influenced her survey answers about what she thought her child knew about the target vocabulary and sight words of the program or encouraged her to work with her child to get the right answers on the post-assessment prior to the second visit. The mother was asked to watch Showy Show: The Preschool Show alone prior to the observation in order to establish familiarity with the program, its content, and format. The researcher requested to the mother that the child not view the program prior to the observation. The home visit lasted for a maximum of 30 minutes.

At the second home visit, the researcher observed while the child was watching Showy Show: The Preschool Show and the mother was in the in the immediate vicinity of the child. The second home visits, including observation, post-assessment administration, and follow-up questions) lasted for a minimum of 45 minutes and a maximum of 90 minutes. The researcher rescheduled one visit since the participating child was not willing to watch the program at the
originally scheduled time. During the observation, the researcher sat in a place that was near the child and the television so that she could see and hear what the child was saying and see and hear the television. The researcher recorded field notes directly onto the script of *Showy Show: The Preschool Show* and videotaped the observation. After the child watched the program, the researcher administered the post-assessment to the child, which took approximately 10 minutes to complete. After administering the post-assessment, the researcher asked the mother questions about her behaviors during the program, using the Observation Follow-up Protocol (see Appendix G). The researcher audio-recorded questions 5 through 7.

If the researcher was unable to complete any of the scheduled research activities during either visit, the researcher made arrangements with the mother to complete those activities. In the cases where the child had not completed the pre- or post-assessment, the researcher made arrangements to return to the child’s home prior to the observation visit. If the mother had not completed the survey at the first home visit, the survey was completed and returned to the researcher before the child watched the program *Showy Show: The Preschool Show*. If during the second home visit, the researcher was unable to complete the follow-up questions, the researcher arranged either a follow-up phone conversation or returned to the participant’s home within one day of the second visit. During data analysis each participating family received a letter thanking them for their participation and letting them know that data analyses was taking place. At the completion of the researcher’s dissertation study, each participating family received a letter thanking them for their participation and a summary of key findings.
CHAPTER V

Maternal Participation and Scaffolding

This chapter describes how mothers participated and scaffolded while they co-viewed an educational program, *Showy Show: The Preschool Show*, with their children. As described in the methods, maternal participation describes all of the behaviors mothers did during the entire program and maternal scaffolding describes only the scaffolding strategies mothers used that occurred during scaffolding opportunities. The first section describes maternal participation while co-viewing by describing the frequency of maternal participation, the types of behaviors they did, and some of the interactional patterns observed. The second section describes maternal scaffolding while co-viewing by describing the frequency mothers scaffolded and the types of strategies they used to scaffold. As noted earlier, for a mother’s behavior to be coded as scaffolding in this study, she needed to use a scaffolding strategy in relationship to a target item or skill. Also, as noted earlier, mothers could have scaffolded their children’s learning of items and skills other than the target vocabulary, sight words, and reading skills but there was no effort to identify any such scaffolding. It was expected that mothers would participate frequently while co-viewing with their children, do a variety of types of behaviors, and interact with their children. It also was expected that mothers would scaffold frequently given the many opportunities afforded in the program for a mother to support her child in learning the target vocabulary, sight words, and reading skills.

**Overall Perspectives on Maternal Participation During the Entire Program**

**Frequency mothers participated while co-viewing.** Overall, several mothers participated frequently, but the majority of mothers participated infrequently (see Figure 5-1). There were two main pieces of evidence for this finding. First, the median number of segments a
mother participated at all was 23.50 out of a total of 70 program segments. There only were two mothers who participated in more than half of the program segments. Second, the median number of times a mother participated during the entire program was 39. Mothers on average participated 47.71 times while coviewing (SD = 31.75). Some mothers participated substantially more, with four mothers doing between 80 and 161 total behaviors.

**Types of behaviors mothers did.** The majority of mothers did a variety of different types of behaviors with a median number of 10 types. Mothers who participated at or above the median tended to have a similar number of different types of behaviors that they did (see Figure 5-1). However, as mothers did fewer than 39 behaviors, the number of different types of behaviors they did tended to decrease. Examples of the types of behaviors mothers did, along with descriptions, are included throughout this section and in Appendix E.

During analysis of the types of behaviors mothers did, it became apparent that there were three groups based on the average number of times a mother did a certain type of behavior. There was considerable variation in the average number of times mothers did certain types of behaviors. There also was variation in how many mothers did each type of behavior. There were some types of behaviors that the majority of mothers did at least once, while other types of behavior that were done by only some of the mothers. Figure 5-2 shows the average number of times a mother did each type of behavior with associated standard deviations. The types of behaviors are arranged in the three groups and in descending order of the mean frequency a mother did each type of behavior. Figure 5-3 shows the total number of mothers who did each type of behavior and the number of mothers who did each type of behavior at certain ranges. In Figure 5-3, the types of behaviors are organized in the same way as they are organized in Figure 5-2.
The first group consisted of six types of behaviors (i.e., explaining and commenting about the program; questioning about the program; providing feedback; questioning about the program by relating the content to the child; interacting with the program; and doing non-program related behaviors). These types of behaviors had relatively higher means (i.e., between 4.61 and 7.4) and larger standard deviations (i.e., between 3.34 and 8.54) than each of the 9 other types of behaviors. For each type of behavior in this first group, at least 74% of the mothers did the behavior of that type at least once. Also, for each type of behavior at least 50% of the mothers did that type at least 5 times.

Mothers talked to their children about the content, through explanations and comments (e.g., “That little boy had two lunches.”) the most, doing so only slightly more than they asked their children questions about the program (e.g., “Why are they getting ready for preschool?”). The majority of mothers provided feedback to their children after the child responded to a question from the mother or program, indicating that most mothers were responsive to their children. Also, the majority of mothers interacted with the program, demonstrating that mothers participated in ways in which the program had been designed. When mothers related the content to the child’s routine they did so more frequently by asking questions (e.g., “Who is in charge at your school?”) than by using statements (e.g., “That looks like when I pick you up from [preschool]”), with the latter type of behavior belonging to the group of behaviors mothers did with medium frequency. All mothers except one did a behavior that was not related to the program (e.g., talking with the child about a tree outside).

The second group consisted of four types of behaviors (i.e., prompting the child to participate by asking or telling him/her to participate; prompting a child to participate by checking whether a child could do an action or task; explaining by relating content from the
program to a child’s life; and directing a child’s attention). These types of behaviors had lower means (i.e., between 1.43 and 2.75) and lower standard deviations (i.e., between .62 and 1.41) than the types of behavior in the first group. However, the mean for how many times each mother did that type of behavior was above 1. For each type of behavior in this second group, 58 to 81% of the mothers did the behavior of that type at least once. Also, for each of type of behavior 76 to 91% of the mothers did that type fewer than 5 times.

The two kinds of prompts that mothers used were (a) when mothers asked if their children wanted to participate (e.g., “Do you want to sing?”) or told their children to participate (e.g., “Take a bow”) and (b) when mothers asked if their children could do an action (e.g., “Can you say that word?”). Mothers used each of these types of prompts with similar frequency. By prompting, mothers both encouraged participation and checked in with their children to see whether their children wanted to or were able to (e.g., that their children could say the text of a word) participate in the program. A little more than half of the mothers directed a child’s attention to on-screen content (e.g., “Look at that word”).

Finally, the last group consisted of 5 types of behaviors (i.e., asking the child affective questions about the program; previewing and summarizing content; modeling to a child how to do an action; asking a child to expand his or her reasoning; correcting or adding to a child’s response; and helping a child do a move or an action). These types had lower means (i.e., between .44 to .78) and lower standard deviations (i.e., between .96 to 1.64) than each of the 10 other types of behaviors. For each type of behavior in this group, about a third of the mothers did the behavior of that type and when mothers did do that type of behavior, they tended to do it between 1 and 4 times.
An important function was often served when mothers did one of these types of behaviors. For example, asking the child affective questions about the program (e.g., “Do you like that part?”) often provided the mother immediate feedback if she needed to engage her child more in order to sustain her child’s interest in the program. Similarly, reviewing and summarizing content (e.g., “Now we are going to learn some words today” and “Now we learned lunchbox and share”) were used to prepare a child for what was to come and reflect on what happened – both of which are effective classroom teaching strategies. Another effective teaching strategy, correcting or adding to a child’s response (e.g., after a child said, “No,” the mother said, “Yes you do”) gave informative feedback to the child. Also, helping a child do an action provided the child needed guidance not provided from the program. Finally, a mother asking her child to explain his or her reasoning (e.g., “Why not?”) allowed a mother to assess her child’s understanding of the content so that she might interact accordingly.

**Maternal Participation During an Individual Segment**

**Guidance when doing multiple behaviors.** It was likely that by doing multiple behaviors within a segment a mother could discuss in detail the program content with her child, as illustrated by the following three vignettes. The first vignette is of a mother who did 12 behaviors during a 68-second segment. The segment began with one of the main characters sitting on a stool singing a song about a girl being shy at school. There was an animated sequence of a girl going to school and meeting new friends. The segment ended when the song ended. In this vignette a mother talked to her 4-year-old daughter about being shy, the theme of the song.
Mother: They're singing a song about school.
Child: Why is she all by herself?
Mother: He's singing a song about a little girl Sally. She went to school and she was shy. Now she's playing. Watch. Is she still shy and playing by herself?
Child: No
Mother: How is she feeling now, Angelina?
Child: Happy
Mother: Happy because she's playing with others. Good job. And it's fun when you're playing with others.
Child: Sometimes I get shy at school.
Mother: Everyone gets shy. You just have to play with others and then you won't be shy anymore.

This mother participated extensively during this segment and used 5 different types of behaviors (i.e., explaining about the program; directing her child’s attention; asking questions about the program; providing feedback to her child; and making corrections or additions to what her child said). This mother first explained to her daughter what was happening in the program, then answered her daughter’s questions, and explained more about the program. She ended the interaction by expanding on what her daughter said. This mother also discussed with her daughter about the girl being happy, one of the outcomes measured.

The mother in the next vignette did 16 total behaviors, which began during a 7-second segment. At the start of the interaction the sight word lunchbox was on-screen. This presented a scaffolding opportunity for this mother since during the survey she had indicated that her 3-year-old son would not be able to produce the word lunchbox if shown the text of the sight word lunchbox and asked, “What is this?” Similar to the mother in the previous vignette, this mother participated extensively.

Mother: Look at that word.
Child: Kids are going to be hungry and have lunch.
Mother: Yeah, they will. Do you know what that word is? What’s he carrying?
Child: Lunch
Mother: Yeah, a lunchbox. That word was lunchbox.
Child: If you give a mouse a cookie.
Mother: [laughs] You don't have to bring your lunch to school. Huh? Your school gives
you a lunch. One day you'll have to bring your lunch in a lunchbox.
Child: Yeah.
Mother: When you get older. When you're in first grade.
Child: I'm going to bring a lunchbox.
Mother: Yeah, Remember we had a lunchbox yesterday.
Child: But I want to keep it in my backpack.
Mother: Yeah, your lunchbox will probably fit in your backpack.

This mother talked to her son about the sight word lunchbox being a word, discussed the meaning of what a lunchbox was, and described to her son how a lunchbox related to his life. She used 7 different types of behaviors (i.e., explaining and commenting about the program; explaining by relating the content from the program to her child’s life; questioning about the program; questioning about the program by relating the content to her child’s life; providing feedback; and directing her child’s attention).

In the following and last vignette a mother talked to her 5-year-old son about a sight word that she thought he did not know. Like the previous vignette, this vignette also took place during a 7-second segment when the text of the sight word lunchbox was at the center of the screen.

Mother: Do you see that word?
Child: Lunchbox
Mother: That's a long word. l-u-n-c-h-b-o-x [says each letter]
Child: It's not a long word.

This mother was helping her child learn a sight word. She did three behaviors and used two types of behaviors (i.e., asking questions about the program and explaining about the program). She first asked her child a question about the word. After her child responded, she explained to him about the word and also said each letter of the word.

**Initiation and response of interactions.** The behaviors within program segments were coded for who did the first behavior and who, if anyone, responded. In some segments, only the mother or only the child participated, while in other segments both the mother and the child participated. When the child or the mother was the only one participating during a segment, the
child or mother presumably could respond. However, lack of response did not necessarily mean that the mother or child ignored the other. Figure 5-4 shows the interactional patterns of the mother-child dyads within segments.

The most frequent interactional pattern within program segments was that of the mother doing the first behavior(s) when both the mother and children participated in the same segment. This pattern occurred about 63% of the time. In approximately 60% of the segments in which mothers did the first behavior, the child responded. This was the same rate for the segments in which children did the first behavior and the mothers responded.
Scaffolding

This section describes how mothers scaffolded while co-viewing. As discussed in the Methods chapter, a separate coding scheme was used to code maternal scaffolding of their children’s learning of the target vocabulary, sight words, and reading skills. Also, scaffolding was only coded as occurring if a mother used a strategy when there was a scaffolding opportunity for that mother. As described in the Methods chapter, a mother had a scaffolding opportunity whenever a target item or skill (i.e., vocabulary, sight word, or reading skill) appeared in the program and the mother had indicated in the survey prior to the observation that she thought that her child did not know that item or skill.

This section first provides examples of mothers scaffolding. Then, it relates how much a mother scaffolded compared to how much she participated during the program and how many scaffolding opportunities she had in the program. It also describes the frequency with which mothers scaffolded and the types of strategies mothers used when they scaffolded. Given the ample number of opportunities mothers had to scaffold, it was expected that mothers would scaffold frequently while co-viewing.

What scaffolding looked like. The following three examples illustrate how mothers scaffolded while co-viewing. In the first example a mother scaffolded her daughter’s reading. The other two mothers scaffolded their children’s learning of a sight word.

This first example shows how a mother scaffolded twice by using two strategies, modeling and instructing. During the 27-second segment there was a song with lyrics printed at the bottom of the screen. The word that was currently being sung had a star above it and then changed color as it was being sung. This segment presented an opportunity for this mother to scaffold her child’s reading since she, like all the mothers in this study, had indicated that her
child could not read sentences. After singing the song by reading the lyrics, this mother said to her 3-year-old daughter, “See when the star goes over the word, it spells what’s being said.” This mother modeled reading to her daughter by reading herself. Then, this mother explained the reason the star goes over each word. In doing so, she instructed directional tracking, a reading skill, to her daughter.

In the next two examples, two mothers scaffolded during the same 10-second segment. In this segment a card with the sight word *happy* appeared at the center of the screen. Both mothers had indicated that their children did not know this sight word. Accordingly they both had an opportunity to scaffold their children’s learning of this sight word. The first mother guided her 3-year-old son to recognize the sight word and then to understand what the sight word meant.

Mother: What does that say?  
Child: Share  
Mother: h-a-p-p-y [*says each letter*] happy  
Child: happy  
Mother: How do you know he’s happy?  
Child: He’s got a smile.  
Mother: Let me see you happy. I love that.

This mother used three different strategies to scaffold and scaffolded five times (i.e., all but the last comment “I love that.”). First, she asked her child a question about the program content. After her child said an incorrect response, this mother used an instructing strategy by spelling the letters of the sight word. Then she modeled what the word was by saying “happy.” After the child responded correctly, his mother used questioning strategies to inquire about her son’s reasoning for his response and to have her son show what being happy was.

In this next example a mother interacted with her 3-year-old daughter during the same segment as the previous example.
Mother: What does that word say?
Child: It's time to go home?
Mother: No. It says happy
Child: Happy, happy, happy
Mother: There it is again.

This mother used three types of strategies and scaffolded four times. She scaffolded by questioning, giving feedback, and explaining twice. When she asked her child what the word said, the child responded incorrectly. This was similar to the mother in the previous example. However, the previous mother spelled the letters of the word, while this mother gave her daughter feedback by first saying, “no” then saying the sight word. Both ways seemed effective to inform the children of their progress since both children first made a wrong attempt before saying the correct sight word. Together these three examples of maternal scaffolding illustrate some of how mothers scaffolded while coviewing and the variety of strategies they used to scaffold. The rest of this section describes the frequency mothers scaffolded and the types of strategies they used to scaffold.

**Frequency mothers scaffolded.** The median number of times a mother scaffolded was 10 times. Mothers on average scaffolded 11.19 times while coviewing (SD = 8.16). This seemed infrequent relative to the amount mothers participated during the entire program and during scaffolding opportunities (see Figure 5-5). The most a mother scaffolded was 30 times and two mothers did not scaffold at all (see Figure 5-6). It was expected that mothers would scaffold frequently given that each mother on average had 50 scaffolding opportunities (SD = 12.15).

One-tailed correlations showed that the amount a mother scaffolded was significantly correlated ($r = .64, p < .01$) to the amount she participated during the entire program but weakly correlated ($r = .25, p = .09$) to the number of scaffolding opportunities she had.
**Strategies used when mothers scaffolded.** On average mothers used 3.87 different strategies ($SD = 1.89$) to scaffold the target items and skills they thought that their children did not know, as assessed by the survey they took prior to the observation. This was a moderate amount of variety in how mothers scaffolded considering that there were 7 scaffolding strategies (i.e., feeding back, giving of hints, instructing, explaining, modeling, questioning, and checking in). However, mothers on average used each strategy to scaffold fewer than 3 times (see Figure 5-7). Because of the low means that mothers used each strategy to scaffold, the strategies were not grouped according to means as was done with the types of behaviors mothers did. The strategies mothers used to scaffold will, however, be discussed by the number of mothers who used them to scaffold.

Figure 5-8 shows the different strategies each mother used to scaffold, the total number of mothers who used each strategy to scaffold, and the number of times a mother used that strategy to scaffold. The examples at the start of this section illustrate how some mothers scaffolded. Additional examples of the strategies mothers used to scaffold, along with descriptions, are included in Appendix F. There were three strategies (i.e., questioning, modeling, and checking in) that for each at least 74% of the mothers used it to scaffold. When mothers checked in to scaffold, only 24% of those mothers did so more than 3 times. However, when mothers either questioned or modeled, between 43 and 52% of the mothers used either of those strategies to scaffold more than 3 times. There were two strategies (i.e., explaining and feeding back) that for each approximately 50% of the mothers used it to scaffold. For each of these strategies at most 30% of the mothers used it to scaffold more than 3 times. There were two strategies (i.e., instructing and giving hints) that were not used frequently by mothers. For each
of these strategies, only about 30% of the mothers used it to scaffold and never more than 3 times.

Conclusion

This chapter described how mothers participated and scaffolded while co-viewing an educational program with their 3- to 5-year-old children at home. There were 15 types of behaviors that described how mothers participated and 7 strategies to describe how mothers scaffolded. Overall mothers did not participate or scaffold as frequently as anticipated. The amount a mother scaffolded had a significant correlation to the amount a mother participated in the program but not to the number of scaffolding opportunities she had.

This chapter also described interactional patterns within the program segments. A main finding was that the average number of segments a mother did one behavior was about the same as the average number of segments a mother did more than one behavior. Also, the most frequent interactional pattern within program segments was that of the mother doing the first behavior(s) when both the mother and child participated in the same segment, often talking to each other. Additionally, the child responded in 60% of these segments when the mother did the first behavior, which was the same response rate for mothers in segments in which children did the first behavior and the mothers responded.
CHAPTER VI

Relation of Program Characteristics to Maternal Participation and Scaffolding

This chapter examined how the content and formal features of an educational program were associated with maternal participation and scaffolding while covewing. There were challenges to finding an analysis plan to ascertain relationships between the types of behavior mothers did and the type of content or formal features of the program. Probably the greatest problem was the inability to create meaningful data that would allow the mother to serve as the unit of analysis and thus permit chi-square analyses relating behavior or scaffolding to content or formal features.

Although chi-square analyses were not used, the principles of chi-square analyses informed the analytic plan that was used. The unit of analysis in this final plan was the program segment and the data were whether mothers did a type behavior or scaffolded during a segment or whether a formal feature or type of content was present during a segment. Also, the analytic plan examined whether there was a moderate difference in the average number of mothers doing the type of behavior or scaffolding in the presence rather than the absence of the program characteristic(s) being analyzed.

Due to the analyses used (which will be described in more detail later), the relationships are probable relationships. A key consideration for ascertaining probable relationships was co-absence and co-presence of the variables. That is, for a probable relationship between variables to exist, the variables should be occurring in similar segments as well as not occurring during similar segments. In this chapter the types of behaviors mothers did during the entire program characterize maternal participation; the types of strategies mothers used to scaffold characterize maternal scaffolding; and program characteristics refer to types of content and formal features
(i.e., the production techniques used to deliver the content) that are in the program. This chapter
discusses the challenges in analyzing the data; describes the analyses used to ascertain probable
and meaningful relationships; and presents the findings. An example of what happened during
the program while a mother-child dyad c povewed is presented.

An Example of What Happened in the Program and During Coviewing

This example describes the first four program segments, which lasted 90 seconds, with
attention to content and formal features present in the program and the types of behaviors and
scaffolding a mother did with her 3-year-old son while coviewing. This example provides a
sense of the setting from which the data come; the types of relationships that might be present
while a mother c povewed with her child; and how different types of content and formal features
were present during program segments.

The mother in the example participated frequently during the entire program, doing a
total of 101 total behaviors, well above the median number of behaviors a mother did (i.e., 39).
This mother also scaffolding 29 times, also well above the median number of times a mother scaffolding (i.e., 11). This high-participating, high-scaffolding mother provides
a better sense of the relationships that might exist than the average mother from the study (i.e.,
who on average did not participate a lot or scaffold a lot while coviewing).

In the first segment, which lasted 6 seconds, a stage curtain opened and the title of the
program Showy Show: The Preschool Show moved into the center of the screen with the text
flashing. The research child got up and started dancing with the microphone he was wearing as
part of the research. After the child started dancing, his mother said, “You have your Showy
microphone,” which provided feedback to the child about what he was doing. After, she
explained to the child about the program, “Show is called Showy Show” and explained more
about the program by saying the role the research child had in the program, “You're the star.” In her feedback and explanations she used language from the program, “Showy microphone” and “You’re the star.” This segment was coded for the presence of tightening of the camera; a wipe; a dissolve; text that was at the center of the screen, flashing, moving, and large in size; animation; medium pace music; medium pace and action; content that was about reading skills; and two types of behavior (i.e., giving feedback and explaining about the program).

During the second and third segments, neither the mother nor child participated. In the second segment, which lasted 65 seconds, the three main characters (i.e., an adult who was Caucasian and female; an adult who was Caucasian and male; and an adult who was African-American and male) sang about the program and danced on a stage and at a park. Sometimes during the singing there were voices both on-screen and off-screen. The second segment was coded for the presence of a cut; live action; a character looking at text; human characters that were male and female, children and adults, of mixed (i.e., more than one race identified) or other (i.e., could not determine with certainty) race and ethnicity; other visual effects; other sound effects; voices of people who were on-screen, on- and off-screen, of males and females, and of adults and children; medium pace music; medium pace and action; and content that was story-related. The third segment, which lasted 5 seconds, started after the singing ended and showed animated children applauding and cheering. A dissolve made the transition to the fourth segment. The third segment was coded for the presence of a dissolve; animation; visual effect of a flash; audio effects; voices that were on-screen; coordination of visual and audio features; medium pace and action; and content that was story-related.

The fourth segment, which lasted 11 seconds, started with a widening of the camera to focus on a piece of paper on a clipboard with text of lunchbox, share, and happy (i.e., three target
sight words). There was a cut and the camera tightened to display the three sight words. The mother said to her son that what appeared on-screen were words, “Look there’s some words.” Her son replied, “Some words.” The mother then explained to her child, “We're going to learn some words today,” preparing the child for what was later to come in the program. In this segment, there was a scaffolding opportunity since this mother had indicated before the observation that her son did not know these three target sight words. The mother scaffolded with her child using two strategies (i.e., checking in and explaining). The fourth segment was coded for the presence of tightening of the camera; widening of the camera; a cut; text that was at the center of the screen and medium in size; live action; sound effects; coordination of visual and audio features; slow pace and action; content that was about target vocabulary and sight words; two types of behaviors (i.e., directing the child’s attention and preparing and summarizing content); and two strategies to scaffold (i.e., checking in and explaining).

Even though the mother in this example was a high-participating and high-scaffolding mother, there were many more features and types of content that were present in each segment compared to the number of behaviors she did and how much she scaffolded (see Table 6-1). Having many formal features present during the segments with fewer behaviors by the mother was one challenge to develop an analysis plan to show how the program’s content and formal features related to maternal participation and scaffolding.

**Key Challenges for Analyses**

There were five key challenges to ascertaining probable relationships between maternal participation or scaffolding and formal features or types of content. Some of these challenges were illustrated in the above example. The challenges were a large amount of data; different ways the variables were coded; not a lot of mothers participating or scaffolding; high frequency
of some variables and low frequency of other variables; and variations in the duration of segments.

**Large amount of data.** In the program, there were 5 types of content and 61 formal features that were tracked. For maternal behaviors, there were 14 types of behavior and 7 scaffolding strategies. If all the relationships between a type of content or formal feature and a maternal behavior (i.e., a type of behavior or a scaffolding strategy) were to be examined there would be 1386 potential relationships.

**Different ways the measures were coded.** The two measures associated with the program (i.e., type of content and formal features) were coded differently than the measures associated with the mother (i.e., types of behaviors mothers did and types of scaffolding strategies mothers used). The type of content or formal feature was coded once for its presence or absence during a segment, regardless of the number of times or length of time the type of content or feature was used. However, the behaviors that the mothers did were coded during the entire segment, so that multiple types of behavior and strategies used to scaffold could have been coded multiple times in a segment.

As discussed in the Methods chapter, there were different choices to code for the type of content and formal features used in the program. Due to the high number of types of formal features that were tracked, coding for the presence and absence of a feature seemed the best coding option rather than the number of times or length of time a feature appeared during the segment. One downside of this choice was that, during a segment, a mother could have responded before a feature had ever occurred or not immediately after or in response of a feature, which was not tracked by this coding. Another downside was that a feature that was used
multiple times or for a long time during a segment was coded the same (i.e., as being present) as a feature that was used only once or for a brief amount of time during a segment.

**Low frequency of maternal participation and scaffolding.** As discussed in the last chapter, it was expected that the mothers selected (i.e., middle-class mothers who were around while their 3- to 5-year-old children watched television) would have participated and scaffolded more than they actually did. An unanticipated challenge was that overall mothers did not participate (i.e., do a lot of behaviors) or scaffold frequently while coviewing, which made it complex to conclude that a type of content or formal feature related to how mothers participated and scaffolded. The original analysis design was to have visual representations of the types of content and formal features that were used during the program; how mothers were participating (i.e., what they were doing); and how mothers were scaffolding during the entire program. Spreadsheets were used to display the type of behavior each mother did and the strategies each used to scaffold along side what happened in the program. In these representations, the x-axis was the segment and the time it lasted and the y-axis was the program characteristic (i.e., the types of content and formal features), the type of behavior a mother did, and the type of strategy she used to scaffold. When a program characteristic was present during a segment, a mother did a type of behavior, or a mother used a strategy to scaffold, marks were recorded in the timeline according to the duration of the segment in which it was present. Due in part to mothers not participating and scaffolding a lot, clear relationships could not be ascertained. Therefore, another analytic plan needed to be considered.

**Low and high frequency of variables.** There was a range in the number of segments that mothers did each type of behavior or scaffolding strategy and that each type of content or formal features was present. There were some formal features that occurred quite frequently (i.e.,
in more than 75% of the segments), while there were some types of content, formal features, behaviors that mothers did, and strategies that mothers used to scaffold that occurred infrequently (i.e.; in fewer than 25% of the segments).

**Variations in duration of segments.** As illustrated in the example at the start of this chapter, the duration of the segments varied. The duration of the segments varied from 1 second (i.e., animated applause) to 96 seconds (i.e., a song interspersed with video clips). The average duration of a segment was 21 seconds ($SD = 23.6$). During a longer segment more mothers could presumably participate and scaffold more frequently and more content or features could be present than in shorter segments—an issue that will be addressed later in this chapter.

**Preliminary Analyses**

Visual representations indicating presence for each variable and for each mother, as mentioned above, first were used to determine whether a relationship existed between the type of content or formal features and the behaviors mothers did. However, clear relationships could not be visualized in this way. There were too many types of formal features; some formal features were present in many segments while others were present in few segments; and mothers did too few of the various types of behaviors and used too few strategies to scaffold.

There were attempts to keep the mother as the unit of analysis in order to determine relationships between the type of content or formal features used in the program and the types of behaviors mothers did or whether they scaffolded. With the mother as the unit of analysis and acting as an independent case, chi-square analyses could be used. There was substantial time and effort required to keep the mother as the unit of analysis and the results of such approaches were unclear. Realizing the difficulty of finding a meaningful and feasible approach to relating content or formal features to types of maternal behaviors or scaffolding, the principal investigator
consulted with faculty with relevant experience and expertise and also with the UCLA Academic Technology Services Statistical Consulting Group.

**Analytic Approach Used**

The main switches from preliminary analyses to final analyses were to make the segment rather than the mother the unit of analysis and to not use visual representations in order to find relationships between variables. In doing so, types of content, formal features, mothers doing a type of behavior, or mothers using a strategy to scaffold were analyzed for their presence and absence in all program segments. Program segments were not independent cases since they all pertained to the program and were dependent upon one another in terms of the characters and the style. Therefore, chi-square analyses could not be used since a parameter of chi-squares is that the cases are independent. However, the analytic approach used in final analyses was analogous to that of chi-square analyses and will be described as two parts.

In the first part of analysis, the data to be analyzed were reduced. Variables that occurred so frequently or so infrequently that a relationship could not be ascertained were either excluded from analysis or aggregated. The strategies mothers used to scaffold were aggregated for analysis. In this way, whether mothers scaffolded rather than the types of strategies they used to scaffold was examined. The types of behaviors mothers did were not aggregated for analysis. However, some types of behaviors that mothers did and some program characteristics (i.e., types of content and formal features) were excluded from analysis due to occurring so frequently or so infrequently. Details about which variables were excluded will be provided later in this chapter.

In the second part of analysis, four criteria were applied to the remaining variables to ascertain probable relationships among the types of behaviors mothers did or whether they scaffolded and the types of content or formal features used in the program. The four criteria were
as follows: (a) the type of behavior mothers did or whether mothers scaffolded needed to be co-present or co-absent with the program characteristic(s) (i.e., the type of content or formal features) being analyzed in at least 65% of the segments; (b) there needed to be more mothers doing the type of behavior or scaffolding in the presence rather than the absence of the program characteristic(s); (c) there needed to be at least two mothers doing the type of behavior or scaffolding in the presence of the program characteristic(s); and (d) there needed to be at least one more mother on average doing the type of behavior or scaffolding in the presence rather than the absence of the program characteristics (i.e., types of content or formal features).

Each criterion was applied successively. Once probable relationships between pairs (i.e., mothers doing a type of behavior or scaffolding and a single program characteristic were examined and identified, probable relationships between mothers doing behaviors or scaffolding and a package (i.e., more than one program characteristic) of program characteristics were examined and identified. Analysis of packages was done to see whether multiple types of content or formal features drove the relationship rather than just one type of content or feature alone. In this section, first data reduction will be described. Then each criterion will be discussed in the order in which each was used in the analysis followed by details of the analyses of packages of program characteristics that might have been related to types of behaviors mothers did and their scaffolding.

Reduction of the data to be analyzed. There needed to be enough possibility to see a relationship between the variables. To do this, variables where there would be no chance to show the relationship (i.e., when the variable was present very frequently or very infrequently) were excluded from analyses. Infrequent occurrence was defined as a variable occurring in fewer than 25% of the segments (n = 17) and frequent occurrence was defined as a variable occurring in
more than 75% of the segments (i.e., more than 53 segments). Therefore, the variables that occurred in fewer than 25% or more than 75% of the segments were excluded from analyses. Figures 9 to 13 show the frequencies of all the variables. In each figure, there are two threshold lines. The variables that occurred above the top threshold line (i.e., at 53 segments) or below the bottom threshold line (i.e., at 17 segments) in each figure were excluded from analyses. Exclusion and inclusion of the types of content and formal features were based on their presence and absence during a program segment. Exclusion and inclusion of the types of behaviors mothers did and maternal scaffolding were based on the presence and absence of mothers doing the types of behaviors or scaffolding during a program segment. As a note, there were four general features (i.e., two visual features and two audio features) used to describe the characters who were people; the use of text; the presence of voices; and the use of music in general. There were other codes to describe more details about each of these characteristics (e.g., fast pace of music; voices of characters who were male and female; characters who were male and female; and medium size text).

**Content.** Of the 5 types of content that were tracked in the program, 2 (i.e., sight words and content that was story-related) were included in final analyses. Figure 6-1 shows the frequencies of all types of program content that were tracked. There were 3 types of content excluded from final analyses because they appeared in fewer than 25% of the segments. No type of content was excluded due to occurring too frequently (i.e., in more than 75% of the segments).

**Visual formal features.** Of the 35 visual formal features that were tracked in the program, 13 were included in final analyses. Figure 6-2 shows the frequencies of the visual features that were tracked. There were 22 visual formal features excluded from final analyses because they occurred in fewer than 25% of the segments. No visual feature was excluded due to occurring
very frequently. The visual formal features excluded were features about the kind of camera techniques (i.e., 3 of 4 tracked); characters on-screen (i.e., 6 of 12 tracked); text (i.e., 9 of 11 tracked); transitions (i.e., 3 of 5 tracked); and visual effects (i.e., 1 of 3 tracked).

Audio formal features. Of the 22 audio formal features that were tracked in the program, 12 were included in final analyses. Figure 6-3 shows the frequencies of the audio features that were tracked. There were 10 audio formal features excluded from final analyses because they occurred in fewer than 25% of the segments. No audio formal feature was excluded due to occurring too frequently. The audio formal features excluded were music (i.e., 1 of 4 tracked); people talking (i.e., 8 of 16 tracked); and sound effects (i.e., 1 of 2 tracked).

Audio-visual features. Of the 5 audio-visual formal features that were tracked in the program, 3 were included in final analyses. Figure 6-4 shows the frequencies of the audio-visual features that were tracked. There were 2 audio-visual features excluded from final analyses because they occurred in fewer than 25% of the segments. One of those features (i.e., when the pace and action was fast) was not present in any segment. No audio formal feature was excluded due to occurring too frequently.

Types of behaviors. Of the 14 types of behaviors mothers did that were tracked while co-viewing the program, 9 were included in final analyses. The non-program related behaviors that mothers did were not tracked, since this analysis was examining which types of content and formal features lead to mothers’ engaging with the program. Figure 6-5 shows the frequencies of the types of behaviors mothers did that were tracked. There were 5 types of behaviors excluded from analyses because the presence of mothers doing that type of behavior occurred in fewer than 25% of the segments. These 5 types of behavior were also the same types of behaviors that
mothers did the most infrequently during the program, as described in the last chapter. No types of behaviors were excluded due to occurring very frequently.

**Scaffolding.** The 7 strategies mothers used to scaffold were aggregated for analyses since mothers scaffolded infrequently, as detailed in the last chapter. The number of segments when at least one mother scaffolded was 39 (i.e., 56% of the segments). Figure 6-5 shows the frequency of maternal scaffolding.

**Concordance of pairs.** To decide whether there was likely to be a relationship between a mother doing a certain type of behavior or scaffolding and a type of content or formal feature, the data needed to show certain qualities of presence and absence of these variables, along the lines of those found in statistically significant 2 by 2 chi-square analyses. As discussed earlier, chi-square analysis could not be used because the cases were not independent of one another once program segment, instead of mother, became the unit of analysis. The qualities looked for in the analyses that were done were the following: (a) mothers mostly did that type of behavior or scaffolded when the program characteristic being analyzed was present and mostly did not do that type of behavior or scaffold when the program characteristic was absent and (b) mothers infrequently did the type of behavior when the program characteristic being analyzed was absent and infrequently did not do the type of behavior when the program characteristic was present. The term *concordant* will be used to describe a relationship in which mothers mostly did the type of behavior or scaffolded when the type of content or feature was present and did not do the type of behavior or scaffold when the type of content or feature was absent. Two other terms used throughout this analysis are *pairs* and *rate of concordance*. Pair in this analysis refers to a type of behavior that mothers did or whether mothers scaffolded and a type of content or formal feature. A pair was considered concordant if at least one mother did the type of behavior or scaffolded
and the type of content or formal feature was present or no mother did the type of behavior or scaffolded when the type of content or formal feature was absent.

The rate of concordance for each pair was calculated by dividing the number of segments the pair was concordant by the total number of program segments (n = 70). The first criterion for deciding that a pair had a probable relationship was that the pair had a certain rate of concordance (see Table 6-2 for results of establishing different concordance rates as the first criterion). Clearly, a concordance rate of .50 or less was not indicative of a relationship between a pair. A concordance rate of at least .75, on the other hand, yielded just 6 pairs. In the end, it was decided that a pair with a concordance rate of at least .65 (i.e.; concordance in 46 or more segments; having at least 65% concordance) seemed like a reasonable threshold rate to use in order to establish a relationship pattern. There were two reasons for selecting a .65 concordance rate as the minimum. One, there was a reasonable number of pairs that met this threshold rate. Two, it was thought that a pair with at least 65% concordance could have a relationship that was not due to chance. Even if a pair had at least a .65 concordance rate, the pair needed to meet three other criteria in order to say that the pair had a probable and meaningful relationship (and one not due to chance).

**Consideration of how many mothers participated or scaffolded.** The pairs that had at least a .65 concordance rate were analyzed further using three additional criteria to decide whether there was likely to be a probable and meaningful relationship between the variables. These criteria took into account the number of mothers who did the type of behavior or scaffolded in segments when the type of content or formal feature was present and when the type of content or formal feature was absent. These criteria are relatively weak, a point that will be
addressed in the Discussion chapter. Before discussing the criteria, the issue of duration of a program segment influencing maternal participation and scaffolding is revisited.

As discussed earlier, during longer segments mothers had more opportunity to participate and scaffold. Mothers had more opportunity during longer segments than shorter segments to do a type of behavior or scaffold. Therefore, it could be that the reason mothers did the type of behavior or scaffolded was not wholly due to the presence of a type of content or feature but to the duration of the segment.

One-tailed correlational analyses were done to determine whether the number of mothers who did a type of behavior or scaffolded was related to the duration of the segment (see Table 6-3). In this way, it could be seen which types of behaviors mothers did had a strong relationship to the duration of the segment. Correlational analyses showed that the number of mothers doing most of the types of behavior (i.e., 8 of the 9 types analyzed) was significantly related to the duration of the segment in which they did them. There also were some correlations that were moderate, in particular the number of mothers explaining program content in relationship to the child’s life with the duration of the program segment ($r = .49$) and asking questions about program content in relationship to the child’s life with the duration of the program segment ($r = .39$). Overall these correlations are modest and show a weak relation between the frequency in which mothers did the types of behavior or scaffolded and the duration of the program segment.

*More mothers participating and scaffolding during the presence of the variable than absence.* As just described, the first criterion of establishing that a pair might have a probable and meaningful relationship was that the pair needed to have at least a .65 concordance rate. Concordance based on one mother doing the type of behavior or scaffolding was not enough to establish a probable relationship pattern by itself. The remaining three criteria took into account
the number of mothers who did the type of behavior or scaffolded during program segments in
the presence rather than the absence of the type of content or formal feature. For a characteristic
or a set of characteristics to “hook” a viewer to behave in a certain way significantly more
mothers should be doing that type of behavior when the program characteristic (or set of
characteristics) is present than when that program characteristic is absent.

The second criterion was that more mothers on average needed to be doing the type of
behavior or scaffolding in segments when the type of content or formal feature was present than
when it was absent. Parameters were determined for how many mothers on average needed to be
doing the type of behavior or scaffolding when the type of content or formal feature was present
in a segment. Hence, the third criterion was that at least two mothers on average needed to be
doing the type of behavior or scaffolding when the type of content or formal feature was present
during program segments. Two mothers doing the type of behavior or scaffolding was selected
due to the low average number of mothers participating and scaffolding during the segments. It
also needed to be determined how many more mothers needed to be doing the type of behavior
or scaffolding when the type of content or feature was present rather than absent during the
segments. The fourth criterion was that at least one more mother needed to be doing the type of
behavior or scaffolding when the type of content or formal feature was present than when it was
absent during the program segments. A difference of one mother seemed the reasonable choice
considering the low frequency in which mothers participated and scaffolded.

**Probable relationships.** The pairs that met all four criteria were considered to have
probable and meaningful relationships and those that did not meet all four criteria were
considered not to have probable and meaningful relationships. Figures 6-6 to 6-10 show all the
pairs that had at least a .65 concordance rate. In each figure, the average number of mothers who
did a type of behavior or scaffolded in the absence of the program characteristic being analyzed was compared to the average number of mothers who did a type of behavior or scaffolded in the presence of that program characteristic. Of the related pairs with types of behaviors mothers did, 4 pairs had type of content, 4 pairs had visual formal features, and 9 pairs had audio formal features. Of the 4 related pairs with maternal scaffolding, there were 3 pairs that had visual features and 1 pair that had audio features. Details about these probable relationships will be discussed in the findings. Table 6-4 shows the number of pairs that met each of the three criteria. Of the pairs that met the first criterion for establishing probable relationships (i.e., had at least a .65 concordance rate), there were about a quarter of the pairs that had the types of behaviors and about half of the pairs with scaffolding that were related (see Table 6-4).

**Relation of a group of variables and maternal participation and scaffolding.** In the analyses up to this point, relationships between pairs have been examined to see whether a single program characteristic (i.e., type of content or formal feature) drove a relationship. It could be that more than one type of content; more than one formal feature; or types of content and formal features together drove the relationship. The term package was used to refer to the group of program variables that might have driven the relationship. To decide whether a type of behavior mothers did or their scaffolding was related to a package of formal features and/or content variables, further analyses were done for the type of content and formal features that had probable relationships with the same type of behavior mothers did or with their amount of scaffolding. The variables analyzed to see whether they were part of a package needed to be part of a pair that had a probable relationship (i.e., met all 4 criteria) and related to the same type of behavior mothers did or their scaffolding (see Figure 6-11).
Analyses for packages were done in the same way as for pairs. First, the variables that related to the same type of behavior mothers did or their scaffolding were identified. Concordance was determined by identifying the segments in which there was presence of all the variables or absence of all the variables. Presence of all the variables was when all of the program variables were present during segments when at least one mother was doing the type of behavior or scaffolding. Absence of all the variables was when all of the program variables were absent when no mother was doing the type of behavior or scaffolding.

Further analyses were done to investigate whether a type of behavior mothers did was related to more than one feature. First, packages of two variables were analyzed to see whether all criteria were met. There were 4 packages, each with two formal features, that had at least a .65 concordance rate, which was the first criterion used to establish a probable relationship (see Table 6-5). Further analyses were done to determine whether the type of behavior that mothers did that was related to two formal features also was related to three formal features. However, the two packages with three formal features that were analyzed did not meet the first criterion of having at least a .65 concordance rate.

**Relation of Program Characteristics to Maternal Participation and Scaffolding**

The results of the analyses show that there were 25 probable relationships between maternal participation or scaffolding and the program characteristics (see Table 6-6). Of these probable relationships, there were 21 pairs or packages that had a type of behavior in the pair or package and there were 4 pairs that had scaffolding in the pair. In more than half of the 25 probable relationships, concordance was due more to the absence of the two variables than the presence (see Tables 6-6 and 6-7).
There were 6 different types of behaviors that mothers did that had probable relationships with the program’s content or formal features. The types of behavior mothers did that related to program characteristics were explaining content in relationship to the child’s life, explaining the program content, asking questions about the program, asking questions in relationship to the child’s life, and providing feedback to the child. There were 13 different formal features that related to maternal participation (i.e., the types of behaviors mothers did) and their scaffolding. The formal features that were related to whether mothers scaffolded did not relate to the type of behaviors mothers did. Two visual features about text (i.e., use of text in general and medium size text) and two audio features (i.e., asking the child to participate and voiceovers) were related to maternal scaffolding but not related to the types of behaviors mothers did. However, vocabulary and sight words, the only type of content that had probable relationships with maternal behaviors, were related to four types of behaviors mothers did and whether mothers scaffolded while co-viewing.

Two types of behaviors mothers did (i.e., asking questions about the program content and prompting children to participate by asking if they wanted to) each had probable relationships with four formal features. The other types of behaviors that had probable relationships with the program characteristics had probable relationships with at most two features. The voices of people in general or with more specific voices had probable relationships with mothers’ questioning and prompting. Music had a probable relationship with mothers’ questioning, prompting, and use of feedback. The tightening of the camera had a probable relationship with mothers’ explaining the content in relationship to the child’s life and was the only camera technique that had a probable relationship with maternal participation and scaffolding.
There was one type of behavior that mothers did (i.e., mothers’ prompting children to participate by asking if they wanted to) and had a probable relationship with packages of program characteristics. Having a probable relationship with a package meant that more than one variable at a time might have driven mothers to do that type of behavior. Each package that had probable relationships with maternal participation consisted of two formal features. There was one package that had only audio features; one that had only visual features; and two that had one audio and one visual feature. The audio features included in the packages were the voices of the characters and the pace of the music. The visual features included in the packages were about the characters (i.e., gender, race, and ethnicity). Further analysis was done to see whether three variables at a time drove the type of behavior. However, the packages of three variables did not have enough concordance to establish a probable relationship.

**Conclusion**

The findings show that there were 21 probable relationships (i.e., 17 with the types of behaviors mothers did and 4 with maternal scaffolding). There were 6 types of behaviors (i.e., explaining about the program by relating the content to the child; explaining about the program; questioning about the program by relating the content to the child; and questioning about the program; providing feedback; and prompting the child to participate by asking or telling him/her to participate) that mothers did that were related to the program characteristics. Five of these types of behaviors (all but prompting the child to participate by asking or telling him/her to participate) were related to the content being vocabulary and sight words as well as some formal features (i.e., tightening of the camera, the use of characters, characters that are male and female, characters of mix/other race & ethnicity, voices of people in general, voice of adult character, voices of male and female characters, asking the child to participate, use of music in general,
medium pace of music, and slow pace of music). Maternal scaffolding was related to the type of content being vocabulary and sight words and to 3 formal features (i.e., use of text in general, medium size of text, and the use of a voiceover). Maternal participation and scaffolding mostly were related to a single type of content or formal feature at a time. Only one type of behavior (i.e., prompting) was related to multiple features which were present as a group (i.e., characters that are male and female & characters that are of mixed/other race and ethnicity; characters that are male and female & voices of male and female characters; characters that are of mixed/other race and ethnicity & voices of male and female characters, and voices of male and female characters & medium pace music).
CHAPTER VII
Relation of Maternal Beliefs to Participation and Scaffolding

This chapter examines whether two beliefs mothers had predicted maternal participation and scaffolding while mothers coviewed an educational television program with their 3- to 5-year-old children. One belief was about how mothers valued young children to have early educational experiences and to learn language and literacy content and skills before they entered Kindergarten. For the rest of this chapter, the term school readiness will be used in reference to this belief. The other belief was about how mothers valued educational television as a tool for young children to learn language and literacy content and skills. For the rest of this chapter, the term educational television will be used in reference to this belief.

There were four expectations for how these two beliefs might predict how a mother participated and how a mother scaffolded while a mother coviewed an educational television program with her 3- to 5-year-old child. First, it was expected that each belief a mother had would predict the amount a mother participated during the entire program. The rationale for this expectation was that a mother who valued school readiness would support her child in learning language and literacy content and skills and, therefore, would participate more while coviewing an educational program that focused on language and literacy content and skills than a mother who valued school readiness less. Similarly, a mother who valued educational television would collaborate with the program and, thereby, participate more during coviewing than a mother who valued educational television less. Second, it was expected that each belief a mother had would especially predict the amount a mother participated during scaffolding opportunities (i.e., when there were target items and skills presented in the program that the mother thought her child did not know). Third, it was expected that each belief a mother had would especially predict the
amount a mother scaffolded. The rationale for these two expectations was that a mother who valued school readiness and educational television would participate and scaffold especially when there were places in the program when her child presumably could learn. Finally, it was expected that each belief would predict the ratio of the amount a mother scaffolded to the amount she participated during scaffolding opportunities. The rationale for this expectation was that a mother who valued school readiness and educational television would be in tune with what her child knew and would support her child by using an effective strategy when there when there were places in the program when her child presumably could learn vocabulary, sight words, and reading skills.

Regression analysis was used to test these expectations by analyzing whether each maternal belief (i.e., school readiness and educational television) predicted the amount a mother participated and the amount a mother scaffolded while covviewing. Eight regression models were used. Both independent variables were entered in each regression model along with one of the eight dependent variables that characterized maternal participation and scaffolding. Forced entry was used since it was anticipated that each belief would predict maternal participation and scaffolding.

Creation of Variables

Maternal beliefs. One variable measured each maternal belief. Both variables were highly reliable as assessed by Cronbach’s alpha. Details about the items forming these variables and the internal reliability of the variables were described in the Methods chapter. Table 7-1 shows the average belief a mother had, along with standard deviations. Mothers on average believed it was important that young children have early educational experiences and learn language and literacy skills before entering Kindergarten. Mothers on average were in somewhat
agreement that young children could learn language and literacy skills and concepts from high-quality television. There was less variation in how mothers viewed the importance of school readiness in comparison to how mothers viewed educational television.

**Maternal participation and scaffolding.** There were eight dependent variables (see Table 7-2). The eight variables describing maternal behaviors (i.e., all participation and scaffolding) for this chapter are the same variables used for the next chapter relating maternal participation and scaffolding with children’s learning. The difference is that the variables describing maternal participation and scaffolding are the dependent variables in this chapter and in the next chapter they are the independent variables. Four of these variables were: (a) the amount a mother participated during the entire program; (b) the amount a mother participated during scaffolding opportunities (i.e., when there were target items and skills presented in the program that the mother thought her child did not know); (c) the amount a mother scaffolded (which only took place during scaffolding opportunities); and (d) the ratio of the amount a mother scaffolded to the amount a mother participated during scaffolding opportunities. Four additional variables were calculated in order to account for variations in the scaffolding opportunities a mother had.

The rationale for these additional variables was that a scaffolding opportunity determined the maximum amount of participation and scaffolding a mother could display and mothers varied in the number of scaffolding opportunities they had. To adjust for this, two characteristics of the segments in which scaffolding opportunities took place were considered: the total number of segments and the duration of the segments a mother had scaffolding opportunities. As discussed in the Methods chapter, the duration of program segments varied. The amount a mother participated during scaffolding opportunities was highly correlated to these characteristics of the
segments in which scaffolding opportunities took place, as was the amount a mother scaffolded (see Table 7-3).

Accordingly two of the variables about the maternal behaviors that occurred during scaffolding opportunities (i.e., the amount a mother participated during scaffolding opportunities and the amount a mother scaffolded) were adjusted for the number of segments the mother had scaffolding opportunities and the number of seconds in which these scaffolding opportunities occurred. Adjustments for each of these variables were made by calculating (a) the ratio of maternal behaviors to number of segments with scaffolding opportunities and (b) the ratio of maternal behaviors to total number of seconds of the segments with scaffolding opportunities.

**Relation of Maternal Beliefs to Participation and Scaffolding**

A mother’s belief about school readiness was a significant predictor ($B = -.46, p < .05$) for the amount a mother participated during scaffolding opportunities adjusted for the number of seconds in which scaffolding opportunities took place. However, the regression model with a mother’s belief about school readiness and a mother’s belief about educational television only explained 17% of the variance of the amount a mother participated during scaffolding opportunities adjusted for the number of seconds in which scaffolding opportunities took place, $R^2 = .17, F(2,30) = 2.87, p = .07$, which was not statistically significant. Neither belief was a significant predictor for the other outcome variables about maternal participation and scaffolding.
CHAPTER VIII

Relation of Maternal Participation and Scaffolding to Children’s Learning

This chapter examines whether maternal participation and scaffolding while coviewing predicted children’s learning of target vocabulary, sight words, and reading skills that were presented in *Showy Show: The Preschool Show*, the educational program all mother-child dyads watched. The first section of this chapter examines whether children learned the target vocabulary, sight words, and reading skills. The second section of this chapter examines whether some variables associated with the children and some variables associated with the mothers predicted children’s learning of the target vocabulary, sight words, and reading skills.

Children’s Learning During Coviewing

It was expected that children would make significant gains in their knowledge of some of the target vocabulary, sight words, and reading skills that were presented in the program after coviewing. The rationale for this expectation was that the program the children watched presented these vocabulary, sight words, and reading skills throughout the program and mothers were there to assist their children. It also was expected that children learn some emergent reading skills since the program provided ample opportunity for the mother and child to practice these skills. However, it was not expected that children would read sentences fluently after coviewing, as described in the methods.

T-test analyses were used to determine whether children’s knowledge of the target vocabulary, sight words, and reading skills changed significantly from the pre-assessment to the post-assessment. In this way, it could be determined whether children learned after coviewing the educational program. For final analyses, there were two variables used to measure a child’s knowledge of the target vocabulary, sight words, and reading skills. One variable measured a
child’s knowledge of target vocabulary and sight words and consisted of 14 items. The other variable measured a child’s knowledge of target reading skills and consisted of 2 items. Details about the items forming these variables and the internal reliability of the variables were provided in the Methods chapter.

T-test analyses showed that there was a significant difference in children’s knowledge of target vocabulary and sight words from pre-assessment to post-assessment, \( t_{[30]} = -7.52, p < .01 \). There also was a significant difference in children’s target reading skills from pre-assessment to post-assessment, \( t_{[30]} = -2.39, p < .05 \). These findings confirm that significant learning happened while mothers co-viewed the educational program with their children.

**Relation of Child Characteristics to Learning**

While the previous section showed that children learned some target vocabulary, sight words and reading skills from co-viewing the program, this section examines variables that might have been associated with a child’s learning of target vocabulary, sight words and reading skills. The first part analyzed whether variables associated with the child (i.e., pre-assessment score, age, and gender) predicted a child’s learning of target vocabulary, sight words and reading skills. The second part analyzed whether variables associated with the child’s mother (i.e., the amount of maternal participation and scaffolding) predicted a child’s learning of target vocabulary, sight words, and reading skills. In these analyses (and the analyses for the next part), the outcome variable used to measure a child’s learning was a child’s post-assessment score. A child’s pre-assessment score was used in all regression models.

There were three expectations for how the variables associated with the child might predict a child’s learning of the target vocabulary, sight words, and reading skills. First, it was expected that a child’s pre-assessment score, would predict a child’s post-assessment score. The
rationale for this expectation was that t-tests analyses showed that there was significant change from pre-assessment to post-assessment for target vocabulary and sight words as well as reading skills. Another expectation was that a younger child in the study (i.e., a child who was 3-years-old) would not learn as many of the target vocabulary and sight word items and reading skills as an older child in the study (i.e., a child who was 5-years-old). The rationale for this expectation was that an older child would presumably have more experience and ability in emergent language and literacy content and skills and be more ready to learn some of these items and skills than a younger child. Also, the program might have appealed to children of a certain age for various reasons (e.g., certain program content or features), which could associate with what children could learn. Finally, it was expected that the child’s gender might predict a child’s learning since it could be that the educational program everyone watched appealed to one gender more than another or mothers participated differently with one gender.

Regression analysis was used to test these expectations by analyzing whether these three variables associated with the child (i.e., a child’s pre-assessment score, age, and gender) were significant predictors of a child’s learning of the target vocabulary, sight words, and reading skills. One regression model was used to test if these three variables associated with the child predicted a child’s learning of target vocabulary and sight words as measured by a child’s post-assessment score for the target vocabulary and sight words. A second regression model was used to test if these three variables predicted a child’s learning of target reading skills as measured by a child’s post-assessment score for the target reading skills. Forced entry was used to enter the independent variables in the regression models since it was thought that for each model, at least two of the three variables would predict a child’s learning.
The results of the first regression indicated that a child’s pre-assessment score for target vocabulary and sight words, a child’s age, and a child’s gender explained 50% of the variance, \( R^2 = .50, F(3, 30) = 8.93, p < .01 \). A child’s pre-assessment score for target vocabulary and sight words was a highly significant predictor of a child’s post-assessment score for target vocabulary and sight words (\( B = .64, p < .01 \)). The results of the second regression indicated that a child’s pre-assessment score for target reading skills, a child’s age, and a child’s gender explained 50% of the variance, \( R^2 = .50, F(3, 30) = 9.01, p < .01 \). A child’s pre-assessment score for target reading skills was a significant predictor of a child’s post-assessment score for target reading skills (\( B = .67, p < .01 \)). Neither a child’s age nor a child’s gender was a significant predictor of either regression model. Tables 8-1 and 8-2 show the results for the significant predictors for both regression models.

**Relation of Maternal Participation and Scaffolding to Learning**

There were four expectations for how maternal participation and scaffolding might predict a child’s learning of target vocabulary, sight words, and reading skills while a mother co-viewed an educational television program with her 3- to 5-year-old child. It was expected that children’s learning would be predicted by: (a) the amount a mother participated during the entire program; (b) the amount a mother participated during scaffolding opportunities (i.e., when there were target vocabulary, sight words, and reading skills presented in the program that the mother thought her child did not know); (c) the amount a mother scaffolded (which only took place during scaffolding opportunities); and (d) the ratio of the amount a mother scaffolded to the amount she participated during scaffolding opportunities. The rationale for this set of expectations was that all participation by a mother during the entire program likely would engage a child with the program content so that a child could learn; the behaviors mothers did *just in
time for a child to learn (i.e., during scaffolding opportunities) would likely help a child learn; and the behaviors identified as scaffolding would especially help a child learn since these were effective strategies to help a child learn something that a child might not be able to learn unassisted.

Regression analysis was used to test these expectations by analyzing whether the variables associated with the mother (i.e., the amount of maternal participation and scaffolding) predicted children’s learning of the target vocabulary, sight words, and reading skills. In the same way as in the last chapter, four additional dependent variables were calculated in order to account for variations in the scaffolding opportunities mothers had. The rationale and procedures for calculating these additional variables were described in the last chapter.

Eight regression models were used to test whether maternal participation and scaffolding predicted children’s learning of the target vocabulary, sight words, and reading skills. Separate sets of regressions were used for each dependent variable (i.e., one variable for knowledge of vocabulary and sight words and one variable for reading skills). Each regression model included two independent variables (i.e., one described maternal participation or scaffolding and the other was the child’s pre-assessment score for the learning outcome being tested—either knowledge of target vocabulary and sight words or reading skills). Forced entry was used to enter the variables into the model because it was thought that both independent variables would predict children’s learning.

There were two significant findings about how maternal participation and scaffolding predicted children’s learning of the target vocabulary, sight words, and reading skills. First, the amount a mother participated during scaffolding opportunities and a child’s target vocabulary and sight word pre-assessment score explained 56% of the variance in target vocabulary and
sight word learning, $R^2 = .56$, $F(2,30) = 17.74$, $p < .01$. The amount a mother participated during scaffolding opportunities predicted a child’s learning of target vocabulary and sight words ($B = -.28$, $p < .05$) as did a child’s vocabulary and sight word pre-assessment score ($B = .63$, $p < .01$). Second, the amount a mother scaffolded and a child’s target vocabulary and sight word pre-assessment score explained 57% of the variance in target vocabulary and sight word learning, $R^2 = .57$, $F(2,30) = 18.54$, $p < .01$. The amount a mother scaffolded predicted a child’s learning of target vocabulary and sight words ($B = -.30$, $p < .05$), as did a child’s target vocabulary and sight word pre-assessment score ($B = .65$, $p < .01$). While two of the four regression models used to test if maternal scaffolding and participation predicted children’s learning of target vocabulary and sight words had significant predictors, none of the four regression models used to test if maternal scaffolding and participation predicted children’s learning of target reading skills had significant predictors. Table 8-3 shows the results for the two regression models with significant predictors.
CHAPTER IX

Discussion

It was relevant and important to update what we know about how parents mediate their children’s television viewing. We know that children can learn from television and that what parents do can make a positive difference in what children learn. We also know that young children (0- to 6-years-old) watch over two hours of television a day and that parents report that they are around 40% of that time (Rideout et al., 2003). All of the above seems to indicate that parents have ample opportunity to help their children learn from television.

While past studies confirm that parental coviewing has a positive effect on children’s learning, the majority of the studies do not detail how parents participate while coviewing nor use a scaffolding lens to describe parental mediation while their children watch television. Much of what we know about how parents mediated their children’s viewing of educational television and how they influence their children’s learning from educational television has been informed by research done in the 1970s and 1980s. This research, for the most part, relied on self-reported data from questionnaires and surveys, which did not provide a complete picture of what parents did while mediating. Also, a lot has changed since the majority of the research on parental mediation of children’s viewing of television was done. Parents now have more access to educational programming and can use educational television differently than in the past.

The primary goals of this dissertation were to get a current portrayal of how mothers participated and how they scaffolded while coviewing an educational program at home with their 3- to 5-year-old children; determine whether maternal participation or scaffolding made a difference in children’s learning of the target vocabulary, sight words, and reading skills presented in an educational program; and determine reasons mothers might have participated in
the ways they did. This study differed in two main ways from most of the studies about parents coviewing while their young children watched television by: (a) using home observations to portray what mothers normally do while coviewing and (b) describing some of what mothers did as scaffolding to unveil specific ways that parents can positively impact what children might learn from educational television.

Identifying the ways that parents participate while coviewing with their children can help us see how parents utilize educational television and interact with their children. Additionally, by using a scaffolding lens we can see how parents help their children when they encounter something that they likely cannot do or learn without assistance. Then, by examining the reasons parents participate in the ways they do, we get a more complete picture of why parents participate while coviewing. This knowledge can be beneficial for researchers, parents, and designers of educational television to find ways to maximize the learning potential of educational television.

For this dissertation study, 31 mother-child dyads were observed watching an educational program in their homes and at a time convenient to them so that they would be comfortable to do what they normally did. The program everyone watched had a language and literacy focus. Children were assessed before and after the study on a subset of the vocabulary, sight words, and reading skills presented and discussed in the program to determine whether children learned after watching the program with their mothers. All mothers completed a survey prior to the observation and answered follow-up questions after the observation. The survey was used to identify the scaffolding opportunities (i.e., the places in the program mothers could scaffold since they thought that their children did not know the target vocabulary, sight word, or reading skill as determined by mothers’ survey responses prior to the observation) and to measure the beliefs
mothers had about school readiness and educational television as a tool to learn. The follow-up questions helped situate some of the findings.

A mother’s behavior was coded as scaffolding if what the mother did was a scaffolding strategy and occurred when she had a scaffolding opportunity. The program was divided into 70 segments, all worthy of participation. Each segment was analyzed for the types of content and formal features present. Fourteen types of behaviors were used to describe how mothers participated throughout the entire program and seven strategies were used to describe how mothers scaffolded. There were 5 types of content and 61 formal features identified in the program. Two belief measures were used to examine how maternal beliefs predicted maternal participation and scaffolding.

Results showed that children learned some of the target vocabulary, sight words, and reading skills and that what mothers did and their scaffolding seemed to make a difference in some of what children learned. Further examination was done to understand (a) how particular program characteristics might have related to the ways mothers participated and their scaffolding and (b) how maternal beliefs predicted the amount of maternal participation or scaffolding. Some of the program’s characteristics (i.e., its content and how the content was delivered) related to some of what mothers did and their scaffolding. However, contrary to the study expectations neither belief that was measured (i.e., about school readiness and about educational television as a tool to learn) predicted the amount mothers participated or scaffolded. Some of what mothers did and their scaffolding predicted children’s learning of the target vocabulary and sight words but not the reading skills. Based on what we do know about how parents have mediated while their children watch television in the past, mothers in this study participated in similar ways as reported in past studies.
Portrayal of How Mothers Participated

A primary purpose of this dissertation was to portray how mothers participate while coviewing an educational program at home with their 3- to 5-year-old children. One reason to portray how mothers participated was to supplement what we know about parental mediation while children watch television in general and coviewing in particular. Another reason to portray how mothers participated was to get a current account of how parents coview today. Most of what informs our understanding of parental mediation while children watch television comes from self-reports. Also, the majority of research on parental mediation took place during the 1970s and 1980s.

A surprising finding of how mothers participated while coviewing was that on average mothers did not participate very much. Mothers on average only participated in 23 of the 70 program segments. A mother who was at the median in terms of the total number of behaviors a mother did, did 39 total behaviors. In about half of these segments, mothers on average did 1 total behavior. In segments when mothers did more than one behavior, they on average did 4 total behaviors, which could be a combination of the same and different types of behavior. More participation by these mothers while coviewing was expected since the program was age-appropriate and prompted viewer participation. Also, the mothers were from middle-class families, a demographic which past research shows speaks to their young children frequently (Hart & Risley, 2003) and the mothers knew the objectives of the study. Another surprising finding was that mothers watched the program from beginning to end. They did not pause or review, in order to discuss the program more. This way of watching television is similar to how parents in the 1970s and 1980s watched television, which could be watched only at the scheduled broadcast time.
Although this study focused on maternal behaviors and did not detail extensively what it was that the child was doing during the observation, it is recognized that the mother did not behave in a vacuum. The coding of what the mother did was relevant to what the child did. For example, if a child was attending to the program, a mother generally did not do things that I as observer would interpret as an attempt to focus her child’s attention on the program. Also, if a mother saw that her child was either familiar or not familiar with an item or skill presented in the program, she was likely to address that item or skill with the child. With this said, there was an emphasis in the coding on what mothers did, and I did not opt for a more detailed back and forth coding for each mother-child dyad throughout the observation since the emphasis was on what mothers did. I as researcher and observer wanted to give parents advice about what to do with their children and such advice is likely to be mostly about the adult behavior. Certainly a coding that detailed what the child did would be interesting. The children’s behaviors in addition to the mothers’ behaviors were tracked in this study, and as a future project I might return to using this data.

We should consider whether what was portrayed during the home observations was what mothers normally did when their children watched television at home. The researcher went to great efforts so that during the observation the mother and her child would participate as they normally did at home when watching television. To do this, the researcher tried to get the participants familiar and comfortable with the researcher and the research procedures prior to the observations. The researcher went to the participants’ homes prior to the observation, showed the participants the equipment to be used during the observation, and instructed mothers to do what they normally did when watching television with their children during the observation. These
procedures are consistent with research on how to effectively conduct home observations of parents and children (Hart & Risley, 1995; Messaris & Sarett, 1981).

Despite these efforts, only about 40% of the mothers reported that what they did during the observation was mostly what they normally did while their children watched educational programs. There were equal percentages, of about 30% each, of mothers who said that what they did was the same and different or was different from what they normally did. The mothers referenced the following as what they normally do but did not do during the observation: doing more silly behaviors, asking more questions, reading while sitting with their children, getting up more, and talking less. This seems to imply that some mothers might usually participate while coviewing even less than they did in this study.

There are several explanations for why what mothers did during the observation might not have been what they normally did at home. First, we cannot underestimate the pressure mothers might have felt to say the right answer or to do the right behavior. As a consequence, mothers might have reported that what they did was what they normally did, even if it really was not what they normally did. Mothers might have over-done or even under-done what they normally did thinking that there was a right way that they should behave. The researcher knew about half of the participants, which might have added to this social pressure to say the right answer or to do the right behavior in the right way.

Another explanation could be that the educational program everyone watched, Showy Show: The Preschool Show, was a different type of educational program from what the children normally watched. Only 16% of the mothers said that Showy Show: The Preschool Show was similar to the types of programs their children watched. The rest of the mothers reported Showy Show: The Preschool Show as being similar and different (32% of the mothers) and mostly
different (52% of the mothers) from what their children normally watched. When mothers reported that *Showy Show: The Preschool Show* was different, they referenced *Showy Show: The Preschool Show* being more academic, having more adult characters, and being more interactive than the programs their children usually watched. However, the majority of mothers liked the program and thought that their children liked the program despite the program being different than what their children normally watched.

Even though what was observed might be different from what most mothers normally do, what was observed shows what mothers are capable of doing while coviewing. This knowledge is important since, as mentioned earlier, past studies show that coviewing educational television with 3- to 5-year-old children has a positive effect on what children learn while watching television (Ball & Bogatz, 1970; Rice, Huston, Rosemarie et al., 1990; Salomon, 1977). However, we lacked knowing what it was that parents did while coviewing, some of which could help children learn. The present study details what happened while coviewing an educational program.

The majority of mothers provided feedback to what they said in relatively high frequency compared to other types of behaviors they did. This finding is similar to one of the few naturalistic studies about coviewing educational television, and the most recent, in which mothers provided feedback to their infants (Barr, 2008). All mothers used the program content to frame what they said or did while coviewing. This conforms to other research about how parents have mediated their children’s viewing of television in general (Austin, 1993; Valkenburg et al., 1999) and of educational television (Barr, 2008). It is comforting to know that mothers provided their children feedback to what they said or did and discussed the program content with them. Though the program itself delivers the content, it is not able to answer real-time questions or
provide real-time feedback to the child to indicate whether the child’s response was correct. Providing live feedback and discussing content are some of the benefits of coviewing and mothers in this study did this.

There were two types of behaviors, both important for children’s learning, that were used infrequently by mothers during the entire program. Only about a third of the mothers used anticipatory (e.g., “We are going to learn some words”) and summary (e.g., “We just learned three words”) statements and questions. These statements and questions can help a child focus on what is to come or reflect on what just happened. A possible explanation for why few mothers might have done this type of behavior could be that overall mothers lacked familiarity with the program and program format. Research shows that having a regular structure or format helps the viewers anticipate what is expected of them (Fisch & Truglio, 2001).

During the program there were many opportunities for mothers to check if their children understood the target items and skills. The program asked the viewer questions about vocabulary and sight words and the children often answered these questions. Only about a third of the mothers asked children to explain their thinking (e.g., “How do you know this?”). This finding suggests that mothers might have missed opportunities to see whether their children understood some of the target items and skills. By asking children to explain their thinking, parents can begin to see whether the child has a partial or complete understanding of the skill or content.

**Portrayal of How Mothers Scaffolded**

Identifying the types of behaviors mothers did while coviewing an educational program enriches our understanding of what parents do while coviewing. By using a scaffolding lens, we can identify how a mother can help her child when there was something that the child might not have been able to do or learn alone, which enriches our understanding of how parents help their
children learn from television. The majority of the studies that have informed our understanding of how mothers have mediated their children’s viewing of television did not conceptualize what they did as scaffolding. Hence, a second goal of this study was to see how mothers scaffolded. Identifying how mothers scaffolded was used to determine how mothers guided their children when there was a target item or skill that was presented in the program that the mothers thought that their children did not know. The strategies that mothers used to scaffold were thought to help children’s learning of skills or to complete tasks that they were ready to do but only with help. Six of the seven strategies were strategies previously used in studies about scaffolding (van de Pol et al., 2010).

The median number of times mothers scaffolded was 11 and the median number of scaffolding opportunities mothers had was 48. There are a couple of explanations for mothers scaffolding the target items and skills less than expected. First, it could be that mothers lacked familiarity with the program, which might have kept them from scaffolding. Previewing the program was significantly correlated with how much mothers scaffolded \( r (29) = .64, p < .01 \), based on a two-tailed test. However, previewing the program was not significantly correlated with how much mothers participated during the entire program \( r (29) = .28, p = .12 \), also based on a two-tailed test. Although mothers were asked to preview the program before the observation in order to be familiar with what they were going to watch, only 20 of the 31 mothers watched the program one time before the observation. Previewing a program introduces the program format and learning objectives to the viewer, which might be an explanation for why mothers who previewed the program scaffolded more. Another explanation for mothers not scaffolding often relative to the number of opportunities they had could be that mothers might have been expected to help in situations that were beyond their children’s ZPD. Mothers may have thought
that their children were not ready to learn the target item or skill that was presented or discussed during the program segment, a study limitation that will be discussed later.

Of the seven strategies used to describe how mothers scaffolded, mothers mostly used five (i.e., modeling, questioning, checking in, explaining, and feeding back) when they scaffolded. When each of these strategies was used to scaffold, at least half of the mothers used that strategy. For each of these strategies, at least 3 mothers used it to scaffold at least 4 times. Conversely, mothers rarely used the other two strategies (i.e., instructing and giving hints) when they scaffolded. Only 9 mothers scaffolded by instructing and only 10 mothers scaffolded by giving hints. For each of these strategies, no mother used it to scaffold more than 3 times. The mothers who scaffolded by instructing (e.g., explaining what the stars were above the text of the song lyrics) or giving hints (e.g., sounding the letters of the word instead of saying the whole word first) often provided their children with a learning step not provided by the program. These steps (e.g., tracking and decoding the word) can help children do the larger task (e.g., reading an entire word or sentence). One possible explanation for why these two strategies were under utilized by mothers could be that these two strategies were seemingly more complex than the other five strategies, often requiring the larger, end task to be broken down into smaller steps, which mothers might not have considered doing.

What Children Learned and How Mothers Might Have Helped Them Learn

A primary goal of this study was to identify what it was that parents did while coviewing that might have had an effect on what their children learned from television. Research in other domains (e.g., book reading, using computers, language development, and instruction) indicates that some ways that adults guide their children make a greater impact than do other ways on what a child can learn (Hargrave & Sénéchal, 2000) and the activities and tasks the child does
(Hart & Risley, 1995; Neuman & Celano, 2006). However, this was a missing part of the past research about parental mediation of children’s television viewing. Past research about parental mediation of children’s television viewing showed that coviewing had a positive effect on children’s learning outcomes (Rice & Woodsmall, 1988; Salomon, 1977). However, it did not describe what it was that parents did while coviewing that might have had an effect on children’s learning.

Before examining whether what mothers did predicted children’s learning, it first needed to be established that children learned. Two t-tests were used to determine whether children learned the target skills and content. One t-test was done to determine whether children learned the target vocabulary and sight words and the other t-test was done to determine whether children learned four target reading skills. T-test results showed that children in this study learned some of the target vocabulary, sight words, and reading skills. This conforms to existing literature that educational television has been effective to help children learn emergent literacy items and skills (Linebarger, 2001; Linebarger et al., 2004; Linebarger & Walker, 2005; Rice & Woodsmall, 1988).

Overall children showed significant change from pre- to post-assessment for the vocabulary and sight words and reading skills. Some children showed negative change (only for vocabulary and sight word items), some children showed positive change, and some showed no change for some of the assessment items. Guessing could have accounted for some of these changes from pre- to post-assessment items, particularly for the multiple-choice items measuring children’s learning of vocabulary and sight words. However, it is highly likely that beyond guessing, something that went on in the learning environment facilitated change in what children showed that they learned after watching the program with their mothers.
It is likely that the program itself could have helped children learn some of the target vocabulary, sight words, and reading skills. The program all participants viewed was informed by the High/Scope Preschool Curricula, a research-based curriculum (Hohmann et al., 2002) and designed so that young children could learn emergent literacy items and skills. Sixty percent of the program segments discussed or presented some of the vocabulary and sight word items and reading skills assessed. Also, the program used many formal features (i.e., audio and visual techniques) throughout the program that might have helped to engage, entertain, and educate the viewer.

Though it is likely that the program had an effect on children’s learning, this study suggests that maternal participation and scaffolding while coviewing also might have had an effect on children’s learning, particularly their learning of vocabulary and sight words. There were two significant regression results. The amount mothers participated during scaffolding opportunities and the amount mothers scaffolded (which only could take place during scaffolding opportunities) significantly predicted children’s learning of vocabulary and sight words. This finding conforms to past studies that show that coviewing has a positive effect on children’s vocabulary development (Rice & Woodsmall, 1988; Salomon, 1977). As a reminder, the codes about maternal participation (i.e., the types of behaviors mothers did) and maternal scaffolding (i.e., the types of strategies mothers used during a scaffolding opportunity) were not completely independent of one another. All maternal behaviors had a corresponding code for type of behavior. However, not all behaviors had corresponding codes for scaffolding. Some of the scaffolding strategies involved more than one behavior on the mother’s part.

Neither predictor about how much mothers participated during the entire program and the ratio in which mothers scaffolded to all behaviors they did significantly predicted children’s
learning of the vocabulary and sight words. Also, none of the predictors (i.e., how much mothers participated during the entire program and scaffolding opportunities; how much mothers scaffolded; and the ratio of scaffolding to all behaviors a mother did during scaffolding opportunities) significantly predicted children’s reading skills. It was only during scaffolding opportunities (a subset of the program segments) and not during the entire program that maternal participation predicted children’s learning of vocabulary and sight words.

Together, these findings suggest that the just in time behaviors, scaffolding and non-scaffolding which took place during scaffolding opportunities when there was an item or skill to be learned, seemed to have an effect on children’s learning of sight words and vocabulary. It is intriguing that how some of what mothers did predicted children’s learning of vocabulary and sight words but not their reading skills. A possible explanation could be that the program more explicitly discussed the target vocabulary and sight words than it did reading, which might have prompted mothers to participate and scaffold.

Possible Reasons for Maternal Participation and Scaffolding

There might be reasons for why mothers participated and scaffolded in the ways they did. One likely reason for how mothers participated and scaffolded are the program characteristics – the content presented and the formal features (i.e., audio and visual techniques used to deliver the content). The program mothers and children coviewed was selected because it targeted language and literacy skills and concepts and drew upon techniques that have been used effectively in educational television programs to get the viewer’s attention and help the viewer comprehend the material. In addition, there might have been particular beliefs mothers had, in particular beliefs about school readiness in the area of language and literacy and television as a tool to learn, that
might have predicted the amount mothers participated and scaffolded. The ways that program characteristics might relate to maternal participation and scaffolding will first be discussed.

**How program characteristics potentially influence participation and scaffolding.** It was not possible to analyze the data about program characteristics, maternal participation, and maternal scaffolding with robust statistical tests in order to establish significant relationships. As a result, probable rather than significant relationships were identified and reported in this dissertation. Also, in order to do appropriate analyses, some variables were excluded from analyses or aggregated for analyses. The variables (i.e., some types of content, formal features, and types of behaviors) that were present in less than 25% of the program segments were excluded from analyses. Additionally, the strategies mothers used to scaffold were aggregated into one variable.

It is recognized that in order to find probable relations between program characteristics and maternal behaviors, the characteristics were abstracted and analyzed in isolation, although some of the characteristics were aggregated (e.g., the use of text and the use of music). However, most characteristics were not (e.g., a type of transition). One reason for this was that there was no segment where there were a lot of mothers (i.e., more than 12 mothers) participating. Because of this, it was not possible to say that a particular feature or set of features might have had an effect on what mothers did.

Some of the variables that were excluded from analyses might have had probable relationships with other variables. For example, the content with reading skills was a variable excluded from analyses that might have been related to some types of behaviors mothers did or their scaffolding. Since results showed that the amount of maternal participation or scaffolding did not predict children’s learning of reading skills, it would have been interesting to see whether
maternal participation or scaffolding related to content about reading skills. It also would be interesting to see whether program characteristics related to specific scaffolding strategies (which were not analyzed due to infrequent occurrence) rather than just whether mothers scaffolded (which was analyzed). In particular, it would have been informative to see whether the two strategies that mothers did infrequently (i.e., instructing and giving hints) were related to certain program characteristics. These two strategies, as previously discussed, were expected to be particularly important for children’s learning of new items and skills.

Some of the findings about probable relationships between the variables were expected while others were surprising. An expected finding was that when the program content was about target vocabulary and sight words, mothers might do one of four types of behaviors (i.e., explain about the program, ask questions about the program, ask questions that relate the content to the child’s experience, and give feedback) and/or scaffold. The vocabulary and sight words, at least some of them, were items that the mothers had indicated that their children did not know. Therefore, it was expected that when these items and skills appeared mothers might participate by discussing the content; helping their children learn the item or skill; and providing feedback to their children.

There also were some surprising findings. First, there were very few probable relationships in comparison to the number of pairs and packages of variables analyzed. Another surprising finding was that the formal features that seemed to have a probable relationship with the amount mothers participated were not the same features that had probable relationships with the amount mothers scaffolded. To illustrate, the characters and the music had probable relationships with certain types of behaviors mothers did while the use of text and voiceovers had probable relationships with maternal scaffolding. A possible explanation for this could be
how the features were used in the program. The use of text and voiceovers all had to do with the
target vocabulary, sight words, or reading skills while the features that had probable relationships
with how a mother participated had to do with multiple types of content (i.e., story; prosocial;
reading; and vocabulary and sight words). Another surprising finding was that the interactive
features of the program (i.e., talking to the viewer and asking the viewer to participate) did not
have probable relationships with mothers doing some types of behaviors or scaffolding. These
features have been effective to get the viewer’s attention (Fisch & Truglio, 2001) and might help
“break the 4th wall” to make the viewer feel part of the program. The last surprising finding was
that packages of program characteristics had a probable relationship only with mothers
prompting their children to do an action. It was expected that packages of content and formal
features would relate to how mothers participated. Specifically, it was expected that the package
of a voiceover and text on-screen would have related with maternal scaffolding, since a similar
combination of features (i.e., text and verbal instructions) has been effective in learning (Mayer
& Moreno, 2002).

**How maternal beliefs potentially influence participation and scaffolding.** We have
seen that some of the program characteristics had probable relationships with how mothers
participated throughout the program and how they scaffolded. It was also expected that some
beliefs mothers had would relate to how they participated and scaffolded, particularly beliefs
about school readiness and the value of educational television as a tool to learn. These beliefs
were measured since participants watched a television program that focused on emergent
language and literacy items and skills. Also, research shows that beliefs about readiness to learn
relate to parental practices (Reese et al., 2000).
Mothers in this study on average had stronger beliefs about school readiness than educational television as a tool to learn. To illustrate, mothers on average believed that early educational experiences and skill acquisition of language and literacy concepts were important (i.e., in between being very important and somewhat important) and agreed partially (i.e., were in somewhat agreement) that preschool-age children could learn language and literacy skills and concepts from high-quality television. There was less variation in how mothers viewed the importance of school readiness in comparison to how mothers viewed educational television as a tool to learn. The ambivalence that some of these mothers had about television as a learning tool was consistent with findings from the Kaiser Family Foundation national survey of children 0- to 6-years-old (2003). In that study, 43% of parents said that television mostly helps children learn, while 27% of parents said that television mostly hurts children’s learning and only 21% of parents said that television does not affect learning (Rideout et al., 2003).

A surprising finding was that neither belief predicted how much mothers participated, how much they scaffolded (at least very strongly), or the ratio of scaffolding to all behaviors a mother did during scaffolding opportunities. There was one significant finding, but with a weak regression coefficient, that a mother’s belief about school readiness was a significant predictor for all behaviors a mother did during scaffolding opportunities adjusted for the number of seconds in which scaffolding occurred. Intuitively it makes sense for mothers with a strong belief about school readiness or about television as a tool to learn would do more to support their children’s learning while watching educational television. There are three possible explanations why maternal beliefs were not significant predictors of how much mothers participated, how much they scaffolded, or the ratio of how much they scaffolded to how much they participated during scaffolding opportunities. One explanation could be that the measures used (i.e., the
beliefs and the variables used to describe how mothers participated or how they scaffolded) were not the right measures. Another explanation could be that mothers might not have been invested to participate much in this particular program – a program that they did not select and was mostly different from what their children watched. Finally, it could be that while watching television, mothers, even mothers who have strong beliefs, disengage and do not participate in the ways one would expect mothers with those beliefs should participate.

**Limitations**

Several important limitations need to be considered regarding the present study. A limitation was that this was a relatively small sample (i.e., 31 dyads), which limits how the results can be generalized. Also, a small sample size was particularly an issue in relating what mothers did with program characteristics (i.e., the type of content and formal features). To illustrate, one criterion in the analyses to relate the program characteristics with how mothers participated and scaffolded was that on average at least two mothers needed to do that type of behavior during a program segment in order to say that the type of behavior or maternal scaffolding had a probable relationship with a type of content or feature.

Another limitation was that mothers on average did not participate or scaffold a lot during the program. Similar as with having a small sample size, this primarily affected the analyses of how the program content and formal features related to how mothers participated and scaffolded. As a result of having low participation and scaffolding by the mothers, some types of behaviors mothers did were excluded from analyses because not enough mothers did those behaviors. Also, rather than analyzing individual strategies that mothers used to scaffold, the seven strategies were aggregated. It could be that some of the variables excluded or aggregated could have been related with other variables.
An additional study limitation was that there was one program and one observation. Many of the educational television programs that children watch are part of a series. In a series, each episode differs but generally the main characters and the format stay the same. Over time children and their parents become familiar with what is expected of the child. During one observation it could be that the child or parent had an off day. It could be that a future study could portray how mothers participated while coviewing multiple episodes of a series.

There were limitations in how scaffolding was conceptualized and operationalized in this study. Mothers could have done more scaffolding overall than what was reported in this study. The reason for this is that I as observer and researcher only coded behaviors as scaffolding if mothers used a strategy (i.e., one of seven identified) in relationship to a target item or skill (i.e., a subset of vocabulary, sight word, or reading skills presented in the program) that mothers thought that their children did not know. As mentioned earlier, mothers could have scaffolded other skills and items other than the target items and skills.

Also whether mothers scaffolded was based on what the mother thought that her child did not know and not what the child demonstrated knowing. As described earlier, the rationale to base whether a mother scaffolded on what a mother thought the child knew rather than on whether the child actually knew the target item or skill, was that the ZPD of a child could be measured by seeing whether a mother thought that her child was ready to learn that target item or skill (through follow-up questions). With this conceptualization, it could be that a mother was not accurate in whether her child knew a target item or skill. For example, a mother might have reported that her child did not know the target item or skill when her child really did know that item or skill. In this example, according to how scaffolding was conceptualized, what the mother did would have been considered scaffolding but technically a mother would not scaffold if her
child already knew the item, skill or concept, or knew how to do the task. On the other hand, a mother could have reported that her child knew a target item or skill when her child did not the item or skill. In this example, what the mother did would not have been coded as scaffolding but a mother indeed could have scaffolded.

While this study took into account what a mother thought was not in her child’s ZPD (i.e., the mother thought her child already knew the target item or skill), it did not take into account what was not in the child’s ZPD if the child was not ready to learn that item or skill. However, the study was designed to address what the mother thought were the outer limits of the child’s ZPD by asking her questions about why she did what she did when there was a scaffolding opportunity. The answers mothers provided were inconsistent so it was decided that these follow-up questions would not be used to verify that mothers had indeed scaffolded their children to learn the target items or skills. Therefore, the possibility that a mother thought her child was not ready to learn the target item or skill does still exist since what a mother did was still coded as scaffolding when technically scaffolding should only take place if the task or skill was within the child’s ZPD.

A final limitation was that a child’s knowledge of the target vocabulary and sight words was aggregated during analyses. Separate measures of a child’s knowledge of receptive or expressive vocabulary and of a child’s knowledge of vocabulary and sight words were not internally reliable so therefore were aggregated for analyses. The results of this study show that some of what mothers did while co-viewing predicted children’s learning of target vocabulary and sight words. However, with the results of this study, we do not know whether what mothers did predicted children’s learning of receptive and/or expressive vocabulary.

**Practical Implications**

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The findings of this study have three important implications. Parents should know that how they participate while co-viewing, particularly when there are items or skills that they think their children do not know, can make a difference in what children can learn from an educational program. It is also important that parents know that how much they participate and scaffold seems to be important in what children can learn.

Educational television programs, particularly those with skills and content that might be a little beyond what a child currently knows, might need to emphasize those skills and content more. Parents might also need to talk about and scaffold these skills more for children to learn more. This implication is based on the finding that while some of what mothers did predicted children’s learning of the vocabulary and sight words but not children’s reading skills. These are important aspects to keep in mind as educational programming is developed.

Designers of educational television should know that a program with a strong academic content, having text on-screen, and the use of voiceovers, might relate with maternal scaffolding. It seems that these program characteristics, as they did in this study, might encourage mothers to engage more with items and skills that children are likely not to know prior to watching the program. This is important because how much mothers scaffolded predicted children’s learning of target vocabulary and sight words.

Research Implications and Next Research

This research has raised questions in need of further investigation. First, the reasons these mothers participated and scaffolded less than expected should be investigated. The mothers were middle-class, a demographic that was selected since these mothers most likely co-view (Warren, 2005) and engage extensively with their children (Hart & Risely, 1992). Further exploration of why these middle-class mothers might participate or not participate should be considered. If we
know reasons why mothers do not participate while coviewing, we might be able to use that knowledge to encourage more participation.

More research is needed to get clearer information about the roles that content and formal features have on maternal behaviors. In this study probable rather than definitive relationships between maternal participation or scaffolding and program characteristics were identified. Also in this study, the content, formal features, and maternal behavior were recorded as being present if they had occurred at least once during the program segment. A limitation of this design choice was that the maternal behaviors and program characteristics that were deemed as “probably related” could have occurred at different times during the program segment. Clearer relationships could come from a very different research design that tracked the content, formal features, and maternal behaviors moment by moment to determine which maternal behaviors and program characteristics were co-occurring.

The finding that maternal beliefs did not predict how much mothers participated or how much they scaffolded is puzzling. The maternal belief measures used in this study seemed to be the right measures and the hypotheses tested seemed like right hypotheses to test. It would be interesting to see whether these two maternal beliefs related to types of behaviors mothers did or some types of strategies mothers did. To do so, a larger sample of mothers and/or more observations would be required in order to have more mothers doing the behaviors and strategies. As described above, a study could be developed in which there were multiple observations of mothers coviewing an educational series. In this way, mothers would have familiarity with the program and might participate and scaffold more overall.

Finally, more research is needed to better understand why mothers seemed to favor some scaffolding strategies over others, particularly the ones that were more characteristic of what
teachers use (i.e., instructing and providing hints). An interesting next study would be to replicate this study with mothers who have been or are early elementary educators (i.e., Kindergarten – 2nd grade teachers) to see how people who are trained and experienced as teachers might frame what they do. This could reveal whether the mothers in the present study did not know what to do or whether even mothers trained as teachers revert to the mothering role and participate the way mothers in the present study did.

**Conclusion**

The grounds for doing this study was that most of the research informing our understanding of how parents have covediewed was done in the 1970s and 1980s; mostly relied on self-reports; and did not conceptualize what parents did as scaffolding. Mothers in this study seemed to participate in similar ways that parents have mediated their children’s viewing in the past. With that said, we do not have the quantitative data of how much parents participated in past studies to determine whether mothers in this study participated more, less, or the same. For the most part, most of what mothers did centered around the program content. This is very much how parents in past studies have participated while watching television with their children. Also, mothers watched the program from beginning to end, without using the affordances of the DVD to pause or review. This way of watching is similar to how parents in the 1970s and 1980s watched television, which could be watched only at the scheduled broadcast time. One can only hope that outside of this research study mothers utilize DVDs and television in these ways so that parents can replay parts of the program to focus on an important item and/or discuss in more detail something from the program.

Some might argue that this study, which examined children and mothers watching a DVD, involves a very narrow and perhaps diminishing slice of the media environment in which
children now live. On the contrary, the information from this study certainly can help parents help their children benefit from our current technology climate. In fact, at the present time there are current production groups (e.g., The Joan Ganz Cooney Center at Sesame Workshop and LIFE Center) that are examining how adults and expert others interact with children while they are using technology. Moreover, the program everyone watched for this study was a magazine format, which is characteristic of much of children’s programming today. Furthermore, while a program like Showy Show is being presented to a child it matters little whether it is made available via DVD, cable, over-the-air television, Digital Video Recording (DVR), streaming video, or any other delivery system.

Did conceptualizing some of what mothers did as scaffolding enrich our understanding of parental mediation while children watch television? The answer to this is yes. Maternal scaffolding predicted children’s learning of some target vocabulary and sight words. We also know that when mothers scaffolded they mostly gave feedback, explained, questioned, and modeled. They seldom instructed or provided hints. With this knowledge, we can imagine how much more children would have learned had mothers instructed and provided hints as much as they used the other strategies. We must remember that scaffolding is a dynamic process and this study unveils some of how parents scaffold.

The findings of this study suggest that how mothers participate and scaffold, particularly the behaviors that are just in time when there is learning content, can help children learn from educational television. The findings also suggest that the program, through its content and how it delivers the content, might relate how parents participate and whether they scaffold. It also suggests that parental beliefs about school readiness and educational television as a tool to learn might not predict how much they participate or how much they scaffold, which is contrary to the
study expectations. Most important, though, this study reinforces the fact that parents are essential teachers for their children.
APPENDIX A

Program Characteristics

Types of Content
1. Vocabulary (clipboard, cubby, preschool, happy, lunchbox, share, teacher) and sight words (happy, lunchbox, share)
2. Reading
   a. Sentences at the bottom of the page during the songs.
   b. Titles of a song or segment
3. Prosocial (e.g., feelings, behaviors, and sharing)
4. Story (e.g., about putting on a show)
5. Other

c. Color change
d. Text moves (left, right, up, down)
e. Size (small, medium, large)
f. Character looking at text
g. Character pointing at text

5. Live Action or animation
6. Characters on screen
   a. Gender
   b. Age
   c. Race/ethnicity
7. Visual Effects (backgrounds, flashes, other)

Audio
8. Sound Effects
   a. Laugh tracks
   b. Other (horns, sirens, etc.)
9. Talk (people talking)
   a. Gender
   b. Age
   c. Monologue/dialogue/colloquy
d. On-screen or Off-screen
10. Voiceover (narration; instruction to follow the lyrics or to sing; prompt to answer; other)
11. Music or Song
   a. Pace (none, slow, medium, fast)
12. Asking child to participate

Audio-Visual
13. Humor
14. Coordination of visual and audio
15. Pace & action (slow, medium, fast)

Formal Features

Visual
1. Camera
   a. Tighten (zoom in and goes from wide to tight shot)
   b. Widen (zoom out and goes from tight to wide shot)
   c. Pan (left to right movement of the camera)
   d. Tilt (up and down movement of the camera)
2. Transitions (or changes) to following segment or within segment
   a. Wipes (screen is wiped)
   b. Fades (image slowly appears)
   c. Dissolve (two images cross)
   d. Cuts (goes directly to next scene)
3. Other
4. Text
   a. Location on screen (top, center, bottom, left, right)
   b. Flash
APPENDIX B

Child Pre- and Post-Assessment

Child ID#: ____________________________
Date: _________________________________

Circle: PRE  POST

For Pre say: “I want to ask you a few questions about some words and pictures. I really hope that you’ll help me and answer the questions. Skip to number 4.

For Post say: “I am going to ask you a few questions about the show you just watched. I’d like you to answer them the best you can. Let’s start.”

1. Did you like the show you just watched?
Circle: yes   no   other:______________

2. What was your favorite part of the show? ________________________________

3. Would you want to watch the show again?
Circle: yes   no   other:______________

For Post say: “Now I am going to show you pictures or words and I am going to ask you about them.”

4. Please point to the grapes.
5. What is this a picture of? (Researcher points to the cubbies.)

6. And please tell me what this is.

7. How is this child feeling?

8. And what is this a picture of?
9. And please tell me what this is.

10. What does this word say?

   lunchbox

11. And what does this word say?

   lollipop
12. Please point to the clipboard.

13. And please tell me what this woman’s job is.

14. What does this word say?

   happy

15. And what does this word say?

   honey
16. Please point to the purse.

17. And please tell me what this is a picture of.

18. Please point to the lunchbox.

19. What does this word say?

share
20. And what does this word say?

**ship**

21. Please point to the cow.

22. What is the girl in blue pants doing? (Researcher points to girl in blue pants.)

23. Please point to the word that says “share”.

| shell | shop | share |
24. And please point to the word that says “mad”.

| mad | man | mud |

25. Please point to the preschool.

26. And please point to the teacher.

27. Please point to the cubby.
28. Please point to the child who is happy.

29. Please point to the picture that has a child who is sharing.

30. Please point to the word “happy”.

| hilly | hungry | happy |

31. And please point to the word “no”.

| no    | on    | not   |
32. Please point to the word that says lunchbox.

| lunchbox | lipstick | lollipop |

33. Please point to the colored pencils.

34-35. Please read these cards, if you can. (Each sentence is written on a card.)

34. So if you’re shy just smile, it’s easy to do.

35. Now go and show what you know.
APPENDIX C

Descriptions of Target Items and Skills

<table>
<thead>
<tr>
<th>Type of Item or Skill</th>
<th>Item</th>
<th>How Presented in Program</th>
<th>$n$ Segments Present</th>
<th>Time Presented (sec)</th>
<th>Example in Program of Using Item or Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vocabulary</strong></td>
<td>clipboard</td>
<td>Showing item</td>
<td>7</td>
<td>253</td>
<td>Character holds a clipboard for the vocabulary clipboard.</td>
</tr>
<tr>
<td></td>
<td>cubby</td>
<td></td>
<td>2</td>
<td>136</td>
<td></td>
</tr>
<tr>
<td></td>
<td>happy</td>
<td></td>
<td>6</td>
<td>187</td>
<td></td>
</tr>
<tr>
<td></td>
<td>lunchbox</td>
<td></td>
<td>5</td>
<td>105</td>
<td></td>
</tr>
<tr>
<td></td>
<td>share</td>
<td></td>
<td>7</td>
<td>165</td>
<td></td>
</tr>
<tr>
<td></td>
<td>teacher</td>
<td></td>
<td>1</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td><strong>Vocabulary</strong></td>
<td>clipboard</td>
<td>Referring to item by saying the name of the item</td>
<td>3</td>
<td>107</td>
<td>Character says she can put her clipboard on the cubby.</td>
</tr>
<tr>
<td></td>
<td>cubby</td>
<td></td>
<td>2</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td></td>
<td>happy</td>
<td></td>
<td>5</td>
<td>204</td>
<td></td>
</tr>
<tr>
<td></td>
<td>lunchbox</td>
<td></td>
<td>8</td>
<td>275</td>
<td></td>
</tr>
<tr>
<td></td>
<td>preschool</td>
<td></td>
<td>8</td>
<td>287</td>
<td></td>
</tr>
<tr>
<td></td>
<td>share</td>
<td></td>
<td>4</td>
<td>223</td>
<td></td>
</tr>
<tr>
<td></td>
<td>teacher</td>
<td></td>
<td>3</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td><strong>Sight word</strong></td>
<td>happy</td>
<td>Showing the text</td>
<td>8</td>
<td>55</td>
<td>Text of lunchbox is on-screen.</td>
</tr>
<tr>
<td></td>
<td>lunchbox</td>
<td></td>
<td>7</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td></td>
<td>share</td>
<td></td>
<td>7</td>
<td>61</td>
<td></td>
</tr>
<tr>
<td><strong>Sight word</strong></td>
<td>happy</td>
<td>Referring to text by saying what the text says</td>
<td>4</td>
<td>34</td>
<td>Lunchbox is said by a voiceover with text of lunchbox on-screen.</td>
</tr>
<tr>
<td></td>
<td>lunchbox</td>
<td></td>
<td>3</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td></td>
<td>share</td>
<td></td>
<td>4</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td><strong>Reading</strong></td>
<td>sentence 1</td>
<td>Presenting phrases or sentences</td>
<td>11</td>
<td>226</td>
<td>Lyrics of song are at the bottom of the screen, with a bouncing star above the spoken word, which also changes color for tracking.</td>
</tr>
</tbody>
</table>
## APPENDIX D

**Survey for Mother**

**Part 1**

**Directions to mother:** Please read the directions for each part and mark whether your child can do the following item.

### Section A.

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a lunchbox</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a clipboard</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a staple remover</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a child who is tired</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a child who is reading a book</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a ladybug</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>an apple</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a teacher</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Grapes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>an umbrella</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a cubby</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a shoebox</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a preschool</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a child who is sharing</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a goat</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>an easel</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a park</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a mailbox</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a child who is happy</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a guitar player</td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>
### Section B.

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a child who is happy</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a playground</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a firefighter</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a child who is reading</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a lunchbox</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a teacher</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a stapler</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a clipboard</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Lipstick</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a preschool</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a purse</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a ladybug</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a cubby</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a child who is angry</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a banana</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a mailbox</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a chair</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a child who is sharing</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a strawberry</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>a cow</td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>
### Section C.

<table>
<thead>
<tr>
<th>Word</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Happy</td>
<td></td>
<td>yes</td>
</tr>
<tr>
<td>Hilly</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>lollipop</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>No</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Sad</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Lunchbox</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Shell</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Ship</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Up</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Share</td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>

### Section D.

<table>
<thead>
<tr>
<th>Word</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share</td>
<td></td>
<td>yes</td>
</tr>
<tr>
<td>On</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Lunchbox</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Happy</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Lipstick</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Ship</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Mailbox</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Mad</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Run</td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>

### Section E.

<table>
<thead>
<tr>
<th>Prompt</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would your child be able to read this aloud?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>So if you’re shy just smile, it’s easy to do.</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Now go and show what you know.</td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>
Part 2
Section A.

Directions to mother: Please indicate how important, if at all, you think each of the following is for a child to have experienced and know about before he or she enters Kindergarten. Please indicate the appropriate column for each item.

<table>
<thead>
<tr>
<th>How important is...</th>
<th>Very important</th>
<th>Somewhat important</th>
<th>Not too important</th>
<th>Not at all important</th>
</tr>
</thead>
<tbody>
<tr>
<td>having books read to him or her?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>having lots of books in the home?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>learning how to read?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>understanding what is read to him or her?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>going to the library?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>playing with media or computer games having to do with letters and sounds?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>playing with media or computer games having to do with reading?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>playing with toys having to do with letters and sounds?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>playing with toys having to do with reading?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>using workbooks having to do with letters and sounds?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>using workbooks having to do with reading?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>knowing the names of lower-case letters?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>knowing the names of upper-case letters?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>knowing the sounds of letters?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>recognizing some printed words?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>knowing the meanings of lots of words?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>knowing how to print some letters?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>knowing how to print most of the letters?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>knowing how to print all of the letters?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>knowing how to tell a story?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>having adults talk to him or her?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>having adults ask children questions?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>understanding how to use gestures, body language, and tone of voice to express himself or herself?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>answering appropriately questions asked by another person?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>speaking in a way that others can understand what is being said?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section B.
**Directions to mother:** Please indicate how much you agree or disagree with each of the following statements about what children can learn from television. (Television refers to cable, VHS, DVD, and television programming.)

<table>
<thead>
<tr>
<th>From high-quality educational television, preschool age can learn ...</th>
<th>Absolutely agree</th>
<th>Agree somewhat</th>
<th>Disagree a little</th>
<th>Disagree a lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>to play well with others</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the names of upper-case letters</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the names of lower-case letters</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the sounds of upper-case letters</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the sounds of lower-case letters</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to read</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>important reading skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>critical thinking skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>new vocabulary</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX E

Description of Types of Behaviors

<table>
<thead>
<tr>
<th>Type of Behavior</th>
<th>Description</th>
<th>Example(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Program Related</td>
<td>Actions/behaviors that tend to child or other child that do not relate to program content</td>
<td>Mother adjusts volume; “Can you hear it?”; Talk about microphone; Mother leaves the area where child is watching the program; Mother whispers to sibling.</td>
</tr>
<tr>
<td>Prompt (Want to do it?)</td>
<td>Mother asks or tells child to participate (e.g., to sing, do moves, or answer questions about the program); About child's willingness to do it</td>
<td>“Do you want to do it?”; “Get up, so you can do the moves.”</td>
</tr>
<tr>
<td>Prompt (Can you do it?)</td>
<td>Mother checks whether child can do something (e.g., a move, say something, read, or sing). About child's ability to do it.</td>
<td>“Can you sound out that word?”; “Can you read the bottom one?”</td>
</tr>
<tr>
<td>Helps Child to Do Action</td>
<td>Mother shows child how to do a “move” or action</td>
<td>Mother helps child do moves physically</td>
</tr>
<tr>
<td>Directs Attention</td>
<td>Mother's behavior is aimed at whether child is paying attention to the program or at getting child's attention</td>
<td>“Are you watching the show?”; “Shall we watch the show?”</td>
</tr>
<tr>
<td>Interacts with Program</td>
<td>Mother sings, does movements, reads, and displays affective reaction(s) to program. Does not include spelling words.</td>
<td>Mother says “Everyone Will Love You” (from screen); Starts to sing, reading the text.</td>
</tr>
<tr>
<td>Questions about Program</td>
<td>Asks questions about the content in the program</td>
<td>“What is that?”; “How does he feel when he's jumping up and down?”</td>
</tr>
<tr>
<td>Asks Child to Explain Thinking</td>
<td>Mother asks child to expand on reasoning</td>
<td>“How do you know?”; “How do you know he’s happy?”</td>
</tr>
<tr>
<td>Questions by Relating Concepts to Child's Life</td>
<td>With questions, Mother relates the program’s content to the child’s routine; makes reference to what child already knows</td>
<td>“What do you do to play together?”; “What's your teacher's name?”</td>
</tr>
<tr>
<td>Explains by Relating Concepts to Child's Life</td>
<td>With explanations Mother relates the program's content to the child's routine. The program can be a conversation starter.</td>
<td>“Remember, you’re going to get a new teacher on Monday.”; “As soon as you start to read, you’ll be able to read it.”</td>
</tr>
<tr>
<td>Type of Behavior</td>
<td>Description</td>
<td>Example(s)</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Explains or Comments About the Program | Explains: Provides details about the program or program's content (i.e., what is seen or heard) by stating what is happening, how a character is feeling, or how letters are spelled or sounded out. Includes labeling of objects and making comments about program content. | “There are two words checked, lunchbox and share.”;
|                                        | Mother: “That's a nice park.”                                                                                                                                                                                |                                                                                               |
| Preparing and Summarizing              | Prepares child before content is presented and asks questions after about the program/content. Includes summary statements                                                                                     | “You have one more word to learn”; “Now we learned lunchbox and share”                         |
| Feedback                               | Uses conversation supports and gives feedback to child; to keeps a conversation going or responds to child                                                                                                 | “You're right.”; “Hmmm”                                                                        |
| Corrects or Adds                       | Makes a correction to child's response or provides correction or more information                                                                                                                           | Child: Playing
|                                        | Mother: But, they're doing it together.
|                                        | Child: They're sharing;
|                                        | Child: hungry Mother: happy.                                                                                                                   |                                                                                               |
| Questions About Liking the Program     | Asks child whether he/she liked program or part of program                                                                                                                                                | “Is that your favorite part?”; “Was it good?”                                                  |
### APPENDIX F

**Descriptions of Scaffolding Strategies**

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeding back</td>
<td>Providing information about how child is performing; Shapes where learner is going; Not just motivational.</td>
<td>“That’s right”; “Take a bow for your performance. You did a good job.”</td>
</tr>
<tr>
<td>Giving of hints</td>
<td>Giving clues or suggestions so child can go forward. Does not give the whole answer or detailed instructions.</td>
<td>“Ready for the lunchbox? Yeah? Share move? Happy move?”; “Starts with an h.”</td>
</tr>
<tr>
<td>Instructing</td>
<td>Telling child/learner how to do something and why. Not an instruction or prompt to try something (e.g., to sing or to do a move)</td>
<td>“h-a-p-p-y” [Mother says each letter]; “See when the star goes over the word, it spells what's being said.”</td>
</tr>
<tr>
<td>Explaining</td>
<td>Giving more detailed information and clarification. To be scaffolding, does not provide a shortcut to get the right answer (e.g., “Look at what he is carrying” when the text of lunchbox is on-screen is not scaffolding)</td>
<td>“They’re doing a show”; “There’s one more song.”</td>
</tr>
<tr>
<td>Modeling</td>
<td>Offering behavior for imitation (e.g., demonstration of particular skills); Mother participates (e.g., reads words or answers questions)</td>
<td>Mother sings to words on screen; Happy [Mother says word that is presented on the screen]</td>
</tr>
<tr>
<td>Questioning</td>
<td>Asking that requires an active linguistic and cognitive answer; To be scaffolding, does not provide a shortcut to get the right answer (e.g., “What is he carrying?” when the text of lunchbox is on-screen is not scaffolding)</td>
<td>“What does it start with?”; “What do they need to do?”; “Which word is the last one?”</td>
</tr>
<tr>
<td>Checking in</td>
<td>Asking that checks level of child; Directing child’s attention</td>
<td>Did you see the words?”; “Do you like the Showy Show?”</td>
</tr>
</tbody>
</table>

*Note.* For the strategy to be scaffolding, the strategy needed to be used in during a scaffolding opportunity.
APPENDIX G

Observation Follow-Up Protocol

ID#: ______________________
Date: ______________________

Researcher will audiotape items 5 through 7.

Start time of observation: _______  End time of observation: _______

Say: Now, I’d like to ask you some questions about the show. It should take about 10 minutes. Can we start now? (If yes, proceed. If no, schedule for a phone conversation later that day.)

1. Did you like the show?  Circle: yes no
2. Do you think your child liked the show?  Circle: yes no
3. How many times has your child watched this show before today?  Circle: 0 1 2 3 4 other: __
4. How many times have you watched this show before today  Circle: 0 1 2 3 4 other: __

Say: Now I am going to audiotape your answers to the next set of questions. Is that OK? (If “yes,” turn on audiotape and proceed with questions. If “no,” proceed with questions but do not audiotape.)

5. How does this show compare to other shows your child watches?

6. How does what you and your child did today compare to what you usually do when your child watches educational programs on TV, cable, DVDs, or tapes?

Say: Now I am going to ask about why you did some of the things you did during the show.
7. First, I noticed that you (Researcher describes a behavior marked from the field notes that needs follow-up explanation.) Could you please explain why you did that? (Record each behavior and explanation in the chart below.) And? (Researcher describes additional behaviors.)

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Mother’s explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX H

Recruitment Flyer

Dear Mother,

I am a doctoral student at the Graduate School of Education and Information Studies at UCLA. I am looking for participants for my dissertation study, which is being advised by Professor Aimée Dorr. Please read over this flyer to see if you and your child would like to participate in my dissertation study. My dissertation study looks at how mothers support their children while they watch educational programs on television, DVDs, or videotapes at home. In order to participate in this study the participating mother should be the child’s mother (female guardian). The participants must agree to be videotaped in order to participate in the research.

Your child should:
1. Be 3- to 5-years-old and attending or have attended preschool, daycare, or childcare at the time of the study
2. Watch television, DVDs, or videotapes on a regular basis, at least five times a week for at least one-hour a day.
3. Be from an English-speaking family
4. Watch television, DVDs, or videotapes when his or her mother or female guardian is at home on a regular basis.
5. Have an operable DVD-player that is connected to the television set or computer.
6. Be part of a family that is middle-class.

If you agree to participate, I will visit your home two times. The first visit will last approximately 30 minutes. The second visit will last approximately 30 to 60 minutes. The visits will be scheduled at a convenient time for you. The first visit is to meet your child, answer any questions you might have; plan the second visit when I will take notes, videotape, and audiotape your child watching television; ask your child questions about some of the words in the program, which should take about 10 minutes to complete; and ask you questions about television, learning, activities for your child, and what your child knows about some of the words from the program he/she will watch, which should take about 10 minutes to complete. For the second visit, your child will watch an educational DVD called Showy Show: The Preschool Show that I will give you to keep at the first visit. You will be requested to watch this show without your child before I come back for the second visit. Your child should not watch the show before the second visit. In addition to the visits, you will be asked a few questions after Showy Show, which should take about 5 to 10 minutes. After your child watches Showy Show, your child will be asked a few questions about the show, which should take about 10 minutes. There will be no monetary payment for participation in this study. The mother/female guardian and child, as well as any other individuals who are present, will be videotaped during the second visit. All materials used in this study will be kept confidential. If you are interested in participating in this study, please contact Nina Neulight at ninaweb@ucla.edu or (310) 420-4577.

Thank you,

Nina Neulight
APPENDIX I

Screening Consent Script

If person calls me: Thank you for calling me about participating in my dissertation study called Maternal Support of Preschoolers’ Learning While Educational Television is on at Home.

If I call participant: I am calling you because I was referred by [person who referred the person being called] as someone who might participate in my dissertation study called Maternal Support of Preschoolers’ Learning

I would like to ask you a few questions in order to determine whether you may be eligible for the research. Before I begin the screening I would like to tell you a little bit about the research. The study looks at how and why a mother helps her child learn from an educational television program.

Would you like to continue with the screening? The screening will take about 5 minutes. I will ask you about whether you and your child meet the eligibility criteria for the study. You do not have to answer any questions you do not wish to answer or are uncomfortable answering, and you may stop at any time. Your participation in the screening is voluntary.

Your answers will be confidential. No one will know your answers except for the research team. If you and your child do not qualify for the study or do not choose to participate in the study even if you qualify, the answers will be destroyed. Alternately, if you and your child qualify for the research, decide to participate, and signs the research informed consent form, the answers will be kept with the research record.

Would you like to continue with the screening?
[If no, thank the person and hang-up]

[If yes, continue with the screening]

Please do not answer the following 7 questions individually. When I am done asking them, you may say “yes” if all of the questions in the group apply or you may say “no” if not all of the questions in the group apply.

Is your child 3-, 4-, or 5-years-old?
Has your child attended or is attending preschool, daycare, or childcare?
Does your child watch TV, DVDs, or videotapes on a regular basis (at least 1 hour a day, 5 days a week) when you are in the vicinity of the child at home?
Is your child from an English-speaking family?
Do you have an operable DVD player at home?
Is your child part of a middle-class family?
If you and your child qualify for this study, do you agree to have you and your child videotaped?
Thank you for answering the screening questions. [If the person says “yes,” the person is eligible to participate in the study. If the person says “no,” the person is not eligible to participate because he or she does not meet the criteria for this study and terminate the call.]

If you agree to participate, I will visit your home two times. The first visit will last approximately 30 minutes. The second visit will last approximately 30 to 60 minutes. The visits will be scheduled at a convenient time for you. The first visit is to meet your child, answer any questions you might have; plan the second visit when I will take notes, videotape, and audiotape your child watching television; ask your child questions about some of the words in the program, which should take about 10 minutes to complete; and ask you questions about television, learning, activities for your child, and what your child knows about some of the words from the program he/she will watch, which should take about 10 minutes to complete. For the second visit, your child will watch an educational DVD called Showy Show: The Preschool Show that I will give you to keep at the first visit. You will be requested to watch this show without your child before I come back for the second visit. Your child should not watch the show before the second visit. In addition to the visits, you will be asked a few questions after Showy Show, which should take about 5 to 10 minutes and will be audiotaped. After your child watches Showy Show, your child will be asked a few questions about the show, which should take about 10 minutes. There will be no monetary payment for participation in this study. The mother/female guardian and child, as well as any other individuals who are present, will be videotaped during the second visit. All materials used in this study will be kept confidential.

Do you have any questions about the screening or the research? I am going to give you a couple of telephone numbers to call if you have any questions later. Do you have a pen? If you have questions about the research screening, you may call Aimée Dorr at (310) 825-8308 and she will answer your questions.

If you have questions about your rights as a research subject or if you wish to voice any problems or concerns you may have about the study to someone other than the researchers, please call the UCLA Office for Protection of Research Subjects at (310) 825-7122.

Thank you again for your willingness to answer my questions.
APPENDIX J

Sample Consent Form

CONSENT FOR PARENT AND PARENTAL PERMISSION FOR MINOR TO PARTICIPATE IN RESEARCH

*Maternal Support of Preschoolers’ Learning While Educational Television is on at Home.*

You and your child are asked to participate in a research study conducted by Nina Neulight, M.A. (Principal Investigator) and Aimée Dorr, Ph.D. (Faculty Sponsor), from the Graduate School of Education and Information Studies, at the University of California, Los Angeles. You and your child were selected as possible participants in this study because you are the child’s mother or female guardian and your child is 3-, 4-, or 5-years-old; has attended or is attending preschool, daycare, or childcare; watches TV, DVDs, or videotapes on a regular basis (at least 1 hour a day, 5 days a week) when you are in the vicinity of the child at home; is from an English-speaking family; has an operable DVD player; and is part of a middle-class family. Your participation in this research study is voluntary.

Why is this study being done?
This study is being conducted in order to see how and why parents help children learn from educational television programs at home.

What will happen if my child and I take part in this research study?
If you and your child volunteer to participate in this study, we will ask:

(1) you and your child to have the researcher visit you at home two times. The first visit is for the researcher to plan the following observations (e.g., where to take notes); give you a survey about watching television and what your child knows about the content covered in the show he/she will watch; and ask your child about skills covered in *Showy Show*. The second visit is the observation of your child watching *Showy Show*.

(2) your child to watch an educational television program at home. The researcher will give you the educational program, a DVD for preschoolers called *Showy Show: The Preschool Show*. Immediately after your child watches *Showy Show*, the researcher will ask your child questions about the content covered in the program.

(3) you to be in the vicinity while your child watches *Showy Show*. After *Showy Show*, the researcher will have a 10 minute interview with you and the researcher will ask your child questions about the content covered, which will take approximately 10 minutes.

(4) the mother/female guardian, child, and other individuals present will be audiotaped and videotaped during the second visit.

(5) participants may not continue to participate in the research if they do not agree to be audiotaped and videotaped.
How long will my child and I be in the research study?
Participation in the study will take a total of about three hours over a period of two days.

Are there any potential risks or discomforts that my child and I can expect from this study?
There are no anticipated risks or discomforts.

Are there any potential benefits if I and my child participate?
This study will positively impact your child in that your child can learn new vocabulary.

Will my child and I receive any payment if we participate in this study?
You and your child will receive no payment for your participation. You will be given a copy of Showy Show, an educational DVD program for preschool-age children.

Will information about me and my child about our participation be kept confidential?
Any information that is obtained in connection with this study and that can identify you and your child will remain confidential. It will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of assigning an identification number to all materials. The primary researcher will keep data in a locked computer file. If you agree that the principal investigator keep all data related to this study, all identifiable information will be removed. You have the right to review the video and audio recordings and erase them if desired.

Withdrawal of participation by the investigator
The investigator may withdraw you from participating in this research if circumstances arise which warrant doing so. If your child does not watch the television programs for at least 10 minutes per observation, you may have to drop out, even if you would like to continue. The investigator will make the decision and let you know if it is not possible for you to continue.

What are my rights if my child and I take part in this study?
You may withdraw your consent at any time and discontinue participation without penalty or loss of benefits to which you were otherwise entitled.

You can choose whether to be in this study or not, and whether or not to allow your child to be in this study. If you agree to participate and to allow your child to be in this study, you may withdraw your consent at any time without consequences of any kind. You are not waiving any legal rights if you choose to be in this research study.

Who can answer question my child and I might have about this study?
In the event of a research related injury, please immediately contact one of the researchers listed below. If you have any questions, comments or concerns about the research, you can talk to the researcher. Please contact Nina Neulight at (310) 420-4577 or ninaweb@ucla.edu and Aimée Dorr, her faculty advisor, at (310) 825-8308 or dorr@gseis.ucla.edu.

If you wish to ask questions about your rights as a research participant or if you wish to voice any problems or concerns you may have about the study to someone other than the researchers,
please call the Office for Protection of Research Subjects at (310) 825-7122 or write to Office for Protection of Research Subjects, UCLA, 11000 Kinross Avenue, Suite 102, Box 951694, Los Angeles, CA 90095-1694.

Please check the appropriate box below and initial:

_____ I agree to have my and my child’s data stored for future use by the Principal Investigator and/or research team.
_____ I do not want my and my child’s data stored for future use by the Principal Investigator and/or research team.

SIGNATURE OF PARENT OR LEGAL GUARDIAN

I understand the procedures described above. My questions have been answered to my satisfaction, and I agree to participate and to allow my child to participate in this study. I have been given a copy of this form.

Name of Child ___________________________ Date ___________________________

Name of Parent or Legal Guardian ___________________________

Signature of Parent or Legal Guardian ___________________________

SIGNATURE OF PERSON OBTAINING CONSENT

In my judgment the participant is voluntarily and knowingly giving informed consent and parental permission and possesses the legal capacity to give informed consent to participate in this research study.

Name of Person Obtaining Consent ___________________________ Date ___________________________

Signature of Person Obtaining Consent ___________________________
APPENDIX K

Tables

Table 1

Scores of Pre- and Post-Assessments

<table>
<thead>
<tr>
<th>Item or skill measured</th>
<th>Assessment procedures</th>
<th>Item</th>
<th>Total of all scores at pre-assessment</th>
<th>Total of all scores at post-assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocabulary</td>
<td>Saying what the picture was when asked, “What is this?”</td>
<td>clipboard</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>cubby</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>happy</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lunchbox</td>
<td>15</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td></td>
<td>share</td>
<td>4</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>teacher</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>Identification of the picture when asked to point to that picture with the word spoken</td>
<td>clipboard</td>
<td>14</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>cubby</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>happy</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lunchbox</td>
<td>30</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td></td>
<td>preschool</td>
<td>19</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>share</td>
<td>17</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>teacher</td>
<td>19</td>
<td>25</td>
</tr>
<tr>
<td>Sight word</td>
<td>Saying what the word was when the word was spelled</td>
<td>happy</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lunchbox</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>share</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Sight word</td>
<td>Identification of the word in text format when asked to point to the word with the word spoken</td>
<td>happy</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lunchbox</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>share</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Reading</td>
<td>Presented a sentence and asked to read it</td>
<td>sentence 1</td>
<td>12</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>sentence 2</td>
<td>14</td>
<td>26</td>
</tr>
</tbody>
</table>

Note. The vocabulary and sight words were assessed using a 2-point scale so that the number of total scores is also the number of children answering correct. The reading items were assessed using a 5-point scale.
### Table 2

**Reliability Analysis Results for Measures of Children’s Knowledge**

<table>
<thead>
<tr>
<th>Type of item</th>
<th>What the items measured</th>
<th>( \alpha ) of pre-assessment items</th>
<th>( \alpha ) of post-assessment items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocabulary</td>
<td>Ability to recognize image when asked to point to it</td>
<td>0.24</td>
<td>0.22</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>Ability to express image when asked, &quot;What is this?&quot;</td>
<td>-0.11</td>
<td>0.22</td>
</tr>
<tr>
<td>Sight word</td>
<td>Ability to recognize word when written in text and asked to point to the word</td>
<td>0.11</td>
<td>0.32</td>
</tr>
<tr>
<td>Sight word</td>
<td>Ability to express word when written in text when asked, &quot;What does this say?&quot;</td>
<td>0.00</td>
<td>0.66</td>
</tr>
<tr>
<td>Sentence</td>
<td>Ability to demonstrate pre-reading and reading skills (i.e., identifying, tracking, or reading multiple words) when asked to read</td>
<td>0.88</td>
<td>0.79</td>
</tr>
</tbody>
</table>

### Table 3

**Reliability Analysis Results for Measures with Items that are Images Separate from Items that are Text**

<table>
<thead>
<tr>
<th>Type of item</th>
<th>What the items measured</th>
<th>All items or number of deletions</th>
<th>( \alpha ) of Pre-assessment items</th>
<th>( \alpha ) of post-assessment items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocabulary</td>
<td>Ability to recognize image when asked to point to it or to express the image when asked, &quot;What is this?&quot;</td>
<td>All items</td>
<td>0.34</td>
<td>0.43</td>
</tr>
<tr>
<td></td>
<td></td>
<td>With 1 deletion</td>
<td>0.42</td>
<td>0.36</td>
</tr>
<tr>
<td>Sight word</td>
<td>Ability to recognize text of word when asked to point to it or to express the word when asked, &quot;What does this say?&quot;</td>
<td>All items</td>
<td>0.19</td>
<td>0.43</td>
</tr>
<tr>
<td></td>
<td></td>
<td>With 1 deletion</td>
<td>0.38</td>
<td>0.51</td>
</tr>
<tr>
<td>Type of Items</td>
<td>What the items measured</td>
<td>All items or number of deletions</td>
<td>α of Pre-assessment items</td>
<td>α of post-assessment items</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>---------------------------------</td>
<td>---------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Vocabulary, sight words</td>
<td>Ability to recognize image or text when asked to point to the item</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>All items</td>
<td>-0.03</td>
<td>0.28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 deletions</td>
<td><strong>0.27</strong></td>
<td><strong>0.39</strong></td>
</tr>
<tr>
<td>Vocabulary, sight words</td>
<td>Ability to express item or word when shown image(s) or text and asked, “What is this?” or What does this say?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>All items</td>
<td><strong>0.24</strong></td>
<td><strong>0.38</strong></td>
</tr>
</tbody>
</table>

*Note. Bold-faced denotes highest Cronbach’s alpha achieved.*
REFERENCES


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Figure 5-1. Frequency each mother participated and the number of types of behaviors she did while co-viewing.

Note. The horizontal line indicates the median number of behaviors a mother did. The number in the bar indicates the number of types of behaviors a mother did.
Figure 5-2. Mean with upper and lower bounds of standard deviation a mother did each type of behavior while co-viewing.

Note. The three colors refer to whether the type of behavior was grouped as most frequent, medium frequent, or infrequent in terms of the number of times mothers did the type of behavior.
Figure 5-3. Number of mothers who did each type of behavior at various ranges.

Note. The types of behaviors are arranged, left to right, from highest to lowest mean of occurrence and organized in the three groups as Figure 5-2. The dashed line indicates number of mothers participating in the study (n = 31).
Figure 5-4. Mean with upper and lower bounds of standard deviation of mothers and children starting and doing behaviors within the program segments.
Figure 5-5. Average number of behaviors and scaffolding a mother did during the entire program and when there were scaffolding opportunities.
Figure 5-6. The number of times each mother scaffolded.
Note. The horizontal line indicates the median number of times a mother scaffolded.
Figure 5-7. Mean with upper and lower bounds of standard deviation a mother scaffolded using each strategy while co-viewing.
Figure 5-8. Number of mothers who used each strategy to scaffold and times mothers used that strategy to scaffold.

Note. The strategies are arranged, left to right, from highest to lowest mean of occurrence. The dashed line indicates number of mothers participating in the study (n = 31).
Figure 6-1. Frequency of the types of content tracked in the program.
*Note.* Variables within the threshold lines were included in analyses.
Figure 6-2. Frequency of the visual formal features tracked in the program.  
Note. Variables within the threshold lines were included in analyses.
Figure 6-3. Frequency of the audio formal features tracked in the program.  
Note. Variables within the threshold lines were included in analyses.
Figure 6-4. Frequency of the audio-visual formal features tracked in the program. 
Note. Variables within the threshold lines were included in analyses. There were no segments when the pace and action was fast.
Figure 6-5. Frequency of the number of segments at least one mother did each type of behavior or scaffolded at least once.

Note. Variables within the threshold lines were included in analyses.
Figure 6-6. Probable relationships between behavior type and content type.
Figure 6-7. Probable relationships between behavior type and visual formal feature.
Figure 6-8. Probable relationships between behavior type and audio formal feature.
Figure 6-9. Probable relationships between behavior type and audio-visual formal feature.

Note. No pair was deemed related.
Figure 6-10. Probable relationships between scaffolding and content type or formal feature
Figure 6-11. Probable relationships between packages of behavior type and formal features.
Table 4-1

Pre- and Post-Assessment Measures Used in Final Analyses

<table>
<thead>
<tr>
<th>Measure</th>
<th>Items</th>
<th>Pre-assessment</th>
<th>Post-assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocabulary and sight</td>
<td>14</td>
<td>5.71</td>
<td>7.94</td>
</tr>
<tr>
<td>word knowledge</td>
<td></td>
<td>1.75</td>
<td>2.28</td>
</tr>
<tr>
<td>Reading knowledge</td>
<td>2</td>
<td>0.58</td>
<td>1.19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.48</td>
<td>1.99</td>
</tr>
</tbody>
</table>

*Note.* The items in the vocabulary and sight word measure were on a 2-point scale (i.e., 0 and 1) and the items in the reading measure were on a 5-point scale (i.e., 0 to 4).

Table 4-2

Schedule of Contacts per Mother-Child Dyad

<table>
<thead>
<tr>
<th>Reason for contact</th>
<th>Time spent at each dyad’s home (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recruitment and sign-up</td>
<td>NA</td>
</tr>
<tr>
<td>Home visit 1</td>
<td>0.25 – 0.50</td>
</tr>
<tr>
<td>Home visit 2</td>
<td>0.75 – 1.50</td>
</tr>
<tr>
<td>[Follow-up contact, when required]</td>
<td>[.5]</td>
</tr>
<tr>
<td>Total time</td>
<td>1.00 – 2.5</td>
</tr>
</tbody>
</table>

Table 5-1

Number of Segments that Mothers Participate

<table>
<thead>
<tr>
<th>n segments a mother did not participate</th>
<th>Mdn</th>
<th>M</th>
<th>Mode</th>
<th>Min</th>
<th>Max</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>n segments a mother did only 1 behavior</td>
<td>46.50</td>
<td>47.97</td>
<td>59</td>
<td>32</td>
<td>63</td>
<td>8.33</td>
</tr>
<tr>
<td>n segments a mother did more than 1 behavior</td>
<td>10.50</td>
<td>10.63</td>
<td>10</td>
<td>3</td>
<td>19</td>
<td>3.28</td>
</tr>
<tr>
<td></td>
<td>11.50</td>
<td>11.44</td>
<td>4</td>
<td>1</td>
<td>28</td>
<td>6.90</td>
</tr>
</tbody>
</table>

*Note.* There were 70 segments in the program, all worthy of participation.
Table 6-1

Frequency of Program Characteristics and Behaviors by One Mother

<table>
<thead>
<tr>
<th>Segment</th>
<th>Visual feature</th>
<th>Audio feature</th>
<th>Audiovisual feature</th>
<th>Types of content</th>
<th>Behaviors (n types)</th>
<th>Scaffolding (n strategies)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3 (2)</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>7</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2 (1)</td>
<td>2 (2)</td>
</tr>
</tbody>
</table>

Table 6-2

Number of Pairs at Four Concordance Rates

<table>
<thead>
<tr>
<th>Variable associated with mother</th>
<th>Variable associated with program</th>
<th>Pairs examined</th>
<th>.50 ≤</th>
<th>.60 ≤</th>
<th>.65 ≤</th>
<th>.75 ≤</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual formal features</td>
<td>117</td>
<td>83</td>
<td>47</td>
<td>21</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Audio formal features</td>
<td>108</td>
<td>78</td>
<td>40</td>
<td>15</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Audio-visual formal features</td>
<td>27</td>
<td>8</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Type of content</td>
<td>18</td>
<td>9</td>
<td>8</td>
<td>8</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

| Scaffolding                     |                                  |                |       |       |       |       |
| Visual formal features          | 13                               | 9              | 7     | 3     | 2     |       |
| Audio formal features           | 12                               | 10             | 5     | 3     | 0     |       |
| Audio-visual formal features    | 3                                | 1              | 1     | 0     | 0     |       |
| Type of content                 | 2                                | 1              | 1     | 1     | 1     |       |
Table 6-3

_Correlations Between the Frequency Mothers did the Type of Behavior or Scaffolded and Duration of Segment_  

<table>
<thead>
<tr>
<th>Type of behavior or scaffolding</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explains (Relating content to child)</td>
<td>.49*</td>
</tr>
<tr>
<td>Questions (Relating content to child)</td>
<td>.39*</td>
</tr>
<tr>
<td>Interacts (With program)</td>
<td>.33*</td>
</tr>
<tr>
<td>Explains (Program)</td>
<td>.30*</td>
</tr>
<tr>
<td>Feedback</td>
<td>.28*</td>
</tr>
<tr>
<td>Prompt (Can you do it?)</td>
<td>.24*</td>
</tr>
<tr>
<td>Directs attention</td>
<td>.23*</td>
</tr>
<tr>
<td>Prompt (*Want to do it?)</td>
<td>.23*</td>
</tr>
<tr>
<td>Questions (Program)</td>
<td>0.07</td>
</tr>
<tr>
<td>Scaffolding</td>
<td>-0.09</td>
</tr>
</tbody>
</table>

*p < .05, one-tailed.*
Table 6-4

Summary of Pairs Meeting Criteria Used to Establish Probable Relationships

<table>
<thead>
<tr>
<th>Variable associated with mother</th>
<th>Variable associated with program</th>
<th>1. At least 65% concordance</th>
<th>2. Number of mothers during P &gt; A</th>
<th>3. Number of mothers who did behavior in P ≥ 2</th>
<th>4. Number of mothers in P rather than A ≥ 1</th>
<th>Number of relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual formal features</td>
<td></td>
<td>21</td>
<td>12</td>
<td>17</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Audio formal features</td>
<td></td>
<td>15</td>
<td>13</td>
<td>14</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Audio-visual formal features</td>
<td></td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Type of content</td>
<td></td>
<td>8</td>
<td>8</td>
<td>5</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total pairs</strong></td>
<td></td>
<td><strong>46</strong></td>
<td><strong>35</strong></td>
<td><strong>38</strong></td>
<td><strong>13</strong></td>
<td><strong>13</strong></td>
</tr>
<tr>
<td>Scaffolding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual formal features</td>
<td></td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Audio formal features</td>
<td></td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Audio visual formal features</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Type of content</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total pairs</strong></td>
<td></td>
<td><strong>7</strong></td>
<td><strong>6</strong></td>
<td><strong>7</strong></td>
<td><strong>4</strong></td>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>

*Note. A = Absence of program variable; P = Presence of program variable.*
Table 6-5

**Summary of Concordance for Packages Analyzed**

<table>
<thead>
<tr>
<th>Type of behavior</th>
<th>Package of program characteristics</th>
<th>$n$ variables in package</th>
<th>$n$ segments variables are concordant</th>
<th>Rate of concordance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explaining (Relating content to child) Feedback</td>
<td>Camera tightening with people in general&lt;br&gt;Vocabulary &amp; sight words with music in general</td>
<td>2</td>
<td>45</td>
<td>0.64</td>
</tr>
<tr>
<td>Prompting (Want to do it?)</td>
<td>Characters that are male and female &amp; characters that are of mixed/other race and ethnicity</td>
<td>2</td>
<td>41</td>
<td>0.59</td>
</tr>
<tr>
<td>Prompting (Want to do it?)</td>
<td>Characters that are male and female &amp; voices of male and female characters a</td>
<td>2</td>
<td>47</td>
<td>0.67</td>
</tr>
<tr>
<td>Prompting (Want to do it?)</td>
<td>Characters that are male and female &amp; medium pace music</td>
<td>2</td>
<td>44</td>
<td>0.63</td>
</tr>
<tr>
<td>Prompting (Want to do it?)</td>
<td>Characters that are of mixed/other race and ethnicity &amp; voices of male and female characters a</td>
<td>2</td>
<td>46</td>
<td>0.66</td>
</tr>
<tr>
<td>Prompting (Want to do it?)</td>
<td>Voices of male and female characters &amp; medium pace music a</td>
<td>2</td>
<td>46</td>
<td>0.66</td>
</tr>
<tr>
<td>Prompting (Want to do it?)</td>
<td>Characters that are male and female; characters that are of mixed/other race and ethnicity; &amp; female &amp; voices of male and female characters a</td>
<td>3</td>
<td>41</td>
<td>0.59</td>
</tr>
<tr>
<td>Prompting (Want to do it?)</td>
<td>Characters that are of mixed/other race and ethnicity; voices of male and female characters a</td>
<td>3</td>
<td>35</td>
<td>0.50</td>
</tr>
<tr>
<td>Questioning (Relating content to child)</td>
<td>Voices of people with music in general</td>
<td>2</td>
<td>25</td>
<td>0.36</td>
</tr>
<tr>
<td>Questioning (Relating content to child)</td>
<td>Vocabulary &amp; sight words with music in general</td>
<td>2</td>
<td>40</td>
<td>0.57</td>
</tr>
<tr>
<td>Questioning (Relating content to child)</td>
<td>Vocabulary &amp; sight word with voices of people in general</td>
<td>2</td>
<td>23</td>
<td>0.33</td>
</tr>
<tr>
<td>Questioning (Program)</td>
<td>Voices in general &amp; use of music in general</td>
<td>2</td>
<td>42</td>
<td>0.60</td>
</tr>
<tr>
<td>Questioning (Program)</td>
<td>Vocabulary &amp; sight words with use of music in general</td>
<td>2</td>
<td>40</td>
<td>0.57</td>
</tr>
<tr>
<td>Questioning (Program)</td>
<td>Vocabulary &amp; sight words with voices of people in general</td>
<td>2</td>
<td>44</td>
<td>0.63</td>
</tr>
<tr>
<td>Scaffolding</td>
<td>Vocabulary &amp; sight words with use of text in general</td>
<td>2</td>
<td>40</td>
<td>0.57</td>
</tr>
<tr>
<td>Scaffolding</td>
<td>Vocabulary &amp; sight words with voiceover</td>
<td>2</td>
<td>38</td>
<td>0.54</td>
</tr>
<tr>
<td>Scaffolding</td>
<td>Use of text in general with voiceover</td>
<td>2</td>
<td>41</td>
<td>0.59</td>
</tr>
</tbody>
</table>

*Note.* a The package and type of behavior had at least 65% concordance and underwent further analysis.
### Table 6-6

Concordance of Pairs and Packages That Have Probable Relationships

<table>
<thead>
<tr>
<th>Variables</th>
<th>Rate of concordance</th>
<th>n segments variables are concordant</th>
<th>n segments all variables present</th>
<th>n segments all variables absent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pairs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explains (Relating content to child) &amp; camera tightening</td>
<td>0.66</td>
<td>46</td>
<td>13</td>
<td>33</td>
</tr>
<tr>
<td>Explains (Relating content to child) &amp; people in general</td>
<td>0.67</td>
<td>47</td>
<td>20</td>
<td>27</td>
</tr>
<tr>
<td>Explains (Program) &amp; vocabulary and sight words</td>
<td>0.67</td>
<td>47</td>
<td>31</td>
<td>16</td>
</tr>
<tr>
<td>Feedback &amp; use of music in general</td>
<td>0.70</td>
<td>49</td>
<td>35</td>
<td>14</td>
</tr>
<tr>
<td>Feedback &amp; vocabulary and sight words</td>
<td>0.76</td>
<td>53</td>
<td>34</td>
<td>19</td>
</tr>
<tr>
<td>Prompt (Want to do it?) &amp; voices of male and female characters</td>
<td>0.74</td>
<td>52</td>
<td>14</td>
<td>38</td>
</tr>
<tr>
<td>Prompt (Want to do it?) &amp; medium pace of music</td>
<td>0.83</td>
<td>58</td>
<td>13</td>
<td>45</td>
</tr>
<tr>
<td>Prompt (Want to do it?) &amp; characters that are of mixed/other race &amp; ethnicity</td>
<td>0.74</td>
<td>52</td>
<td>14</td>
<td>38</td>
</tr>
<tr>
<td>Prompt (Want to do it?) &amp; characters that are male and female</td>
<td>0.71</td>
<td>50</td>
<td>9</td>
<td>41</td>
</tr>
<tr>
<td>Questions (Relating content to child) &amp; music in general</td>
<td>0.66</td>
<td>46</td>
<td>26</td>
<td>20</td>
</tr>
<tr>
<td>Questions (Relating content to child) &amp; slow pace of music</td>
<td>0.70</td>
<td>49</td>
<td>17</td>
<td>32</td>
</tr>
<tr>
<td>Questions (Relating content to child) &amp; vocabulary and sight words</td>
<td>0.76</td>
<td>53</td>
<td>24</td>
<td>29</td>
</tr>
<tr>
<td>Questions (Relating content to child) &amp; voices of people in general</td>
<td>0.66</td>
<td>46</td>
<td>26</td>
<td>20</td>
</tr>
<tr>
<td>Questions (Relating content to child) &amp; voice of adult</td>
<td>0.67</td>
<td>47</td>
<td>16</td>
<td>31</td>
</tr>
<tr>
<td>Questions (Program) &amp; use of music in general</td>
<td>0.69</td>
<td>48</td>
<td>35</td>
<td>13</td>
</tr>
<tr>
<td>Questions (Program) &amp; vocabulary and sight words</td>
<td>0.74</td>
<td>52</td>
<td>31</td>
<td>21</td>
</tr>
<tr>
<td>Questions (Program) &amp; voices of people in general</td>
<td>0.74</td>
<td>52</td>
<td>39</td>
<td>13</td>
</tr>
<tr>
<td>Scaffold &amp; use of text in general</td>
<td>0.76</td>
<td>53</td>
<td>24</td>
<td>29</td>
</tr>
<tr>
<td>Scaffold &amp; medium size text</td>
<td>0.74</td>
<td>52</td>
<td>23</td>
<td>29</td>
</tr>
<tr>
<td>Scaffold &amp; vocabulary and sight words</td>
<td>0.79</td>
<td>55</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>Scaffold &amp; voiceover</td>
<td>0.66</td>
<td>46</td>
<td>21</td>
<td>25</td>
</tr>
<tr>
<td><strong>Packages</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt (Want to do it?) &amp; characters that are male and female &amp; characters that are of mixed/other race and ethnicity</td>
<td>0.67</td>
<td>47</td>
<td>12</td>
<td>35</td>
</tr>
<tr>
<td>Characters that are male and female &amp; voices of male and female characters</td>
<td>0.67</td>
<td>47</td>
<td>11</td>
<td>36</td>
</tr>
<tr>
<td>Prompt (Want to do it?) &amp; characters that are of mixed/other race and ethnicity &amp; voices of male and female characters</td>
<td>0.66</td>
<td>46</td>
<td>13</td>
<td>33</td>
</tr>
<tr>
<td>Prompt (Want to do it?) &amp; voices of male and female characters &amp; medium pace music</td>
<td>0.66</td>
<td>46</td>
<td>12</td>
<td>34</td>
</tr>
</tbody>
</table>
Table 6-7

| Formal Features and Type of Content Related to Type of Behavior Mothers Did and Their Scaffolding. |
|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
| Vocabulary and sight words                      | Explains (Relating content to child) 23          | Explains (Program) 48                           | Feedback 49                                       | Prompt (Want to do it?) 21                           | Questions (relating content to child) 28                   | Questions (Program) 44                                        |
| 36                                              | •                                               | •                                               | •                                               | •                                               | •                                               | •                                               |
| Camera- tightening 26                           | •                                               | •                                               | •                                               | •                                               | •                                               | •                                               |
| Characters: People in general 40                | •                                               | •                                               | •                                               | •                                               | •                                               | •                                               |
| Characters that are male and female 22          | •                                               | •                                               | •                                               | •                                               | •                                               | •                                               |
| Characters of mix/other race & ethnicity 24     | •                                               | •                                               | •                                               | •                                               | •                                               | •                                               |
| Use of text in general 26                       | •                                               | •                                               | •                                               | •                                               | •                                               | •                                               |
| Medium size text 24                             | •                                               | •                                               | •                                               | •                                               | •                                               | •                                               |
| Voices of people in general 48                  | •                                               | •                                               | •                                               | •                                               | •                                               | •                                               |
| Voice of adult character 27                     | •                                               | •                                               | •                                               | •                                               | •                                               | •                                               |
| Voices of male and female characters 25         | •                                               | •                                               | •                                               | •                                               | •                                               | •                                               |
| Voiceover 28                                    | •                                               | •                                               | •                                               | •                                               | •                                               | •                                               |
| Use of music in general 47                      | •                                               | •                                               | •                                               | •                                               | •                                               | •                                               |
| Medium pace of music 18                         | •                                               | •                                               | •                                               | •                                               | •                                               | •                                               |
| Slow pace of music 27                           | •                                               | •                                               | •                                               | •                                               | •                                               | •                                               |

Note. Number next to each variable is the total number of segments that the program characteristic took place or at least one mother did the type of behavior or scaffolded. Grey shows that the pair had more co-absence than co-presence.
Table 7-1

Summary of the Two Maternal Beliefs Measured

<table>
<thead>
<tr>
<th>Belief</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>School readiness (level of importance)</td>
<td>1.57</td>
<td>0.32</td>
</tr>
<tr>
<td>Educational television (level of agreement)</td>
<td>1.94</td>
<td>0.73</td>
</tr>
</tbody>
</table>

*Note.* Values are based on a 4-point Likert scale with a value of 1 representing a stronger level of importance or agreement and a value of 4 representing a weaker level of importance or agreement.

Table 7-2

Summary of Variables Describing the Amount of Maternal Participation and Scaffolding

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>During entire program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All participation</td>
<td>46.26</td>
<td>31.87</td>
</tr>
<tr>
<td>During scaffolding opportunities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All participation</td>
<td>25.81</td>
<td>15.64</td>
</tr>
<tr>
<td>Scaffolding</td>
<td>11.19</td>
<td>8.16</td>
</tr>
<tr>
<td>Ratio of scaffolding to all participation</td>
<td>0.41</td>
<td>0.22</td>
</tr>
<tr>
<td>Adjusted for number of segments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All participation</td>
<td>1.90</td>
<td>0.56</td>
</tr>
<tr>
<td>Scaffolding</td>
<td>0.79</td>
<td>0.47</td>
</tr>
<tr>
<td>Adjusted for duration of segment(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All participation</td>
<td>0.10</td>
<td>0.05</td>
</tr>
<tr>
<td>Scaffolding</td>
<td>0.05</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Table 7-3

Correlations Between Maternal Participation During Scaffolding Opportunities and Segment Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Number of segments</th>
<th>Duration of segments (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount a mother participated</td>
<td>.89**</td>
<td>.85**</td>
</tr>
<tr>
<td>Amount a mother scaffolded</td>
<td>.83**</td>
<td>.71**</td>
</tr>
</tbody>
</table>

* **p < .01, one-tailed.
Table 8-1

Summary of Linear Regression Analysis for Variables Associated with the Child and Significant Predictors of Children’s Learning of Vocabulary and Sight Words (N = 31)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE B</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child's pre-assessment score for target vocabulary and sight words**</td>
<td>0.84</td>
<td>0.21</td>
<td>0.64</td>
</tr>
<tr>
<td>Child's age</td>
<td>-0.01</td>
<td>0.67</td>
<td>0.00</td>
</tr>
<tr>
<td>Child's gender</td>
<td>0.40</td>
<td>0.45</td>
<td>0.13</td>
</tr>
</tbody>
</table>

Note. $R^2 = .50$.  
**p < .01.

Table 8-2

Summary of Linear Regression Analysis for Variables Associated with the Child and Significant Predictors of Children’s Learning of Reading Skills (N = 31)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE B</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child's pre-assessment score for target reading skills**</td>
<td>0.9</td>
<td>0.19</td>
<td>0.67</td>
</tr>
<tr>
<td>Child's age</td>
<td>0.13</td>
<td>0.53</td>
<td>0.03</td>
</tr>
<tr>
<td>Child's gender</td>
<td>0.31</td>
<td>0.37</td>
<td>0.118</td>
</tr>
</tbody>
</table>

Note. $R^2 = .50$  
**p < .01.

Table 8-3

Summary of Linear Regression Analysis for Variables Associated with the Mother and Significant Predictors of Children’s Learning of Target Vocabulary and Sight Words (N = 31)

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal participation during scaffolding opportunities*</td>
<td>-0.04</td>
<td>0.02</td>
<td>-0.28</td>
</tr>
<tr>
<td>Child's pre-assessment score for target vocabulary and sight words**</td>
<td>0.82</td>
<td>0.17</td>
<td>0.63</td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal scaffolding*</td>
<td>-0.08</td>
<td>0.04</td>
<td>-0.30</td>
</tr>
<tr>
<td>Child's pre-assessment score for target vocabulary and sight words**</td>
<td>0.84</td>
<td>0.16</td>
<td>0.65</td>
</tr>
</tbody>
</table>

Note. $R^2 = .56$ for Model 1; $R^2 = .57$ for Model 2.  
*p < .05. **p < .01.