Shared Reading, Scaffolding, Guided Participation, and Mind-mindedness in

Appalachian Head Start Families: Building the Construct of Mindful-mindedness

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Abstract

The purpose of this study was to provide an intervention to Appalachian Head Start
families that provided novel ways of thinking about their children's development, while
also arming them with effective strategies and tools they could use to build engaging and
enriched interactions. The intervention curriculum was developed based on a theory of
mentoring in the zone of proximal development (Vygotsky, 1978; Wiles, 2008). This
research effort sought to answer the following research questions: (a) Do adults'
descriptions of their children as mental beings and perceptions about their children as
individuals with minds of their own change due to participation in the intervention
condition as compared to those in the control condition?; (b) What are the effects of this
intervention on adults' use of scaffolding and guided participation strategies in the shared
reading activity over time?; (c) Does participation in the intervention condition affect the
child's outcomes on standardized tests?; and (d) What qualitative differences in the way
adults and children interact in the shared reading activity can occur as a result of the
intervention? A randomized controlled trial including 50 parent-child dyads, were
videotaped answering a mind-mindedness interview question and reading with their
children at three time points over the Head Start school year. A Mixed-methods approach
was implemented in the study's design, implementation, data collection, and analyses.
Quantitative analyses revealed significant differences in both mental descriptions of
participants' children and the type and frequency of scaffolding techniques as a result of
participation in the intervention. Triangulation of the qualitative and quantitative analyses

indicated the need for a new theoretical construct to explain what occurs in optimally functioning interactions. Mindful-mindedness describes and explains adults' metastrategic scaffolding technique selection in a mindful and mind-minded style, and then their application of these techniques in a serial process creates a multiplier effect on the efficacy of scaffolding. Implications for policy and practice, limitations of the current study, and directions for future research are also provided.

In Memoriam

This work is presented in memoriam of the families, friends, and communities of those who were injured or lost their lives at Virginia Tech on April 16, 2007. Your and our collective loss has helped me understand what it means to be a Hokie, and what it means to prevail.

Attics of My Life

In the attics of my life
Full of cloudy dreams; unreal
Full of tastes no tongue can know
And lights no eye can see
When there was no ear to hear
You sang to me

I have spent my life
Seeking all that's still unsung
Bent my ear to hear the tune
And closed my eyes to see
When there were no strings to play
You played to me

In the Book of Love's own dreams
Where all the print is blood
Where all the pages are my days
And all my lights grow old

When I had no wings to fly
You flew to me
You flew to me

In the secret space of dreams
Where I dreaming lay amazed
When the secrets all are told
And the petals all unfold
When there was no dream of mine
You dreamed of me

- Robert Hunter and Jerry Garcia

For My Family
&
Fictive Kin

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"When I had no wings to fly

You flew to me"

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"When there was no dream of mine

You dreamed of me"

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Chapter 1: Introduction

Gallimore and Tharp, 1989, p. 111. on Instruction and Conversation:

"The concept itself contains a paradox: 'Instruction' and 'conversation' appear contrary, the one implying authority and planning, the other equality and responsiveness. The task of teaching is to resolve this paradox. To most truly teach, one must converse; to truly converse is to teach."

The very core of our understanding of human development derives from cognitive and emotional skills shaped through our social interactions. We are, from before birth, embedded in a socio-cultural setting. From the time we are *in utero*, we can hear and distinguish the languages of our various cultures (Moon, Lagercrantz & Kuhl, 2013). Our state as sentient, mental beings is the culmination of generations of development including, but not limited to language, writing, mathematics, science, and art. Termed *cultural artifacts* (Rogoff & Morelli, 1989), these are the way we make sense of the world around us. Human beings have only indirect access to the world because material and symbolic tools of our cultures mediate all human activity (Wertsch, 1991).

All human groups occupy a world spread with the remnants of their ancestors' history. This history is embedded in the cultural artifacts that mediate individuals' interactions with those who brought them into the world and those who came before them. All individuals must master an understanding of the cultural artifacts to continue the history of their group (Cole, 2001). Sociocultural history incorporates tools that facilitate culturally appropriate thoughts and solutions to problems, and the particular setting within an interaction structures cognitive activity (Vygotsky, 1978). Given the current study, these propositions cannot be overstated. In a world of few universal laws,

culture and cultural mediation are *universal* features of human development and existence.

Problem

Head Start fulfills its mission by recruiting children from low-income families who are at-risk for poor academic achievement, specifically due to lower language and literacy skills in comparison to their peers from middle- and upper-socioeconomic families (Baroody & Diamond, 2012). These children's development of emergent literacy and socio-emotional skills has been a difficult problem to effectively address due to the multidimensional and multilevel barriers to acquiring these skills. Among these barriers are overburdened teachers (Powell, Diamond, Bojczyk & Gerde, 2008) high turnover in the professional field of Early Childhood Education, access to culturally relevant evidence-based programming, and socio-cultural-historic attitudes about the utility of education.

Additionally, the classic conundrum for intervention and prevention researchers and practitioners continues to exist: those families who would most likely benefit are those least likely to receive the necessary prevention and intervention programming. The factors that prevent these families from receiving the benefits are socio-cultural-historic factors including poverty, rural locations, comfort with literacy and language, and outreach from formal institutions. This outreach from formal institutions needs to provide a culturally sensitive and relevant approach to helping families learn to develop these skills together.

Even more daunting, Appalachian families are oftentimes rural and the literacy rate among these families is among the lowest in the nation (Donehower, Hogg, & Shell,

2007). Accessing these families presents a challenge due to geographic isolation and socio-cultural beliefs and attitudes about the value of education and research. These risk factors for children learning to gain cognitive skills while developing appropriate interpersonal (both peer and adult) interactions offer evidence of a salient and necessary need for formal and meaningful assistance to help alleviate these factors and provide children and adults in rural settings with the skills and knowledge to protect against these risks.

Purpose

This research is focused on providing Appalachian Head Start families with novel ways of thinking about their children's development, while also arming them with effective strategies and tools they can use to build engaging and enriched interactions. Specifically, I focused on providing a culturally sensitive, meaningful, and useful approach to help adults enhance engagement between them and their children when reading. Low-income Appalachian families need assistance to learn about how to become effectively involved in their children's learning and relationship development. This study provided that assistance to the participating families in a rural Head Start setting with the tools, techniques, knowledge, and strategies to become meaningfully involved in their children's cognitive and social-emotional development.

Justification and Rationale for this Study

As children develop, they begin to take a more active role in contributing to, and shaping their own cultures. Research on the dynamics of parent-child interactions paints a complex picture of what occurs when adults and children interact. When we take a more nuanced, systemic, and informed approach to child development, we recognize the

bidirectional, cyclical, and constant dynamic occurring when adults and children engage in meaningful activities together. These activities can be even more dynamic when adults are knowledgeable of how to extend thinking and cognizant of their children's thinking processes during an activity.

This study focuses on Shared Reading (the act of reading a book *together*) as a structured activity around which the intervention for cognitive development revolves. We assumed that shared reading interactions have the potential to make meaningful contributions to both adults' and children's skills across several important developmental domains (e.g. emergent literacy, print awareness, development of intersubjectivity). A particular interactive activity setting structures cognitive activity (Vygotsky, 1978), and might be used to great advantage with the appropriate skills, knowledge, and strategies. Moreover, the shared reading interaction activity and its inherent contextual factors ensure that this specific activity has multiple potential leverage points for effecting meaningful change. In this study I aimed to provide adults with the tools, confidence, and knowledge to learn the art and science of conversing with their children while engaged in a shared reading activity. Then, I sought to further facilitate these adults' assessing and assisting the developing mind and extending their children's thinking and learning through the selection and use of theoretically sound strategies such as scaffolding and mind-mindedness.

This study takes a stride toward the future of social science research as the depth and breadth with which it examines the effects of a shared reading interaction informed by multiple and mixed methods. From inception it was designed as a longitudinal, mixed methods research effort taking a *pragmatic* approach to research and discovery. Mixed

methods as a field has been gaining recognition as a powerful means of compiling a broad and deep understanding of units of analysis (Creswell & Plano-Clark, 2007).

Research Questions

Based on an extensive review of theories and literature, combined with my own experiences in research and theory development, I developed a mentoring model of learning to read in the Zone of Proximal Development (2008). I believe this model could provide a context to study both teaching and learning. This study was developed to answer the overall question, "Does the theoretical mentoring model of learning to read (Wiles, 2008) provide a useful, measurable, and effective guide for teaching scaffolding and mind-mindedness in Appalachian Head Start families?" The specific research questions aimed at answering this question are:

RQ_1: *Do adults' descriptions of their children as mental beings and perceptions about their children as individuals with minds of their own change due to participation in the intervention condition as compared to those in the control condition?*

RQ_2: *What are the effects of this intervention on adults' use of scaffolding and guided participation strategies in the shared reading activity over time?*

RQ_3: *Does participation in the intervention condition affect the children's outcomes on standardized tests?*

RQ_4: *What qualitative differences in the way adults and children interact in the shared reading activity can occur as a result of the intervention?*

Note that the first three research questions approach data analysis in a quantitative manner, while the fourth takes a qualitative approach to data analysis. The answers to

these questions will be triangulated to provide both depth and breadth of study of the phenomena in the shared reading activity setting.

Dissertation Overview

Chapter 2 is devoted to an extensive review of multiple theoretical perspectives guiding this research, paying particular attention to the sociocultural perspective that is central to the work. The application of these frameworks relative to interventions is also presented. I provide a critical review of literature examining the current state of knowledge in reading, shared reading, and teaching-learning from a sociocultural perspective. I also review the model I developed on reading the ZPD and described how this model is relevant to this study.

My research methods are presented in *Chapter 3* including: the research design, the intervention program, the measures used in the study, the research process, and data collection. Methods for quantitative and qualitative analyses are described in reference to this study's research questions. *Chapter 3* also contains information about the observational coding methods for both qualitative and quantitative data collection and analyses.

Chapter 4 consists of the Results and Findings section of this study. First, demographic information about the participants is presented. Next, a Multi-Level Model (MLM) or a Hierarchical Linear Model (HLM), of the mind-mindedness variable is applied and effects are reported. Following this, the scaffolding observational coding data is analyzed through application of HLM / MLM and results are presented.

An in-depth qualitative analysis of the shared reading interactions of those dyads in the treatment condition is presented to provide depth to understanding the phenomena

occurring during the shared reading activity that might result from exposure to the intervention.

Chapter 5 presents the discussion of the study's results and findings, particularly as they relate to revising the theoretical mentoring model of learning to read (Wiles, 2008) and developing the construct of *Mindful-mindedness*. Additionally, limitations of the study are presented, as well as the obligatory call for future research. Finally, implications for research, practice, and policy are presented within the context of theory and application.

Chapter 2: Literature Review

This chapter presents information and a review of the state of the art of the

research involving theoretical frameworks applied in this research and shared reading

knowledge from current research. Because this study is predicated on a socio-cultural-

historical theoretical model of mentoring children to learn to read in the *zone of proximal*

development (ZPD), a presentation of the fundamental assumptions of the sociocultural

perspective (Vygotsky, 1978) and a description of the ZPD are presented. Following this

theoretical review, a critical review of *theory of mind*, *mind-mindedness*, *mindfulness,*

and *metastrategy knowing* is presented in the context of this study. Finally, I included a

review of a Mentoring Model of Shared Reading in the ZPD (Wiles, 2008).

Assumptions

Given that learning to read is usually done with the assistance of someone who

already knows how to read, Vygotsky's sociocultural perspective provides a framework

informing this dynamic. The sociocultural perspective presents some basic and broad

assumptions speaking to the nature of human development.

First, this perspective views ontogeny as occurring within the medium of culture

(Miller, 2000; Vygotsky, 1978; Wertsch, 1985) thus, trying to separate nature from

nurture is futile and counterproductive. Second, language is central to human

development and is the way in which we internalize thoughts (Bruner, 1985; Vygotsky,

1978). Language is central in this perspective. Language is the tool of culture children

use to understand and make sense of the world (Bruner, 1990). Thus, learning to read has

consequences for the way children learn to think about things and events. Third, human

development is both qualitative and quantitative, with dialectical processes working until

synthesis is achieved, resulting in a qualitatively different ontogenetic process (Wertsch, 1985). Finally, making meaning from interactions with the world is seen as the life-long goal of ontogeny (Bruner, 1990), and as such human development is a culturally co-constructive process (Bruner, 1986; Vygotsky, 1978).

The *zone of proximal development* (ZPD) is described as the developmental space between where a child or less experienced person can perform on her own and that of what developmental space she could occupy with the assistance of a more experienced other person. Effective strategies and techniques used to assist an individual in navigating through this space are referred to as scaffolding. However, the more experienced person needs to be competent in identifying the current developmental level of the less experienced peer.

When adults are teaching scaffolding techniques to children, an importance falls on understanding child development in a more comprehensive manner. Children's development, according to Vygotsky, (1978) is an active process, whereby the child transforms socially shared processes into internal constructs. Children are immersed in culture and society, and they construct knowledge based on experiences within this context. Vygotsky's sociocultural perspective, which informs research on parent-child interactions, incorporates the following domains and provides specific assumptions about the nature of human development: *Culture, Language, Quantitative change leading to qualitative change,* and *Making Meaning.*

Culture. First among the assumptions of the sociocultural perspective is that human nature is created within the cultural context. "Culture" means the medium of human life composed of set of interrelated artifacts (Rogoff, 1998). Human development

and intellectual competence are crucially dependent on interaction with others and mediational means or cultural tools (Wertsch, 1998).

Until recently, much of the research on cognitive development has concentrated on individual mental processes without taking into account a social-historical-cultural context (Hatano & Wertsch, 2001; Wood, 2003). While many attempt to separate culture and nature, the Vygotskian perspective views this as a futile exercise, because human beings remain inextricably linked to and intertwined with their cultures. Put another way, cultural artifacts do not serve simply to facilitate mental processes that would exist anyway; rather they fundamentally shape and transform these mental processes. A corollary to this position is that all mental functioning begins and remains culturally and historically situated (Gauvain, 2001). Culture also provides *ways* of development among the many made available through our plasticity (Bruner, 1986). Culture includes the cumulative history of humanity, as we are where we are today because of our historical trajectories. Even socioculturalists have largely ignored the historically situated reality of ontogenesis (Cole, 2001).

Cultural artifacts. Artifacts include "social tools" such as mathematics, art, text, schematics, and most importantly, language (Rogoff & Morelli, 1989). According to the Vygotskian view, humans have indirect access to the world, as material and symbolic tools of culture mediate all human activity (Wertsch, 1991). While there are several tools mediating human interaction with the world, Vygotsky emphasized language as the most crucial (Cole & Wertsch, 1996).

Language. Language, according to Bruner (1985), is the major means by which we internalize thoughts. Bruner (1985) characterizes the sociocultural perspective of

language as a way of categorizing one's thoughts about things. Vygotsky (1978)

advocated that children's speech takes on an intrapersonal function in addition to an

interpersonal one. That is, when children have acquired language, they can use it not

only to communicate with others, but also to direct their speech inward to guide their

thoughts and behaviors. The ability to use language to talk to others and oneself is viewed

by Vygotsky (1978) as "the history of the socialization of children's practical intellect"

(p. 27).

Further, how one talks also becomes how one represents what one talks about

(Bruner, 1986). Language, the "tool of tools" (Cole & Wertsch, 1996) still may not be

adequate to all mental and intellectual needs. There are times when "it is better to remain

silent at the risk of being thought a fool, than to talk and remove all doubt" (Switzer,

1907, p. 29) just as sometimes words are inadequate to express ourselves. Even so,

language is the way we think about and represent the external world and it holds special

prominence in the Vygotskian view. Increasingly sophisticated linguistic abilities mediate

and structure the way we conceptualize our understanding of the external world,

including interactions with others (Fernyhough, 2007). The external becomes the internal,

and the speech we hear outside ourselves becomes the speech we use inside ourselves.

We think in our language and thus make meaning of the world in our language.

Quantitative change leading to qualitative change. To appreciate the historical

underpinnings of this assumption, we require a brief introduction to Jean Piaget's stage

theory of child development. Piaget's concept of dialectical learning, learning by the

resolution of opposing forces he termed equilibrium and disequilibrium, is central to

cognitive development. Piaget (1954) hypothesized that processes occur within the

individual's mind and help her move through the stages and processes of intellectual development. Piaget emphasizes internal mental processes, psychogeneses, as distinct from external mental processes. For Piaget, dialectical learning occurs within the individual, removed from social influence. Additionally, structural and organizational adjustments and adaptations are at the heart of this theory.

Vygotsky, on the other hand, describes dialectical learning with the concepts of *thesis, antithesis* and *synthesis*. However, the major distinction between Piaget's concept and Vygotsky's concept is the use of language and other social tools to move toward synthesis. Whereas Piaget emphasized the utility and importance of observational learning, Vygotsky emphasized that language is the means through which humans interact with the world, especially in the intra-mental instruction of metacognition. The necessarily social construction of reality through the way humans talk with themselves, interact with the tools of the world and make meaning (sociogenesis) of the world, applies to the domain of dialectical learning. According to Vygotsky (1981, as cited in Cole & Wertsch, 1996):

> The inclusion of a tool in the process of behavior (a) introduces several new functions connected with the use of the given tool and with its control: (b) abolishes and makes unnecessary several natural processes, whose work is accomplished by the tool; and alters the course and individual features (the intensity, duration, sequence, etc.) of all the mental processes that enter into the composition of the instrumental act, replacing some functions with others (i.e. it

re-creates and reorganizes the whole structure of behavior just as a technical tool

re-creates the whole structure of labor operations (pp. 139-140).

As the above demonstrates, Vygotsky, as with Piaget, also was concerned with

organization and structure; however, the emphasis on cultural tools was virtually absent

from Piaget's work. Scholars often point out the differences between Piaget and

Vygotsky (e.g. Bruner, 1997; Cole & Wertsch, 1996), but much of the investigations

point to the differences between psychogenesis and sociogenesis of the mind. However,

the major difference between the two giants of the field of child development is the role

of culture as a mediating factor in the developing mind (Cole & Wertsch, 1996).

Moreover, mind not only expresses culture but, because the mind self-generates novel

constructions, through the use of mediational tools like language, humans are able to be

free from simply adhering to the prevailing cultural system (Bruner, 1997).

Making meaning. Third among the assumptions of the socioculturalist

perspective is that making meaning is the goal of human development and intellectual

activity (Bruner, 1990). Humans seek to make meaning from the world, specifically

within and through their cultural context. Making meaning necessarily involves social

interaction (Rogoff, 1990). The meanings of actions and the contexts are inextricable

from one another, and not specifiable independent of one another (Cole & Wertsch,

1996). Language is central to making meaning and Bruner (1985) characterizes the

sociocultural perspective of language as a way of categorizing one's thoughts about

things.   Because cultural artifacts mediate making meaning, we cannot suppose that the

mind is located internally. Higher cognitive functioning involves transactions that include

the biological individual, the cultural mediational artifacts and the culturally structured environs in which actions take place and of which we are part (Cole & Wertsch, 1996). Cognitive competence develops through participating in social situations and practices that are often informally scripted though "guided participation" (Rogoff, 1990).

In summary, the assumptions of the Vygotskian perspective (e.g. culture, language) intertwine in a cohesive, pervasive, and ubiquitous manner. Language is the primary means through which humans interact with the world. Their experiences and actions with the world are mediated through cultural artifacts, some developed over generations of human existence and some more recently. Finally, making meaning is the goal of human existence. Bruner's compelling analysis encourages researchers to understand that humanity is driven by the need to make sense of the world. Making sense of the world is necessarily social and mediated by social artifacts.

The Zone of Proximal Development

The Zone of Proximal Development (ZPD) is a central component of the theoretical framework of this research because it describes realized and potential performance (e.g., reading performance). When investigating the relation between learning and development, Vygotsky (1978) described the ZPD as the central tenet of his sociocultural perspective on cognitive development. Vygotsky defined the ZPD as "*the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers*" (italics in original) (Vygotsky, 1978, p. 86). In the case of reading, a child may be able to read full sentences with assistance with a single word that otherwise would have prevented the child from

demonstrating her full potential to read and understand the meaning of the words. For example, if the sentence, "Mommy was driving the car in a roundabout when I saw a cute, furry puppy" were being read, a child might not be able to understand the word "roundabout," and thus would not be able to capture the meaning of the sentence indicating the sighting of the puppy. Whereas, if the child gets some assistance from the adult on sounding out and providing the meaning of a roundabout, she can move past that word and gain the larger meaning of the sentence.

The ZPD is predicated on the existence of a participant in a given context being more skilled or experienced than another. Given that adults are usually more experienced than children in reading skills, the use of the term "adult" implies a more skilled and experienced individual in the context of my research. This arrangement allows for the less experienced individual's potential to be realized through what is known as scaffolding (Wood, Bruner & Ross, 1976) and guided participation (Rogoff, 1990). Scaffolding is a "process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts" (Wood et al., 1976, p. 90). It is useful to think of the scaffolding metaphor, as defined by Bruner as intentional, temporary, and flexible structures built to match the learner's development (Bruner, 1986), much like actual scaffolds used in building construction. The building, constructing, and positioning of resources in creating scaffolds involve active processes, allowing the building to be built with supporting structures that eventually are no longer necessary. In the Mentoring Model of Shared Reading in the ZPD
 (Figure 1) that serves as the framework for this study, scaffolding is a significant concept because it frames internal and interactional processes that move a child's reading along.

Scaffolding is a collaborative form of learning, by which a child can achieve her potential development with assistance from an experienced adult. Used effectively, scaffolding evokes active child engagement and interest in the form of questions, modeling, feedback, comments, and other verbal and non-verbal indicators of attention and engagement.

Theory of Mind

Theory of Mind (ToM) is the ability to predict and explain human behavior with reference to mental states (Dunn, 2000), and is important for the model of shared reading because it adds a foundational relationship dimension. *Intersubjectivity* is a core concept from the ToM literature (Trevarthen & Hubley 1978) and reflects shared understanding of what will occur during interaction.

Part of encouraging ToM development specifically, and cognitive development generally, is the use of a concept called *mindfulness.* Mindfulness is a process of being able to draw novel distinctions, examine information from new perspectives, and be sensitive to context (Langer and Moldoveanu, 2000; Langer, 1993). This concept involves looking at the world in a creative way, not as it is, but as all of the possibilities of what it could be. It can be seen as the realization of multiple potentialities within a given circumstance.

Mind-mindedness

Mind-mindedness, defined by Meins (1997) as the propensity to treat one's child as an individual with a mind, has been demonstrated to be an important facet of maternal sensitivity that predicts both security of attachment and later ToM skills (Meins, Fernyhough, Fradley, & Tukey, 2001; Meins et al., 2002; Meins et al., 2003). This way

of thinking can shape adults' expectations and cognitions about children and help adults believe and act in ways that maximize children's development. Therefore, mind-mindedness can be put to good use during shared reading, and can be a useful perspective to leverage when planning and delivering an intervention. Moreover, Meins, Centifanti, Fernyhough, & Fishburn (2013) found that mothers' mind-mindedness can mitigate the impact of low-socioeconomic status (SES) on children's behavioral difficulties. This presents a ripe area for exploration within this research, as the sample is also from a low-SES population, and an intervention targeting this approach to child-adult interactions could provide a meaningful mitigation of the well documented effects of SES on academic, social and cognitive skill.

Mindfulness

Mindfulness is best conceptualized as a process of being able to draw novel distinctions, examine information from new perspectives, and being sensitive to context (Langer and Moldoveanu, 2000; Langer, 1993). Mindfulness is a way of thinking about things not as they are, but as they could be. Mindfulness can be seen as the realization of multiple potentialities within a given circumstance. Mindlessness is the opposite of mindfulness; acting as if the way things are done is the only way to do them. In her seminal work on Mindfulness, Elizabeth Langer (1993) notes that in traditional educational settings, teaching is usually rigid and makes attempts to hold constant things that may naturally vary. This mindless way of teaching and learning usually is centered on the notion that there is only one way to do things. Mindfulness is the realization that there can be varying ways of performing a given task or learning a given concept that are not necessarily tied to "the way we've always done it" (quotes mine) (Langer, 1993).

When practitioners engage in mindless methods, they are beholden to one version of the "truth" and do not reconsider what they know to be "true." The contrast between a mindful education system and a mindless one could not be starker. It should suffice to say here that encouraging mindfulness in education is a good start towards teaching and learning how to read.

Mind-mindedness and mindfulness. Both mindfulness and mind-mindedness play important roles in cognitive development. Mindfulness allows for individuals to be creative by regarding an object or event as open to interpretation. Mind-mindedness, when applied with maternal mindfulness can help distinguish between whether the child is merely a being with needs that must be met or a being possessing the possibility of a mind. Both of these concepts focus on potential. Mindfulness focuses on what could be true and how the world could be seen and mind-mindedness focuses on what a child could do and what potential for growth is available. While the focus on mindfulness is on the present, mind-mindedness is a metacognitive activity focused on the immediate future.

Metastrategic knowing. Deanna Kuhn (2000; 2006) and colleagues' (1995) research on strategizing informs teaching and learning through the evaluation of strategy formation and decision-making. Kuhn draws the distinction between declarative knowledge, or knowing what, and procedural knowledge, or knowing how (Kuhn, 2000). Because of this distinction, the theory of metastrategic knowing posits a way of knowing about procedures. Put another way, this is knowing about knowing how. Whereas, metacognitive knowing is knowing what you know. Metastrategic theory also draws the distinction between metatask knowledge (knowing about task goals) and metastrategic

knowledge (knowing about the strategies one has available to address these goals) (Kuhn & Pearsall, 1998). The theory of metastrategic knowing has important implications for mentoring in the moment, as being able to assess and choose which strategy will be most effective in a given situation is critical to good practice (Gallimore & Tharp, 1990).

     Applying theory to practice. Jerome Bruner (1986), perhaps the quintessential neo-Vygotskian, has opined that the ZPD is at once a developmental theory and a theory of education. While I fully appreciate and accept this line of thinking, through my own research and study, I have arrived at it as a theory of mentoring as well. When thinking of instruction and assessment, we need to recognize the overarching context of the educational system. Bruner explains that the historical educational system has a formal cultural transmission function and we use the cultural tools we have developed throughout history to convey information about the world. In essence, it has been a transmission of knowledge to those who know less by those who know more. The tool most used, of course, is language. Bruner urges us not to forget that, "The medium of exchange in which education is conducted – language – can never be neutral" (Bruner, 1986, p. 121).

Vygotskian Instruction and Assessment

     Instruction. In this context, instruction is meant within the domain of educational instruction. Instruction as a scaffolding technique within the intervention curriculum will be covered in Chapter 3.

     Educational instruction is based on conveying information with shared meaning in educational settings. Instruction includes information on how something should be done to accomplish a goal and meanings are what we can agree upon, or at least accept as a

basis for agreement and discussion about a concept or construct (Bruner, 1986). The implications of the Vygotskian perspective with regard to educational instruction revolve around the ZPD and the utility of an approach that respects the cultural realities of students and their families. When taking a Vygotskian approach to instruction in the context of education, an awareness of the socio-historic-cultural embeddedness is the start. However, using processes that support mental functioning, such as scaffolding (Wood, Bruner, & Ross, 1976), guided participation (Rogoff, 1990), and assisted performance (Tharp & Gallimore, 1988; Gallimore & Tharp, 1990), are at the heart of Vygotskian perspective.

Children are active learners within the sociocultural context, thus these techniques can facilitate intellectual development through the use of culturally normative activities, including planting gardens, exploring the woods, or cooking, to name a few examples. The reality is that children (and mindful adults) are always learning. Young children are always developing their social understanding (Fernyhough, 2007), and thus the shared reading activity is a particularly rich area for developing social understanding.

However, adults often assume that they speak in a "univocal" way (Wertsch, 1991) and that problems in understanding are related to the child's inability to receive and decode a "transmission." Moreover, the tacit belief held by many adults, that meanings conveyed in instruction are transparent and clearly symbolic of the reality of the world, even if these words refer to abstract concepts (Mortimer & Wertsch, 2003), is not developmentally appropriate. Given the processes of the Vygotskian view, instruction needs to be at best a transactional or, at worst, a negotiated enterprise (Bruner, 1986).

Assessment.   To navigate the ZPD, adults or more experienced peers need to assess the current developmental level of the other individual(s) in the task**.** Assessment plays a crucial role in determining where a mentee is within the zone and then strategies and developmentally appropriate practices can be implemented to scaffold. One major developmental achievement that is most likely to transform performance and intellectual functioning is language (Fernyhough, 2007). Language allows the mentee to describe to the mentor where her current level of understanding within the zone resides, and may provide clues to the mentor about strategy selection to scaffold cognitive development.

Language in assessment is also crucial to the developing child's mind, as the language the mentor uses externally to the child becomes the internal language the child uses in intramental negotiations. The child will use the mentor's language to self-evaluate until mastery of language allows for novel language use (Fernyhough, 2007).

Moving Forward

Each of the theoretical perspectives above provides a crucial foundation for the research I conducted for this dissertation. Through combining multiple theoretical perspectives, identifying their key components, reinterpreting what they mean within the shared reading context, and understanding what each contributes to the overall process of human development, I tried to build a comprehensive model of mentoring within the ZPD, as applied to the shared reading activity setting.

The model (Wiles, 2008) below identifies the key theories and the directionality of the processes at work during shared reading. The intervention used for this research was based on, and indeed is a test of, the theoretical model presented below. A

descriptive overview of the model is provided, and then a summary of the theoretical

perspectives section of this chapter is presented.

Figure 1. A Mentoring Model of Shared Reading in the ZPD

Guided Participation & Scaffolding
Questioning, Instructing, Modeling, Feedback, Contingency
Management, Cognitive Structuring, (both Verbal & Non-
verbal Communication) and others

Intersubjectivity

Dialectical Learning

Adult

Mindfulness &

Child

Dialectical Learning

Mind-mindedness

Continual assessment of hild's engagement, nterest, intentions, knowledge and ToM

Continual assessment of parent engagement, intentions, learning emergent literacy skills, vocabulary development, oral language development, ToM development

Active-child Engagement and Interest
Asking questions, Modeling, Feedback, Commenting, (both
Verbal & Non-verbal communication), and others

Model Description

On a global scale, this theoretical model posits that children and adults are

continually assessing interaction and resolving cognitive dialectics. Cognitive dialectics

are opposing ideas that require the mind to undergo an organization or an adaptation (e.g.

assimilation or accommodation) to resolve cognitive conflict. Learning and cognitive development are thought to occur within this interaction. This model posits that the process of learning, rather than the content or object of learning, is a fundamental aspect of cognitive development and is achieved through scaffolding (Wood, et. al, 1976; Bruner, 1985, 1986, 1990) and guided participation (Rogoff, 1990). Further, the model posits that reading is a natural activity in which children can be mentored to learn in different domains simultaneously. When a child can make predictions based on a novel theory of what another may be thinking, metacognitive and social skill domains are being developed simultaneously.

The model in Figure 1 depicts a complex interface between adult and child. The model is complex because of the dynamic and fluid nature of the interaction and synergistic because of its mutually dependent nature in the ZPD. Shared reading provides a setting for many diverse areas of development, including ToM development (Ruffman, Slade & Crowe, 2002; Adrian, Clemente & Villanueva, 2005), social-emotional development (Serpell et al. ,2002), and emergent literacy (Connor, Morrison & Slominski, 2006; Bergin, 2001; Arnold & Whitehurst, 1994).

Through this model, we are able to visualize and describe both the individual cognitive processes at work (i.e., dialectical learning), as well as the dyadic exchange of information about the intentions, beliefs, desires, and emotions of others (e.g., mindfulness, mind-mindedness, intersubjectivity). Additionally, there is knowledge exchanged from the adult to the child in the form of new vocabulary, word and letter identification, and novel oral language. This knowledge is the foundation for emergent

literacy, oral language development, and other cognitive gains for children. For a more complete review of the model in Figure 1, see Wiles (2008).

Summary

Learning in the Vygotskian view is situated within the socio-cultural-historical context of family, social, and educational systems (Bruner, 1986). The metaphysical questions and proposed answers about the nature of the mind informed by Vygotsky and others have serious implications for the way we teach and learn as children and adults. For interventions to be optimized, they need to be an intentionally co-constructive process, with negotiated and transactional components that situate the child as "child-in-action-in-cultural-context" (Miller, 2000). Mentoring needs to be child-centric and focused on the specific needs of the individual child as determined by the zone.

Understanding training of adults in effective shared reading techniques as teaching them to engage in metacognitive activities such as metastrategic knowing, mindfulness, and mind-mindedness requires understanding and recognition of the ZPD. These processes all invoke potential in some way, shape, or form. Metacognition subsumes metastrategic knowledge and mind-mindedness, while mindfulness is about the potential and alternative uses and strategies that *could* be. The ZPD is a theory that merges current levels of development with potential levels of development through assistance, again emphasizing potential. Training adults to recognize potential strategies, techniques, and developmental trajectories within the shared reading domain potentiates positive cognitive development. Finally, applying the sociocultural perspective to instruction and assessment has the potential to yield meaningful results even within the ordinary and established teaching curricula and assessment metrics.

Shared Reading Literature Review

The previous section of this chapter focuses on development more broadly, and cognitive development more specifically, however, this section targets the domain of Shared Reading. This review of research on Shared Reading links the socio-cultural and constructivist theoretical perspectives above with the culturally relevant domain for intervention presented below.

Because the nature of learning to read necessarily involves a more experienced individual, it is difficult to investigate learning to read without being aware of the ZPD and the centrality of this theory in developing reading skills in the learning peer. Often, authors of the research results and findings presented here may not have been explicit in acknowledging the ZPD. Even when not explicitly recognized, there is evidence of implicitly describing the theory of the ZPD in almost all of the literature on shared reading. However, those who explicitly employ the theory of the ZPD necessarily inform the way their studies are conducted and with whom. Roberto, Blieszner and Allen (2006) in their review of family gerontology literature note, "Theory informs the development of research questions, points to populations and samples, suggests variables and measures, and aids in interpreting study results" (p. 515). In the shared reading *activity setting* (Gallimore & Tharp, 1990), the ZPD is implied.

Broad knowledge about benefits of shared reading exists within the research literature (e.g. Miles & Stipek, 2006; Morgan & Fuchs, 2007). The shared reading activity is often linked to specific aspects of cognitive development, but it is important to consider that these are all pieces of the expanded development of literacy in particular and more globally academic achievement as a whole. Additionally, learning to read is not

the only thing that happens in the shared reading activity, as the theories mentioned above describe, there is more than just learning phonemes, text characteristics, and language skills. Upper level cognitive development, such as metacognition, ToM formation and metastrategic reasoning skills can be scaffolded in the shared reading activity setting. Socialization practices are also transmitted in this activity. In-home literacy development is chiefly related to a parent's socialization practices, such as sensitivity to the child and contingency management, within the setting of the shared reading activity (Serpell, et al. 2002).

To begin the review of reading research, the concept of *emergent literacy* requires attention. Emergent literacy is defined as that "*which involves the skills, knowledge, and attitudes that are developmental precursors to conventional forms of reading and writing*" (italics in original), (Connor, Morrison & Slominski 2006, p.665).

Emergent literacy fosters cognitive development in the domains of book, story and print awareness, narrative understanding, early word recognition, early letter recognition, and listening and language comprehension (Whitehurst and Lonigan, 1998). Through shared reading, a child learns literacy skills in a context that introduces her to print and adult-child dialogue around a book, and encourages vocabulary development through an ecologically valid activity. Through shared book reading activities children also learn conventions of print, such as knowing that sentences begin with a capital letter. They also acquire knowledge of graphemes, which includes recognition and being able to name letters of the alphabet, and then graphemes-phoneme correspondence. Finally, children also acquire phonological awareness, which is the recognition of phonemes, or distinct sounds. (National Research Council, 2000; Whitehurst and Lonigan, 1998).

Taken together, shared reading can foster comprehension and meaning making, the goals of human development (Vygotsky, 1978).

In addition to the emergent literacy gains, shared reading has potential to have effects on ToM development as well. Ruffman, Slade and Crowe (2002) studied false-belief performance in dyads and found evidence that parents' discussing mental states has an effect on children's ToM performance. Because of the nature of books containing mental states of others, shared reading has the potential to scaffold and dramatically facilitate ToM development (Adrian, Clemente and Villanueva, 2005). In fact, Adrian, Clemente and Villanueva (2005) indicate that shared reading provides strong opportunities for children to have conversations with adults which reflect on others' mental states, as book characters are regularly presented in ways that foster thought about the goals, thoughts, and emotions that shape their actions (Adrian, Clemente and Villanueva, 2005). Discussing goals, thoughts and emotions, and beliefs of others is what leads to complete ToM development in normatively developing individuals (Flavell, 2000).

Summary of Shared Reading

Shared reading potentiates development in specific domains related to print and books, encapsulated by the term *emergent literacy*. These skills set the stage for later language, reading and overall literacy, and academic development. Within the activity setting of the shared reading context, children also develop social skills and are exposed to social tools and conventions. These cultural practices and tools allow for social understanding and developing a ToM, which helps children navigate the social and academic world. Metacognitive developments, such as ToM and metastrategic

knowledge are also encouraged within the shared reading activity, as children learn to think about others' thinking and think about what they may do in a given situation.

An intervention, aimed at teaching adults to use specific strategies in the shared reading activity to enhance their children's emergent literacy skills, metacognitive development, and social skills, provides ample opportunity for investigation. Thus, the following research incorporates theoretical perspectives informing how adults and children can learn together in an effective manner while also including the cutting edge results of the shared reading literature.

Chapter 3: Method

Overview

This work proceeded in the following five phases:

- Piloting the intervention curriculum entitled, *Reading to Share*, and collecting and analyzing pilot program evaluation data.

- Refining and revising the intervention curriculum to create the final Shared Reading Intervention Curriculum based on the pilot study evaluation of the *Reading to Share* curriculum.

- Recruitment of participants for the study.

- Implementing the Shared Reading Intervention Curriculum and collecting data after participants completed the curriculum, as well as collecting the data of the control condition participants.

- Analyzing these data in reference to the research questions proposed for this study

In this chapter, **I will describe the intervention and research components of this study.** Specifically, the areas will be presented in the following order:

- Objectives of the study,
- Procedure
    - Pilot Study
    - The Study
        - Participant Recruitment
        - Participants
        - Shared Reading Intervention
            a. Process
            b. The Shared Reading Intervention Curriculum
            c. Implementation of the intervention
        2. Research, Data Collection, and Analysis
            a. Instruments (Quantitative and qualitative data and how each measures were collected and coded)
                i. Adult measures
                ii. Child measures
    i. Coding

Objectives of the Study

The main objective of the study was to assess the effects of a shared reading intervention on how adults *scaffold* their children when reading together and their adult *mind-mindedness,* the view of children as individuals with a mind (Meins, 1997; Meins, et al., 1998). I posit that mind-mindedness in interactions (in this case reading together) may enhance adults' understanding of their children's beliefs and thinking, as well as facilitating cognitive and social-emotional development in other domains.

Outcomes. The shared reading intervention curriculum focused on the following outcomes:

1. Teaching and guiding Appalachian Head Start adults in the intervention condition to scaffold and guide children's literacy, language and social development through shared reading.
2. Increase adult mind-mindedness and the use of scaffolding techniques in comparison to those who do not receive the intervention.
3. Create a qualitative shift in the way adults and children interact in the shared reading activity.
4. Determine the differences among adults' scaffolding and mind-mindedness practices and attitudes in the context of shared reading.

Procedure

Before the resulting randomized, controlled trial presented below began, several iterations of the research occurred. These will be presented in chronological order, and then the final study will be presented in its entirety. To give a more nuanced understanding of how this research has changed, and become more robust, a presentation of these iterations seems necessary. First, I pilot tested the intervention with the assistance of Head Start families in the summer of 2010 and evaluation results are

presented below. Changes were made to the initial research design after guidance given at the Head Start Research Grantees' Meeting in Washington, D.C. in November of 2010 and a brief overview of these changes and the rationale behind them is then presented.

Pilot Research

Using the procedures described in the *Reading to Share* Program Protocol, the program was piloted with a sample of seven mothers whose children were enrolled in Head Start. Evaluation research has largely used either quantitative or qualitative methods, but mixed-methods studies are an emerging paradigm for research to assist with program development and evaluation (Creswell & Clark, 2007). The pilot program evaluation was performed in a mixed methods fashion to ensure that I am capturing a complete picture of the issues to which participants are and are not responding.

 My partner at Head Start recruited seven mothers and their children for the pilot program (3 home-based, 2 combo and 2 center-based; 5 Caucasian and 2 Asian). Session 1 was delivered on April 29, 2010 and Session 2 was delivered on May 13, 2010.

The overall purpose of the pilot was to gain useful evaluation data on the content and delivery of the program, gain experience in working with these families, and to gain familiarity in working with Head Start. The evaluation data were collected in the form of questionnaires and surveys after each session. The session delivery was also videotaped for analysis and informal interviews were conducted pre, during, and post the delivery to gain an understanding of what was working for the parents and what was not.

Pilot results and findings. Participants' responses were anonymous to reduce the likelihood of social desirability bias. Participants indicated that the pilot program was well received; with six of the participants strongly agreeing (after both sessions) the

program's leader (me) was knowledgeable, organized, and presented the program well. All participants strongly agreed that they felt included in the program. Importantly, all but two responses over both sessions indicated that they strongly agreed that they could use what they learned in the program. However, there was room for improvement, as most respondents (n=6) indicated that the size of the group was too small. Additionally, mothers merely agreed that they could meet new people, but this may be because they all have children enrolled in some form of Head Start. Overall, only one participant indicated that she would "maybe" recommend the program to a friend while the rest all responded that they would definitely recommend the program to a friend.

The questionnaire's responses indicated that parents were satisfied with the program. Some of the responses are below:

"He made me get out of my comfort zone, which is a good thing"

"I liked being able to take [sic] play out what we learned so we know we understood well."

"It was very informative and has helped me at home with my child already! So I'm really glad it was available to us."

We also received suggestions for improvement, all of them focusing on recruitment and class size, which most indicated on both the questionnaire and survey was too small. Some mothers responded:

"Maybe a couple more participants would have been nice, but this is uncontrollable"

"Try to get more people"

All respondents indicated that they liked the program "very much".

Based on data collected and feedback from the pilot participants, the Shared Reading Intervention Curriculum was revised for the study.

The Study

The process of the study is presented in the section. A detailed description of partnering with Head Start and recruitment of participants, a description of the participants' demographics, the Shared Reading Curriculum and its implementation, and methods of data collection are presented below.

Participant Recruitment

In May of 2010, proposals were made to The New River Valley Community Action (NRVCA) administration, including the Executive Director, the Director of Head Start, and the Literacy Coordinator. They agreed to support the research in their Head Start locations conditioned upon the expressed support of the Head Start Policy Council.

The research proposal was presented at the Head Start Policy Council meeting in June 2010 and the Policy Council unanimously voted to support the effort. We drafted a schedule for recruiting participants with both the administration's and Policy Council's support. An important suggestion from the Head Start administration and my advisor, was to provide all classroom teachers with an overview of the program, including space and time requirements, any burden on the teachers, and a question-and-answer session to not only build trust with the school practitioners, but also to be able to form relationships with them before school started. This was accomplished through several meetings and visits to Head Start centers to connect with the faculty and staff. Because I was aware of

the already labor intensive nature of those in Early Childhood Education, as well as the knowledge that to successfully implement the curriculum I needed to have complete buy-in, I strived to minimize any additional burden on the practitioners (e.g. Teachers, Family Educators, Family Service Workers). I was largely successful in accomplishing this, however, implications for this approach will be addressed in the discussion section of this dissertation.

To provide more information and increase participation in the program, I also attended multiple parent orientation meetings to recruit families by providing a brief oral presentation on the intervention curriculum's parameters and answered any questions potential recruits might have had. In addition, a co-worker, a female research assistant, also made presentations. However, because there was a higher percentage of attendees willing to participate in the program after the female research assistant presentations, I concluded that to maximize recruitment efforts it was necessary to have this female research assistant present the program to the orientation's attendees. This decision was supported by Head Start staff, who indicated that adults with children in Head Start seemed to be much more receptive to females when being approached about working with their children. Thus, I attended the orientation meetings and answered any questions the audience had, but my research assistant gave the oral presentations to provide the maximum level of comfort for adults.

Informing and engaging Head Start practitioners. In early August of 2010, at the orientation meetings for faculty and staff at all NRVCA locations, held at the Christiansburg Head Start over the course of several days, presentations provided an overview of the program, connected to these practitioners and generated support in our

mutual goals for the Head Start families' development of cognitive and social skills. Additionally, practitioners voiced excitement and gratitude for my willingness to provide additional instruction and support to their Head Start families. Useful feedback provided by these practitioners included ensuring that meetings had refreshments and ensuring that during participants' data collection, child care would be available for the other children under the adult participant's care. In late August of 2010, I provided an introductory, informative recruitment letter (Appendix A) with an informed consent form (Appendix B) attached to each Head Start center classroom to be included with the orientation packet for parents.

      Baseline data collection. Data collection at baseline consisted of a brief re-introduction to the research and a review of the informed consent form, a short survey of the adults' reading comfort and history (see the *measures* section below for more detail) obtaining verbal assent from the children to participate and then positioning the dyad in front of the camera. Once the camera was recording and verified to be functioning properly, a mind-mindedness interview question was asked (see *measures* section) and then participants were instructed to read as they normally would and to advise me, or the research assistant collecting the data, who would be waiting outside, of when they were finished reading. Adults were then asked if they wanted to wait for their take-home DVD of the recording to be made, or if they would rather have it sent to them with the child at the end of the day. Most opted for their child to take it home with them at the end of the day, as it took about 20 minutes to transfer the session from the camera, edit it for length, render it for burning to DVD, and then burn the DVD and label it.

Participants

A total of 50 adult-child dyads from Head Start programs consented to participate in the study. I randomly assigned 25 dyads to the treatment (intervention) condition and 25 dyads to the control group. It should be noted that in order to achieve the participation of 50 adult-child dyads the study was carried over two years. Dropout from the study took two forms. The first was the most common, which is that participants signed up for the study, but then when they subsequently declined or were unreachable. A total of 104 individuals signed up to participate over the two years. I began year one with 84 individuals agreeing to participate and ended with 50 initial data collections. Of these 50, nine dropped out of the study after the initial data collection. In year two, after a total of 20 individuals signed up to participate, only nine subsequently agreed to participate and all nine stayed in the study to its completion. The lessons learned from year one were instrumental in maintaining participation in year two, and will be addressed in the Chapter 5.

Initially the adult in each dyad was to be a female, either a mother or guardian. However, many men expressed interest in participation in the study. In consultation with my advisor, an amendment to the proposal was made to include men in the study. The Virginia Tech Institution Review Board (IRB) approved this revision. Thus, to participate in the study, the adult participants were only required to have a child in their care older than three years of age and enrolled in a Head Start center in the New River Valley.

Randomization. Because of the difference between the high number of participants who agreed to be part of the project by signing and returning an informed consent form to me versus the actual number of adults who were willing to participate in even the first data

collection session, randomization into treatment and control groups was performed after I

had exhausted all avenues to get initial recordings and data collections. In 2010, 51 dyads

were filmed at baseline from four different centers. After consulting with Head Start

staff, administrators and teachers as well as my dissertation committee chair, Dr. Victoria

Fu, randomization was done at the individual level, as opposed to the center level in order

to minimize any differences between centers and the populations they serve. The

potential for contamination was discussed due to families in the same center being in both

treatment and control groups, but the risk of this was deemed less confounding than

between-center differences.

Demographics. Demographics for each participating family included the

following information:

- Ethnicity of the adult reading
- Gender of the adult reading
- Age of the adult reading
- Age of the other parent / guardian in the home (if applicable)
- Ethnicity of the other parent / guardian in the home (if applicable)
- Household income in the last 12 months
- Number of siblings in the household
- Level of education of adult reading
- Level of education of the other parent / guardian in the home

Participants enrolled in the program in year one (2010-2011) were given a

children's book as compensation. I wrote a word of thanks on the inside cover of the first

page for each participant's book. However, because participant retention was such a

challenge, participants enrolled in year two were given a DVD recording of each reading

session with their children, which seemed to help with retention. Upon completion of the

curriculum a picture book was also given to them and their children. For example, at the

end of the second data recording session, participating dyads received a DVD containing

their first two sessions, and when a dyad completed session three, they received a book,
Silly Sally, and a DVD with all three recordings on it.

Intervention scheduling. Once participants had been randomly assigned to
either the treatment or control conditions, the shared reading intervention curriculum was
delivered to the treatment condition adults. The participants assigned to the control
condition did not receive an intervention. However, after the intervention sessions in the
treatment condition were complete, control condition participants were recorded reading
on the same days as the treatment condition. Sessions were largely held in Head Start
centers before the children were released from class so that participating adults could take
their children home with them. This strategy also helped the second round of data
collection to occur immediately after the intervention curriculum delivery's completion.

I attempted to get all participants in each center to attend the sessions together,
but due to difficulty in scheduling other locations (i.e. public libraries, churches, and
community centers) were sometimes used to present the intervention in smaller groups.

Intervention Delivery

The intervention delivery proceeded in two sessions, and both are described
below. They were designed so that those who attended one of the sessions could attend
the second session with a group different than their first session, and still receive the
same curriculum.

Session 1

To have as high fidelity to the curriculum's design and delivery as possible, I was
the only individual to deliver the intervention to all participating adults in the various

locations. While the sessions were designed to be interactive and as emergent as possible, program fidelity was aided by the program's schedule and checklist (Appendix C).

Icebreaker. The first session began with an icebreaker activity designed to help the participants feel welcome and to ease their transition into the group. Adults were asked to face one another and look at each other, and then to turn their backs, change something about their appearance, and then turn back around. They were then asked what the change was. Inevitably, there was amusement among participants, and the mood of the group shifted from an expectation of a classic lecture to a more organic and seminar-esque environment.

After the icebreaker, participants were briefed, in a discussion-based format, on the overall goals of the curriculum. Adults were encouraged to begin to think about their children's thinking, and think about ways to extend thinking, learning, and social-emotional development of their children in the shared reading activity. The discussions also included participants' goals for participation in the program. These were reviewed after the first session and used to tailor the program to the needs of the participants within the framework of the curriculum.

To help participants understand the overall goals of the program, the first part of the presentation focused on the benefits of the shared reading activity's usefulness for cognitive and social-emotional development. While the techniques involved in scaffolding are important tools for participants to possess, an understanding of the benefits of reading together, and being mind-minded is the foundation for understanding the process of scaffolding. A list highlighting the benefits of reading together was provided to the parents (Appendix D) emphasizing the potential for positive child

development and motivating parents to apply the intervention's techniques and approaches in their homes.

Attention was also given to the differences between the way adults conceptualize reading and the way young children do. For example, when adults read the same children's book over and over, they tend to see it as the same exercise. However, for children, each reading is a novel experience (pun fully intended), and they can learn and pay attention to different aspects of the book, especially once the storyline has been mastered through multiple readings. Additionally, adults tend to focus on getting to the end of the book, as opposed to children who are more interested in what is happening on a page. Finally, adults are much more capable of understanding the continuity of the language of a book (e.g. alliteration, rhyme) and themes throughout the book than children are. Recognizing that reading is very different for them as adults than it is for their children primed the participants to focus on their children while reading.

Mindfulness and mind-mindedness. Once the benefits of engaging in reading were introduced to the parents, the focus shifted to the second item on the intervention agenda, reading in a mindful and mind-minded manner. I presented the topic of mind-mindedness to the parents, followed by discussion of the concept. Three video clips of adults reading with children and not demonstrating mindful or mind-minded behavior were shown to the participants. All videos were accessed from previous research in the Child Development Center for Learning and Research (CDCLR) at Virginia Tech. The participants were asked to comment on what they had observed. Participants were asked to emphasize their ideas about what could have been done differently. After the discussion, three video examples of more mindful and mind-minded interactions were

presented and discussed. While these videos included specific scaffolding techniques, the focus here was on the use of metacognitive processes of assessing the child's mind and recognizing potential for development as being in a creative mindset. The group was asked to think about the possible results of children reading a book with an adult. Because the program's goals are larger than mere literacy, attention to children's responses to the book and ways to creatively respond were emphasized. Some more video clips of adults reading with children were then presented to the participants to provide material for discussion. To introduce the idea of mindful and mind-minded assessment of the children's mental processes, participants were asked to creatively discuss what a child could be thinking about in these video clips. The first session put heavy emphasis on adults creatively engaging with their children.

The intervention also included handouts outlining the main concepts while also providing the parents with an opportunity to take notes (Appendix E). Additional information to connect adult participants to additional resources was also provided in the packet of information each adult participant received.

Questioning. Because questioning is one of the most salient and easily understandable scaffolding techniques, questioning was presented as the first scaffolding / guided participation technique. Questioning provides a subtle, yet powerful means of assisting children's performance and development in the ZPD. Questions explicitly required both cognitive and linguistic responses.

Participants were taught to recognize and differentiate *assessment questions* and *assistance questions*. Assessment questions are useful as a means of determining a child's location in the ZPD and are fruitful when used as a means for subsequent assistance

through questioning. An assessment question is used to determine at which level the child's current thinking resides. Often these are close-ended questions such as, "Do you know what this is?" or, "Do you understand?" and do not require the child to engage in novel cognitive operations. However, they are still quite useful for determining the child's ZPD and when used in combination with assistance questions are important scaffolding behaviors.

Assistance questions require children to perform mental operations that they would not otherwise have produced (Gallimore & Tharp, 1990). For example, if a child is asked, "What is that character thinking?," the child's mental process requires new mental operations to answer the question. Moreover, such a question asks the child to think about another's mental state, thus fostering the development of perspective-taking and social-emotional development and understanding.

After presenting the scaffolding technique of questioning, adults were given a chance to practice this skill in dyadic role-playing interactions in which the pairs switch from playing the child to playing the adult while reading together. Because two of the participating adults indicated that they could not read well, I partnered with them myself and encouraged them to just ask questions about the pictures, thereby allowing them to participate with maximum comfort. I then visited each pair as they were role-playing and provided encouragement and feedback to the participants. As a group, participants were then asked to think about the following questions:

1) What could the child be thinking about when looking at the book?

2) What do I need to find out from the child about her thinking (assessment question formulation)?

3) What is an appropriate follow-up question (assistance question) given what I now know about the child's thinking?

Modeling. Modeling is "the process of offering behavior for imitation" (Gallimore & Tharp, 1990, p. 178). Modeling is a natural and powerful way of assisting performance, and of particular relevance in educational settings (Gallimore & Tharp, 1990). Parents need to be aware of their constant modeling of appropriate social interactions. Participants were encouraged to model positive reading and social behaviors during the intervention sessions and when reading with their children at home.

This intervention focused on the use of modeling as a method of engaging the child's interest and forming intersubjectivity about what will happen when reading together. Participants were encouraged to use exaggerated gestures and vocal inflections, including changing their voice's pitch and tone to engage their children when reading. Because of concerns for the participants being self-conscious, I provided demonstrations of all manners of modeling in this way (e.g. holding hands up as moose antlers, making silly voices, making throwing motions to mimic the illustrations in the book). I readily made a fool of myself to encourage the adults to be as silly as they wanted. I wanted them to feel comfortable being silly with their children. Participants were then asked to practice modeling in their dyads, again switching roles between being the adult or child, in combination with questioning. This was done to encourage understanding that these techniques can and should be used in conjunction with each other, and to encourage them not to rely on any single scaffolding strategy.

Wrap Up. The sessions concluded with a wrap-up and summary of what was presented to the participants, with participants given ample opportunity to ask questions

and practice their skills. I encouraged participants to review the provided materials and complete "homework assignments" in the form of practicing the approaches and techniques at home. Adults were encouraged to use at least one scaffolding strategy per page at a minimum. Finally, adults were strongly encouraged to review the content of their packets to remind them of the goals of the intervention, including a mindful and mind-minded approach to reading, again emphasizing creatively responding to the child through their questions and modeling, especially using modeling in varying fashions to maintain active-child interest in the shared reading activity.

Session 2

The second sessions consisted of a review of the previous session's content and a review of participants' experiences with employing a mind-minded approach and scaffolding their children in the shared reading activity.

Review of previous content. Second sessions began with the icebreaker and then pairing off and reading with each other using the techniques from the previous session. I then provided measured feedback and encouragement to the participants. I made sure to remain positive and offer praise in public and criticism in private. Participants reviewed the previous session's goals and techniques. Adults were asked to partner again, but with a different person in the group to allow for different perspectives and feedback, as well as improving group cohesion.

A constant goal of the intervention was encouraging the participants to be mindful and mind-minded, especially being creative in responding to their child's thinking. The second session's presentation (after the icebreaker) began by reemphasizing these concepts and their utility in the shared reading activity. Because of the centrality of these

concepts, the scaffolding techniques of *instructing, contingency management*, *cognitive structuring* and *feedback* were all presented within this framework.

       Instruction. Instruction is the most ever-present means of assisting performance and scaffolding. However, Gallimore and Tharp (1990) note that it is rare to see instruction used to assist the performance of the next required act to move through the ZPD. Instruction can be misused if the adult does not consider the context and cognitive needs of the child. Additionally, mentors can only be expected to assist performance via instruction if they take responsibility for the student's learning. Because participating adults are invested in their children's success, instructing can be an excellent tool to help them learn to effectively scaffold their children's development through mindful and mind-minded instructing. Vygotsky's (1978) emphasis on the transition from interpersonal to intrapersonal speech is perhaps best exemplified by instructing. The instructing voice of a mentor becomes the self-instructing voice of the child in the transition from novice to expert (Gallimore & Tharp, 1990).

       Once this concept was presented, the participants were encouraged to instruct with an emphasis on instructing in ways that encourage the child. The tone of their voices was also emphasized, as Vygotsky's theory of the intra-mental transition mentioned above requires that mentors remember to use a kind voice in instructing their children so as to set the stage for their future intra-mental dialog.

       Feedback. Feedback to a learner regarding performance can be a powerful means of assistance. Beginning the presentation of feedback in the session required an introduction to the importance of feedback and then establishing the difference between simple praise and actual feedback.

Feedback alone can lead a learner to considerable improvement in performance on subsequent efforts. "Providing for feedback is the most common and single most effective means of self-assistance" (p. 180). However, feedback must be relative to a standard, because providing performance information is not feedback unless it is relative to this standard (Gallimore & Tharp, 1990). For example, commenting on a student's performance by saying, "good job" is not actually feedback. Comments of, "You did a good job. You used to struggle with that." Or, "That's better than you did last time" are considered appropriate feedback. This way, the child learns about performing well relative to previous experience or an established standard. As children move through the educational system, they will receive feedback in the form of grades, which are relative to a standard (A, B+, C, etc.). If we view the goal of human development as making meaning of things, feedback can assist with this tremendously. The difference between, "You did a good job" and "You did a good job, *because*" cannot be understated in this context.

Participants in the session were encouraged to provide feedback to each other as they practiced reading a book, keeping in mind the importance of all scaffolding and guiding development. With each practice period, I encouraged the attendees to include all previous scaffolding elements to ensure retention of previous information and further demonstrate the utility of any of them when the opportunity presents itself.

Contingency management. Contingency management is scaffolding by arranging rewards and punishments according to behavior, and the desirability of the behavior. There is emphasis in Gallimore and Tharp's (1990) perspective that this is not operant conditioning, and that other theoretical perspectives can explain contingency

management. While effective in some domains, particularly when rewarding, praising and encouraging, contingency management cannot elicit novel behaviors, other means of assisted performance and scaffolding must be used (Gallimore & Tharp, 1990). The purpose of contingency management in this context is to keep the child focused on the activity. Adults were encouraged to adhere to a system of rewarding children for positive engagement during the shared reading activity. Of particular interest is managing the contingencies associated with distraction, especially refocusing the attention of the child back to the book when distractions occur. I encouraged the participants to not command their children to behave, but to give them encouragement to come back to reading. Additionally, I demonstrated how exclaiming, "Wow! Look at that, I wonder what…" while looking at the book intently, would do for refocusing attention and managing the distraction through demonstrating the desirability of coming back to reading.

Cognitive structuring. Cognitive structuring occurs when an adult provides a framework for thinking and acting. There are two types of cognitive structuring, Type I, structures for explanation; and Type II, structures for cognitive activity (Gallimore & Tharp, 1990, p. 182). Type I structures operate on an explanatory level to help a child understand the basics of a situation, and thus allow them to be creative within the structure. Type II structures provide frameworks for learning in a more general sense than Type I's specificity (Gallimore & Tharp, 1990).

Examples of cognitive structuring include statements such as, "This is the way we can think about a story. It has pictures, things happen, and we learn about them". This way of scaffolding provides a mental structure to a child and helps her make sense of what she is going to read. Other ways of providing cognitive structures include talking

with a child about how *she* thinks about something and then helping her reframe it in a more sophisticated manner. This technique may be hard to master, but when presented in the mind-minded and mindful context, adults may be able to think about what a child is thinking and help them frame it differently.

Participants were encouraged to provide cognitive structures to their children by giving them things to think about. Suggestions for practicing this strategy included helping the child think about connecting what happens at the beginning of the book to how the book ends, and encouraging the child to pay attention to the characters in a book and how the author presents their similarities and differences.

Wrap up. The sessions concluded with a wrap-up and summary of the goals and content of the intervention. Additionally, participants were encouraged to read as often as possible. Because adults often have a reliable schedule of reading to their children before bed, they were encouraged to consult the provided materials to refresh their memories of the different strategies before they read with their children.

Second data collection. Immediately following the conclusion of the program, participants were again videotaped answering the mind-mindedness interview question and then reading with their children. Because the material was fresh in the minds of participants, this seemed to be the optimal time to collect the first post-intervention wave of data. Control group data collection also occurred immediately before and after this time to minimize any differences due to data collection time.

Final data collections. Approximately one month after the intervention, the third wave of data from both control and treatment groups were collected. Data collection was a recording of the mind-mindedness interview and the shared reading activity.

Measures

The following are quantitative measures used in statistical analyses to assess the effects of the intervention. However, qualitative analysis was also conducted using videotaped interactions and will be addressed in Chapter 4.

Adult Measures

Adult measures consisted of demographic information, a reading questionnaire, mind-mindedness interviews and observational coding of the shared reading videotaped interactions.

Reading history and comfort survey. A brief survey of reading comfort and importance to the participant and family of origin was completed at baseline. This survey was adapted from the literature to provide a quick and simple measure of attitudes about reading. I offered to read the questions to any participant who preferred this method of answering the survey. Research assistants entered data into a spreadsheet. See Table 6 for the survey items and response categories.

Mind-mindedness. At the beginning of each recording session, adults were interviewed to assess their mind-mindedness. Responses were coded by researchers blind to the intervention condition and trained to code responses to the question, "Describe your child for me" into the following ordinal scale:

Mental: Any reference to the child's mental life, in terms of his/her will, mind, intellect, metacognition, imagination; any comments relating to desires, wishes, and emotion. This category did *not* include references that were merely comments

on the child's likes and dislikes or behavioral tendencies, such as "he loves

playing games."

Behavioral: Any reference to behavior, such as games and activities enjoyed by

the child or interactions with others on a behavioral level. The following

characteristics mentioned by the mothers were also included in this category,

since they may be interpreted in a purely non-mentalistic fashion: *lively, talkative,*

boisterous, aggressive, passive, friendly, restrained, outgoing, naughty.

Physical: Any physical attributes, the child's age, and descriptions relating to the

child's position in the family.

General: Any descriptions that did not fit into the above categories. (Meins,

1997).

Observational coding. Videotaped shared reading interactions were coded by

researchers blind to the intervention condition and based on an adapted version of a

shared reading coding protocol developed by Fu, Wiles, and Milne (2007). Inter-rater

reliability for this coding protocol (Cohen's $\kappa = .80-.85$) was well within the acceptable

range ($>.70$) for such an instrument. Additionally, coding discrepancies were cataloged

and coders would meet together to come to consensus. Weekly meetings were held to

assist with resolution of discrepancies and spot checks were conducted to ensure validity

across multiple coders. Coding included the following categories:

- Open Ended Questioning

- Closed Ended Questioning

- Commenting

- Explaining / Instructing

- Contingency Management

- Enhancing Engagement

- Prompting / Scaffolding Not Otherwise Specified (NOS)

*See the Independent Variables section below for the operational definitions of these variables

Child Measures

Measures of each child's performance on standardized measures were conducted at the NRVCAA Head Start Centers. These include the Phonological Awareness Literacy Screening (PALS) and the Child Observation Record (COR).

PALS. The PALS measures: name writing, alphabet knowledge, beginning sound awareness, print and word awareness, rhyme awareness; and nursery rhyme awareness. However, due to unforeseen circumstances, many of these data were lost due to the NRVCAA's move to new offices and the destruction of these scores.

COR. The COR assess six distinct dimensions of preschool classroom functioning: initiative, social relations, creative representation, music and movement, language and literacy, and logic and mathematics. Because the focus of this research is on language and literacy, I focused on the results of this subscale, however, models incorporating other theoretically relevant items and scales were tested. See Appendix F

for the COR items and subscales.

The research questions are as follows:

RQ$_1$: Do adults' descriptions of their children as mental beings and perceptions about their children as individuals with minds of their own change due to participation in the intervention condition as compared to those in the control condition?

RQ$_2$: What are the effects of this intervention on adults' use of scaffolding and guided participation strategies in the shared reading activity over time?

RQ$_3$: Does participation in the intervention condition affect the child's outcomes on standardized tests?

RQ$_4$: What qualitative differences in the way adults and children interact in the shared reading activity can occur as a result of the intervention?

Hypothesis 1. Adults who receive the intervention will refer to their children in more mind-minded terms than those adults who did not receive the intervention.

Hypothesis 2. Adults' use of scaffolding and guided participation strategies as measured by observational coding will increase within the individual and between treatment groups as a result of the intervention.

Hypothesis 3. Children who participated in the intervention with their adult reading partner will score higher on standardized tests relative to their peers who were in the control condition.

Hypothesis 4. We can identify qualitative shifts in the approach adults take to shared

reading over time, and identify themes and categories representing these shifts

through a modified induction analysis.

Analyses

Mind-mindedness change over time. The first dependent variable is the change

in mind-mindedness over time. Using a mixed-effect Hierarchical Linear Model (HLM),

mental descriptions of the participating children by the participating adults are used as the

first dependent variable.

Scaffolding and guided participation changes over time. Scaffolding and

Guided Participation changes over time will be assessed in a mixed-effect HLM. These

changes include quantitative data collected through observational coding of the

videotaped interactions between the adults and children as per Fu, Wiles, and Milne

(2007).

Child Observation Record changes over time. Changes in the child's Child

Observation Record scores over time were used as an outcome to assess whether the adult

participants' mind-mindedness, scaffolding, and guided participation contributed to

measurable changes on standardized scores for the participating child. Mixed-effect

Hierarchical Linear Models were also used to assess these changes. See Appendix F for

the list of scales and items collected in the COR**.**

Dependent Variables

Questioning. Questioning was coded when the adult asked a direct question to

the child and expected an answer. If several questions were asked in a row, without the

child having an opportunity to respond, only the final question posed, with an opportunity

for the child to answer was coded as a question. Rhetorical questions were not coded as questions, as although they are posed as questions, the effect is the same as making a statement.

Open-ended questioning. The number of open-ended questions asked by the adult. Open-ended questions are defined as those that are neither rhetorical, nor to which the answer to the question is selected from a list. An open-ended question requires the answerer to undergo a more thorough cognitive process than selecting from only a list of possibilities. For example, "What is this character thinking?" is an open-ended question.

Close-ended questioning. The number of close-ended questions asked by the adult. Close-ended questions are those in which the response can be selected from a list. These questions, while requiring a response, are less demanding on the responder but are still useful in assessing knowledge.

Commenting. Commenting while reading was coded as an adult offering responses to the child, but not offering instruction. However, commenting can be a useful metric to track the level of engagement with the child beyond merely reading the words in the book.

Explaining/Instructing. Adults' use of explanation or instruction in the shared reading activity was coded to operationalize the scaffolding strategy of instruction. Adult use of explanation or instruction was coded at each instruction or explanation using existing knowledge or observations.

Contingency management. Contingency management was coded as the adult offering rewards to help the child stay on-task in the reading activity. Negative rewards (i.e. taking away something positive) and positive punishments (i.e. punitive results due

to action) were not coded, as the focus of this study is on scaffolding using positive rewards. Contingency management was often coded when adults would redirect the attention of the child back to the book in a positive manner.

   Enhancing engagement/modeling. While we recognize that modeling is always present through offering behavior for imitation, the category of enhancing engagement / modeling was coded to include the adults' use of their voice through changes in their tone or pitch to enhance child interest. Modeling through gesturing and physical motion was included in this category as well.

   Prompting/scaffolding not otherwise specified. This category was used as a catch-all so that any prompting or scaffolding that we could not capture adequately in the previous list could be included. Prompting / Scaffolding NOS was also used to identify potential locations for qualitative analysis to further refine the coding instrument.

Reading Survey Results

   The reading survey's results will be included as follows:

Comfort with reading. This is a seven-point ordinal Likert scale on which participants indicated their current level of reading comfort.

Level of education of the adult reading. The self-reported level of education on a nine-point scale from less than 8th grade to a doctorate.

Number of books in the home. A six-point ordinal scale indicating the number of book in the home with choices ranging from less than 10 to more than 100.

Importance of reading. Importance of reading was captured in three different domains on a seven-point Likert scale on each of these questions. First, the participants indicated the importance of reading to them. Second, they indicated the importance of reading to

their entire family, including their extended families. Third, they indicated the

importance of reading to their family of origin.

Additional Covariates

Variables to be used as covariates to examine Level 1 differences among

participants, and the type of variable are listed below:

- Ethnicity of the adult reading (categorical)
- Gender of the adult reading (categorical)
- Age of the adult reading (continuous)
- Age other parent / guardian in the home (continuous)
- Ethnicity of the other parent / guardian in the home (categorical)
- Household income in the last 12 months (ordinal)
- Number of siblings in the household (continuous)
- Level of education of adult reading (ordinal)
- Level of education of the other parent / guardian in the home (ordinal)

"Let my inspiration flow, in token rhyme, suggesting rhythm, that will not forsake me till my tale is told and done" - Robert Hunter

Chapter 4: Results and Findings

In this chapter I am presenting the results of both quantitative and qualitative analyses of the data. First, quantitative analyses will be presented in three sections: (a) description of the participants; (b) results of the observational coding analysis, using repeated measures in Hierarchical Linear Model (HLM's), or Multi-level Models (MLM's); and (c) analyses of the Child Observation Record outcomes.

Second, qualitative findings will be presented. These data were analyzed and are presented in chronological order, comparing findings across wave one, wave two and wave three. Also included are overall findings regarding qualitative changes over time.

Participant Demographics

A total of 50 adult-child dyads participated in the study, with 25 dyads in the treatment condition and 25 in the control group. 80% (n=40) of participants were white with the remaining 16% (n=8) African American and 4% Asian. 96% (n=48) of participants spoke only English in their homes, with Chinese and Korean accounting for the remaining 4% (n=2). See Tables 1-5 for demographic data.

Women accounted for 90% of the adult participants (n=45). Male children made up 56% (n=28) of the child participants. For a matrix of Adult-child pairs, see Table 1.

Table 1

Adult-child Gender Pairs

Adult	*Child*	*Treatment*	*Control*	*Total*
Men	**Boy**	2	0	2
	Girl	1	2	3
Women	**Boy**	14	12	26
	Girl	8	11	19
Totals		25	25	50

Participants answered a multi-item questionnaire administered and verified by Head Start as part of their eligibility requirements. "*Adult*" refers to the parent, guardian, or grandparent who participated in this research with the child enrolled in Head Start.

Demographic measures did not reveal any statistically significant differences ($p <$ .05) between treatment and control conditions. For a complete list of these variables, see Appendix G. Because no significant differences were found on any of the demographic variables between treatment and control conditions, HLM were conducted without directly controlling for differences in these variables.

Tables 2 through 5 provide an overview of the participants' means of demographic measures, including educational attainment, household income, child and adult ages, and household structure.

Table 2

Adults' Educational Attainment by Condition

	Treatment (n=25)	Percent of Treatment	Control (n=24)	Percent of Control	Total Number	Total Percent
No Diploma or GED	3	12%	2	8%	5	10
H.S. Degree or GED	8	32%	7	29%	15	31
Some Post-High School Training / Education	11	44%	12	50%	23	47
College Degree	3	12%	3	12%	6	12
Missing	0	–	1	-	1	

Table 3

Participant Annual Household Income by Condition

Income	Treatment (n=25)	Control (n=25)	Total (n=50)
$0-$10,830	10	9	19
$10,831-$14570	2	10	12
$14,571-$18310	3	1	4
$18311-$22050	2	2	4
$22051-$25790	2	0	2
$25791-$29530	2	1	3
$29531-$33270	3	0	3
$33271-$37010	1	0	1
$>37010	0	2	2

Table 4

Adult and Child Participant Mean Ages by Condition

Age	Treatment (n=25)			Control (n=25)			All (n=50)	
	Mean	SD	Range	Mean	SD	Range	Mean	SD
Adult's Age (years)	31	6.3	21-79	34	9.8	22-80	33	8.3
Child's Age (years)	3.63	.43	2.9-4.6	3.70	.53	2.5-4.7	3.67	.48

Table 5

Number of Siblings and Others living in the Homes of Participants

Household Characteristics	Treatment		Control	
	Mean	SD	Mean	SD
Siblings of Participating Child	1.4	1.3	.92	.95
Number of Others in Home	1.7	1.4	1.0	.93

Reading Attitudes and Practices Survey

Participants were given a reading survey at the start of the study to ascertain their

reading attitudes and practices. Means and standard deviations of the responses on this

instrument for both treatment and control conditions are presented in Table 6.

Table 6

Survey of Reading Attitudes and Practices

Survey Responses	*Treatment*		*Control*	
	Mean	SD	Mean	SD
Level of Comfort	5.92	1.38	5.52	1.29
Number of Books	3.88	1.67	3.96	1.74
Importance of Reading to You	6.96	0.73	6.64	0.64
Importance of Reading to your Family	6.76	0.60	6.24	1.16
Importance of Reading to your Family of origin	4.76	2.40	4.12	2.52

*p <.05

Observational Coding Analyses

  Preliminary analyses. The data were restructured to meet the requirements of

JMP (2000) to run Hierarchical Linear Models (HLM), which restructured them to a

format with each participant having three rows of data, whereas, the initial structure was

the typical structure of each participant having a row of data, which included each

measurement. For more information on data restructuring see Bauer and Curran (2005).

  Initial data analyses for all variables included plots of the distributions of each

variable, using JMP (2000), with means, standard deviations, standard errors of the mean,

and tests of skewness and kurtosis. Additionally, data were checked for sphericity, which

is the equality of the variances between levels of the repeated measures, and

homoscedasticity, which is that the variance at all levels of independent variables is the

same. All data satisfied the sphericity requirement, however, several of the variables were

found to have heteroscedasticity in their measurements. Data were transformed by taking

the square root of the variable, thus reducing variance of measurements that contributed

the most leverage to the heteroscedastic condition. For the sake of continuity, all data

underwent transformation and this contributed to achieving constant normality as well.

  Statistical models. A series of Hierarchical Linear Models were fitted with each

observational coding variable as the dependent variable to test for the main effects of

experimental Condition and Time, and the interaction of Condition and Time. These

variables were entered into the model at Level 2 (between-subjects) as fixed effects. The

effect of person (ID) was entered as a Level 1 (within-subjects) random variable. The

random effects were estimated using Restricted Maximum Likelihood (REML)

estimation, which is the preferred maximum likelihood estimation method (Raudenbush

& Byrk, 2002).

The Multi-Level Model equation for these models is below:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}W_j + \gamma_{02}W_k + (\gamma_{01}W_j * \gamma_{02}W_k) + u_{0j}$$
$$\beta_{1j} = \gamma_{10} + u_{1j}$$

- γ_{00} refers to the overall intercept. This is the grand mean of the scores on the dependent variable across all the groups when all the predictors are equal to 0.
- W_j refers to the first Level 2 predictor (Time)
- W_k refers to the second Level 2 predictor (Condition)
- γ_{01} refers to the overall regression coefficient, or the slope, between the first dependent variable and the Level 2 predictor.
- γ_{02} refers to the overall regression coefficient, or the slope, between the second dependent variable and the Level 2 predictor.
- u_{0j} refers to the random error component for the deviation of the intercept of a group from the overall intercept.
- γ_{10} refers to the overall regression coefficient, or the slope, between the dependent variable and the Level 1 predictor (ID)
- u_{1j} refers to the error component for the slope (meaning the deviation of the group slopes from the overall slope).
- $(\gamma_{01}W_j * \gamma_{02}W_k)$ refers to the interaction of Level 2 predictors of Time and Condition.

Note: Equation notation adapted from Raudenbush & Bryk (2002)

This analytical method was selected because it provides the ability to disaggregate the effects of within-person factors from between-person factors, when using a repeated-measures design. Intense study of different analytic methods, conversations with experts in the field of applied statistical analysis, and an extensive literature review led to my

settling on the HLM being the most effective technique for analyzing this data (for more on selecting the HLM for longitudinal data, see Bauer, Gottfredson, Dean & Zucker, 2012; Curran & Bauer, 2011; Hedeker & Gibbons, 2006; and Singer & Willett, 2003).

Because we are interested in the omnibus tests of significance in the overall HLM, to identify which of the variables are statistically significant across conditions, time, or an interaction of group and time, the transformed data were entered into the model. However, parameter estimates resulting from these analyses will not be easily interpretable, but to make use of the data and improve our confidence in the parameter estimates, I applied the bootstrapping procedure.

Bootstrapping. Preacher, Rucker, and Hayes (2007) recommend using bootstrapping whenever possible, and my colleagues at the Virginia Tech Laboratory for Interdisciplinary Statistical Analysis advocate for this approach as well. In the following section, I present a cursory explanation of the bootstrapping procedure I used in this work, as well as the advantages this procedure provides.

Due to the data being a true ratio scale, the measurements actually mean something in the real world (i.e. a score of 3 means that there were three instances of a variable), and thus inferences about the raw data are necessary. To do this, I back-transformed the estimates made about the data transformed through a square root. Thus, a squaring of the estimates is necessary.

Historically, this has been done using an approximation technique like the delta method, but because of the tremendous computing power we have at our disposal, I used a bootstrap analysis. The bootstrap analysis is a re-sampling procedure used to generate the sampling distribution, providing estimates of the mean, standard error, and confidence

intervals for each of the contrasts. Each time we run a bootstrap sample, we get a random draw from the sampling distribution. I did this 5,000 times, and got 5,000 draws from the distribution and a histogram of these draws approximates the sampling distribution. A transformation of these 5,000 draws, which will first be in terms of square roots, provides the sampling distribution of the transformed values, which is what I needed to achieve to properly make useful contrasts. For more information about bootstrapping, see Preacher, Rucker & Hayes (2007).

Because we are interested in interpreting the effects of the intervention in terms of the real world units of the measures, I present the model results (fixed and random effects), and then a series of contrasts to make interpretation in the actual units of the data (e.g. number of Open-ended questions, number of times adults enhanced engagement with their voices) through a series of contrasts which will be presented for each analysis. To interpret the tables displaying the contrasts, Confidence Intervals (CI's) will be provided. If the CI's include zero, then we have confidence at either the $p < 0.01$ (denoted by **, or $p < 0.05$ levels denoted by *) that the variables in the contrast are not significantly different from one another. This notation will be used throughout the Results section.

Mind-mindedness

Mind-mindedness was analyzed using only data coded as the adult referencing the mental attributes of the child in the mind-mindedness interviews. Sums of the number of mental descriptions at each time point, for each participant were recorded. See Meins and Fernyhough, 2010 for the Mind-mindedness coding manual.

Table 7 below contains mind-mindedness means at each time, and changes in means between all time combinations.

Table 7

Mind-mindedness Means and Mean Change across Time

Time	*Treatment*		*Control*	
	Mean	**Mean Change**	**Mean**	**Mean Change**
Time 1	0.52	-	0.52	-
Time 2	1.92	1.40	0.60	0.08
Time 3	3.08	1.16	0.88	0.28
Time 1 - Time 3	0.52-3.08	2.56	0.52-0.88	0.36

Figure 2 below plots the means for each Condition at each Time.
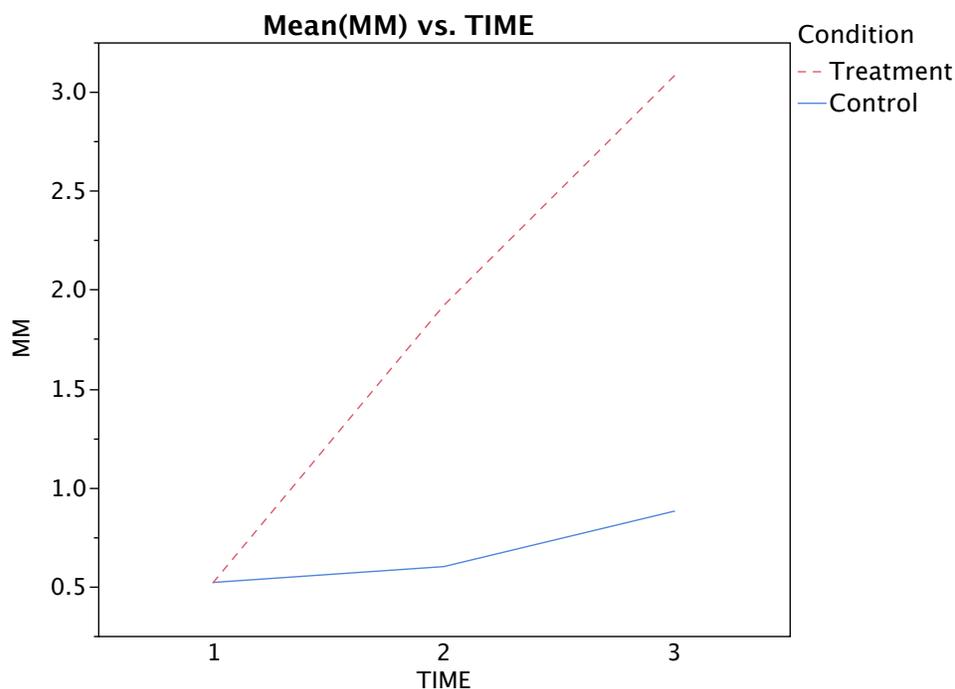
Figure 2. Mind-mindedness means by Condition and Time

To provide a visual representation of the data, Figure 3 below plots the mind-mindedness data points and lines for each participant at each time point.
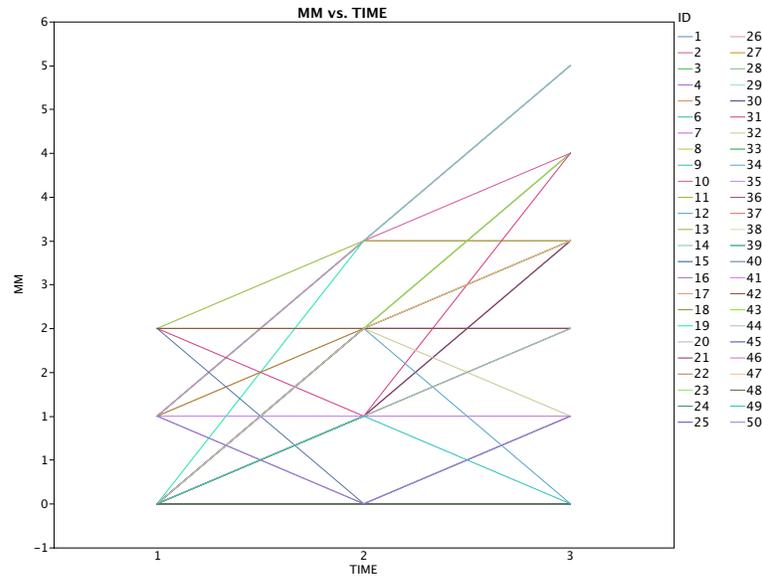
Figure 3. Mind-mindedness responses for each participant

Given these data, a MLM with Level 2 fixed effects of *Condition* (whether they received the intervention or not) and *Time* (Time 1, 2, and 3) was computed. The fixed effects model also included tests of the interaction of Time with Condition (Time*Condition). Note that I expect a Condition effect at Times 2 and 3 but not Time 1 due to Time 1 measurements occurring before the intervention was delivered.

Level 1 random (within-person) effects were included in the model to account for errors (beyond residual errors) by using each individual as his or her own comparison. This accounts for individual level variance, while not contributing error to the fixed effects in the model.

Table 8

Summary of Model Fit for Mind-mindedness

RSquare	0.80634
RSquare Adj	0.799616
Root Mean Square Error	0.68252
Mean of Response	1.253333
Observations (or Sum Wgts)	150

Table 9

Omnibus Tests of Fixed and Random (REML) Effects for Mind-mindedness

Fixed Effect	*Nparm*	*DF*	*DFDen*	*F Ratio*	*Prob > F*		
TIME	2	2	96	57.2021	<.0001*		
Condition	1	1	48	30.1910	<.0001*		
Condition*TIME	2	2	96	32.9016	<.0001*		
Random Effect	*Var Ratio*	*Var Component*	*Std Error*	*95% Lower*	*95% Upper*	*Pct of Total*	
ID*	0.8902803	0.4147222	0.1184897	**0.182486***	**0.646957***	47.098	
Residual		0.4658333	0.0672373	0.3577598	0.6317917	52.902	
Total		0.8805556	0.1246867	0.6794368	1.1868626	100.000	

* *p* <.05

The overall effect size $(R^2 = 0.81)$ indicates a good fit for the model. The fixed effects omnibus test indicates that there are significant differences across Time, between Conditions, and that differences in the number of mental descriptions of the children participating in the study are moderated by Condition and Time, as tested by the interaction of Condition and Time being statistically significant. Finally, the random effects test's significance indicates that incorporating the random effect of within-individual variance in the model is appropriate, and allows us to account for this individual level variance in our parameter estimates.

Table 10

Mind-mindedness Contrasts Within Condition by Time, and Between Conditions by Time.

			99% CI	
Test	Mean	SE	LL	UL
Cntrl T2-T1	0.07363187	0.1373781	-0.2675227	0.4657571
Cntrl T3-T2	0.17975065	0.1477490	-0.1646279	0.6221910
Cntrl.Quad	0.10611878	0.2369113	-0.5704743	0.7346514
Treat T2-T1	**1.50672961****	**0.2044384****	**0.9633925****	**1.9695021****
Treat T3-T2	**1.16376962**	**0.1866648****	**0.6781050****	**1.6261445****
Treat Quad	-0.34295999	0.2712500	-1.0168423	0.3795039
Treat T32 - T1	**2.08861442****	**0.2281165****	**1.4636068****	**2.6037586****
T/CTime1	0.02046874	0.1463149	-0.3787926	0.4380365
T/C.Time2	**1.45356648****	**0.2632117****	**0.7142324****	**2.0571582****
T/C.Time3	**2.43758545****	**0.3486603****	**1.4571236****	**3.2793076****

** $p < .01$

Scaffolding

Scaffolding behaviors, coded by independent researchers blind to the experimental condition coded the number of scaffolding behaviors in the following categories at three time points: Open-ended questions, close-ended questions, commenting, explaining, prompting or scaffolding not otherwise specified, and enhancing engagement.

Open-ended questions.   First, the Open-ended questions variable was explored. The means and mean change calculations are provided in Table 11.

Table 11

Open-ended Questions Means and Mean Change by Condition

Time	Treatment		Control	
	Mean	**Mean Change**	**Mean**	**Mean Change**
T1	1.76	-	2.36	-
T2	9.24	7.48	2.56	0.20
T3	12.48	3.24	2.68	0.12
T1-T3	1.76-12.48	10.72	2.36-2.68	0.32

Given these data, a mixed Multi-Level Model with fixed effects of Condition and Time, and the interaction of Condition with Time on the number of open-ended questions at level one and random effects accounting for within-subject effects at level two were performed to assess and account for the intra-individual and between group changes over time.

Figure 4 below displays the means for both conditions at each Time.
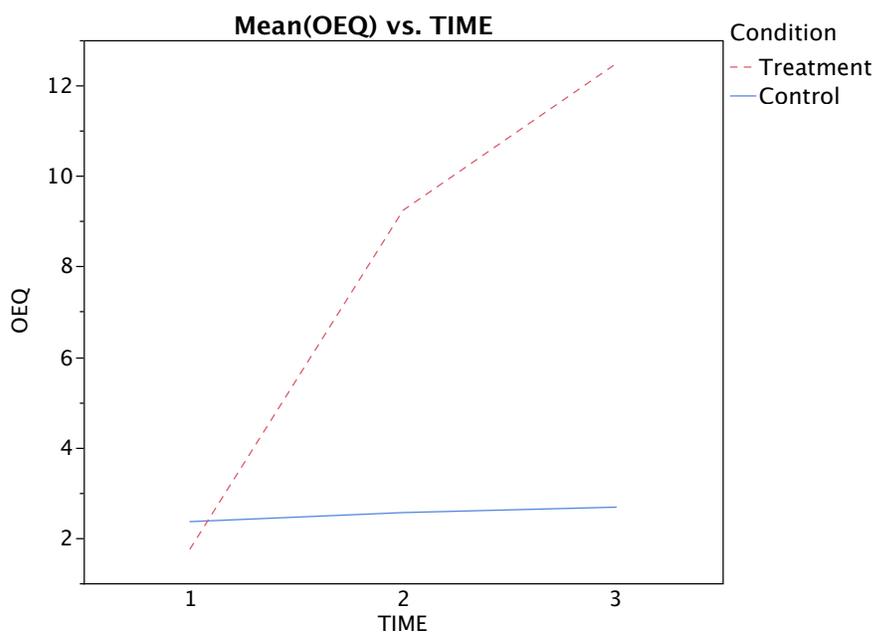
Figure 4. Open-ended Questions means by Condition and Time

To provide a visual representation of the data, Figure 5 below plots the data points and lines for each participant at each time point.
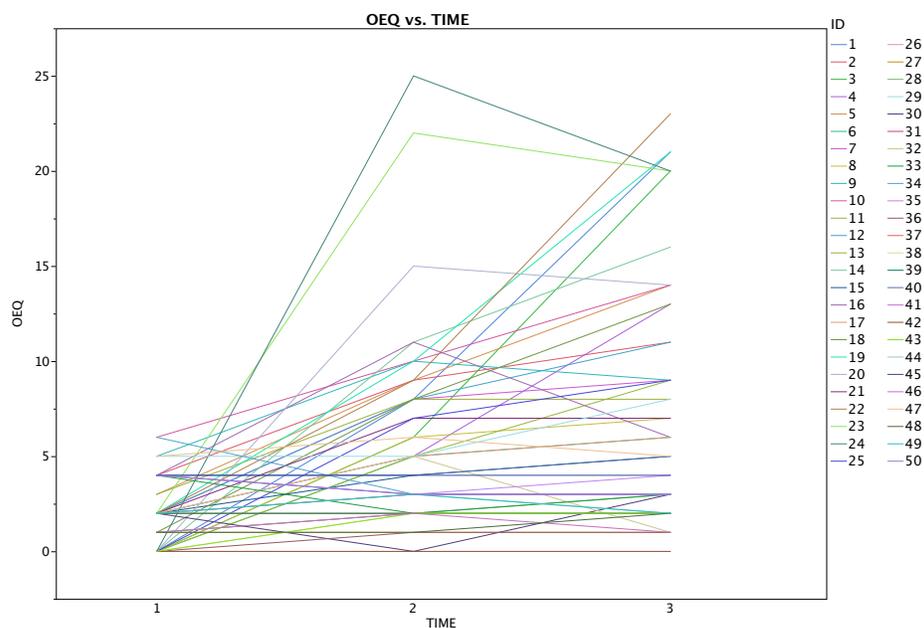

Figure 5. Open-ended questions responses for each participant.

Tables 12 and 13 display the Summary of Fit and the fixed and random effects omnibus tests, respectively.

Table 12

Summary of Model Fit for Open-ended Questions

RSquare	0.788005
RSquare Adj	0.780644
Root Mean Square Error	0.592645
Mean of Response	1.972724
Observations (or Sum Wgts)	150

Table 13

Fixed and Random (REML) Effects Omnibus Tests for Open-ended Questions

Fixed Effect	Nparm	DF	DFDen	F Ratio	Prob > F

Fixed Effect	Nparm	DF	DFDen	F Ratio	Prob > F
Conditon	1	1	48	47.2402	**<.0001***
TIME	2	2	96	67.3710	**<.0001***
Conditon*TIME	2	2	96	49.0221	**<.0001***

Random Effect	Var Ratio	Var Component	Std Error	95% Lower	95% Upper	Pct of Total
ID*	0.4416804	0.1551307	0.0580768	**0.041302***	**0.268959***	30.636
Residual		0.3512283	0.0506954	0.2697432	0.4763573	69.364
Total		0.506359	0.0650353	0.3996599	0.6625683	100.000

* $p <.05$

The overall effect size ($R^2 = 0.788$) indicates a good fit for the model. The fixed

effects components of the model indicate that there are significant differences across

time, and across Condition (Treatment and Control) in the number of open-ended

questions asked by the adult readers in the different conditions.

However, with the significant interaction of Condition and Time on the number of

open-ended questions, precise parameter estimates of the number of open-ended

questions at any time are aided by providing contrasts, as the number of open-ended

questions is moderated by Condition and Time.

The random effects estimate in Table 13 indicates that there is significant variance

within-subjects ($p <0.05$) thus incorporating the random effect in the model is

appropriate, and allows us to account for individual level variance. The contrasts for the

fixed effects are provided in Table 14 below.

Table 14

Open-ended Questions Contrasts across Time, Condition and Between Conditions by Time

| Test | Mean | SE | 99% CI | |
			LL	UL
Cntrl T2-T1	0.3987380	0.3324545	-0.4947630	1.1820420
Cntrl T3-T2	0.1637804	0.2903731	-0.5753974	0.9666954
Cntrl.Quad	-0.2349576	0.5581089	-1.5921745	1.3517870
Treat T2-T1	**7.6801382****	**0.9087979****	**5.7411041****	**10.2811830****
Treat T3-T2	**3.1592816****	**0.9503322****	**0.8749753****	**5.6901447****
Treat Quad	-4.520856	1.4348706	8.5521805	-1.2395931
Treat T32 - T1	**9.2597790****	**0.9416965****	**7.0416794****	**11.7036790****
T/CTime1	-0.7594211	0.5196045	-2.0127583	0.6369438
T/C.Time2	**6.5219791****	**0.9038108****	**4.5513596****	**9.1086590****
T/C.Time3	**9.5174802****	**1.1143486****	**6.7952564****	**12.5048243****

** $p < .01$

The contrasts indicate that the Control condition did not significantly change in the number of questions asked from Time 1 to Time 2, and From Time 2 to Time 3. Accordingly, the test for a quadratic effect was also not significant for the Control group. The Treatment condition changed significantly from Time 1 to Time 2 $M = 7.68$, 99% CI [5.74, 10.28], and from Time 2 to Time 3, $M = 3.15$, 99% CI [0.87, 5.69]. The change was linear, as the test for a quadratic effect was significant, indicating that the change from Time 1 to Time 2 was similar to that of Time 2 to Time 3 $M = -4.52$, 99% CI [8.55, -1.23]. Finally, the aggregate change within the Treatment condition after Time 1 was also significant, indicating that the Treatment had an effect across both post-treatment time points.

Treatment contrasted with Control indicates that at Time 1 the groups were not significantly different from one another, but at Time 2 and Time 3 the groups differed

significantly from one another, indicating that the Treatment condition participants were

asking about 6.5 open-ended questions, $M = 6.522$, 99% CI [4.551, 9.108] at Time 2 in

comparison to the Control condition. The Treatment condition participants also asked

about 9.5 more open-ended questions at Time 3 than the Control condition $M = 9.517$,

99% CI [6.795, 12.503].

Close-ended questions. The next variable, Close-ended questions, was explored

to provide a cursory understanding of the data. Table 15 below provides Means and Mean

Differences between Conditions.

Table 15

Close-ended Questions Means and Mean Change by Condition

	Treatment		Control	
	Mean	*Mean Change*	*Mean*	*Mean Change*
T1	3.44	-	2.68	-
T2	8.60	5.16	3.44	0.76
T3	8.84	0.24	3.28	-0.16
T1-T3	3.44 - 8.84	5.4	2.68 - 3.28	0.6

Close-ended Questions means for both Conditions across Time are displayed in

Figure 6.
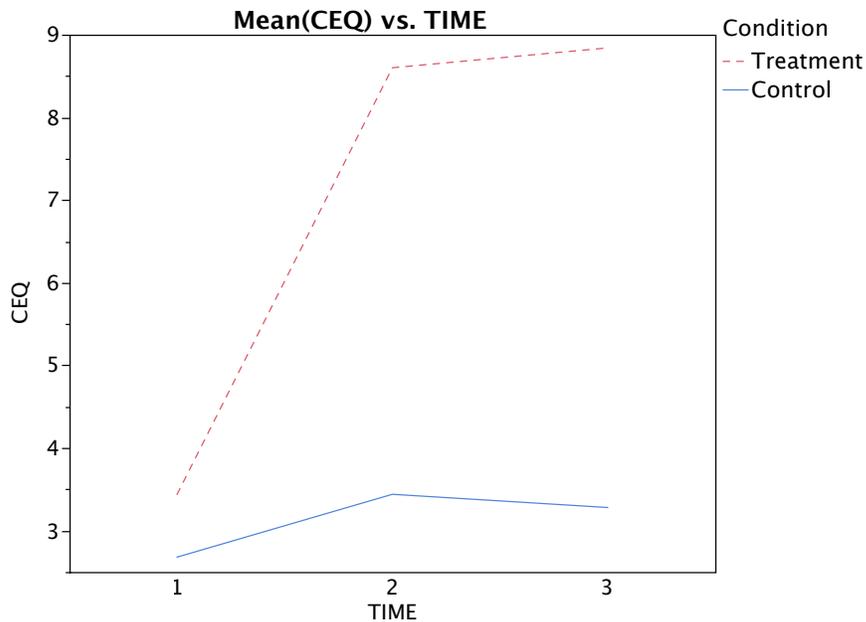
Figure 6. Close-ended Questions means by Condition and Time

Because we are interested in investigating both the change over time between groups, as well as accounting for within individual variance, Figure 7 below plots the measurement for each participant at each time point.
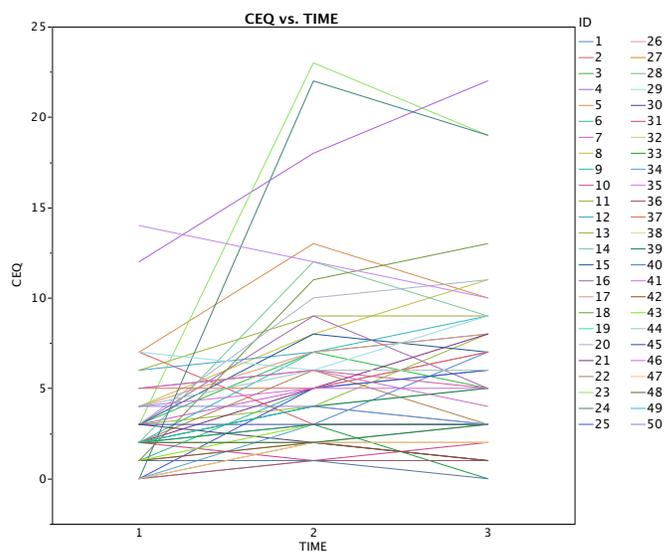
Figure 7. Close-ended questions responses for each participant

Again, a mixed Multi-Level Model (MLM) with fixed effects of Condition and Time, and the interaction of Condition with Time on the number of close-ended questions

at level one and random effects accounting for within-subject effects at level two were performed to assess and account for the intra-individual and between group changes over time.

Table 16

Summary of Model Fit for Close-ended Questions

RSquare	*0.765603*
RSquare Adj	0.757464
Root Mean Square Error	0.553652
Mean of Response	2.026355
Observations (or Sum Wgts)	150

Table 17

Fixed and Random (REML) Effects Omnibus Tests for Close-ended Questions

Fixed Effect	*Nparm*	*DF*	*DFDen*	*F Ratio*	*Prob > F*		
Condition	1	1	48	22.9252	**<.0001***		
TIME	2	2	96	29.6350	**<.0001***		
Condition*TIME	2	2	96	9.2473	**0.0002***		
Random Effect	*Var Ratio*	*Var Component*	*Std Error*	*95% Lower*	*95% Upper*	*Pct of Total*
ID*	1.0131241	0.3105535	0.0855293	**0.142919***	**0.478188***	50.326
Residual		0.3065306	0.0442439	0.2354154	0.4157356	49.674
Total		0.6170841	0.0892624	0.4736662	0.8375259	100.000

* $p < .05$

Again, the overall effect size ($R^2 = 0.765$) indicates a good fit for the model. The fixed effects components of the model indicate that there are significant differences across time, and across Condition (Treatment and Control) in the number of close-ended questions asked.

The significant interaction of Condition and Time on the number of close-ended questions requires providing contrasts, as the number of close-ended questions is moderated by Condition and Time.

The random effects estimate indicates that there is significant variance within-subjects ($p < 0.05$) thus incorporating the random effect in the model is appropriate, and allows us to account for individual level variance. The contrasts for the fixed effects are provided in Table 18 below.

Table 18

Close-ended Questions Contrasts within Conditions across Time, and Between Conditions by Time

			99% CI	
Test	Mean	SE	LL	UL
Cntrl T2-T1	**1.21705****	**0.2948555****	**0.4042****	**1.9544****
Cntrl T3-T2	-0.41733	0.2995378	-1.22d190	0.28640
Cntrl.Quad	**-1.63438****	**0.4094373****	**-2.6494****	**-0.4946****
Treat T2-T1	**5.01686****	**1.0522262****	**2.5772****	**7.9653****
Treat T3-T2	0.35473	0.5077519	-0.9597	1.6558
Treat Quad	**-4.66213****	**1.3420908****	**-8.4379****	**-1.5754****
Treat T32 - T1	**5.19423****	**0.9764862****	**2.90692****	**7.85639****
T/CTime1	1.00470	0.6843497	-0.92100	2.68447
T/C.Time2	**4.80452****	**1.0310451****	**2.38327****	**7.63211****
T/C.Time3	**5.57659****	**0.9973118****	**3.09355****	**8.09530****

** $p < .01$

The Control condition contrasts within Close-ended questions indicate that these individuals asked, on average, a little more than 1 question from Time 1 to Time 2, $M = 1.22$, 99% CI [0.404, 1.954], but then asked a small number fewer from Time 2 to Time 3, $M = -0.42$, 99% CI [-1.22, 0.29] that was not a significant difference. The Control condition's change across the three measurements would indicate a curvilinear trajectory, as indicated in the significant quadratic test of the Control condition, $M = -1.63$, 99% CI [-2.64, -0.495].

The Treatment condition contrasts indicate similar results as the Control condition, that the number of close-ended questions from Time 1 to Time 2 was significant $M = 5.01$, 99% CI [2.58, 7.97], but from Time 2 to Time 3 the change was not significant $M = 0.35$, 99% CI [-0.96, 1.66], indicating that the participants in the Treatment condition did not make any meaningful change in the number of close-ended questions at these two measurements. The Treatment condition's change was also significant in the aggregate as the average number of close-ended questions in Time 2 and 3 was significantly different than at Time 1 $M = 5.19$, 99% CI [2.91, 7.86]. Like the Control condition, the trajectory was non-linear, as the quadratic test was significant $M = -4.66$, 99% CI [-8.44, -1.58].

Contrasting the Treatment and Control conditions indicated that the intervention's participants asked a higher number of close-ended questions, almost five per session, $M = 4.80$, 99% CI [2.38, 7.63] at Time 2. The Treatment condition also asked about five more close-ended questions at Time 3 than the Control condition $M = 5.58$, 99% CI [3.09, 8.10].

Commenting. Commenting was likewise explored to provide a preliminary understanding of the data. Means and mean changes for Commenting are provided in Table 19.

Table 19

Commenting Means and Mean Change by Condition

	Treatment		*Control*	
	Mean	**Mean Change**	**Mean**	**Mean Change**
T1	3.36	-	4.44	-
T2	10.20	6.84	4.36	-0.08
T3	12.64	2.44	4.84	0.48
T1-T3	3.36 -12.64	9.28	4.44 - 4.84	0.40

The means for both Conditions at each Time are displayed in Figure 8 below.
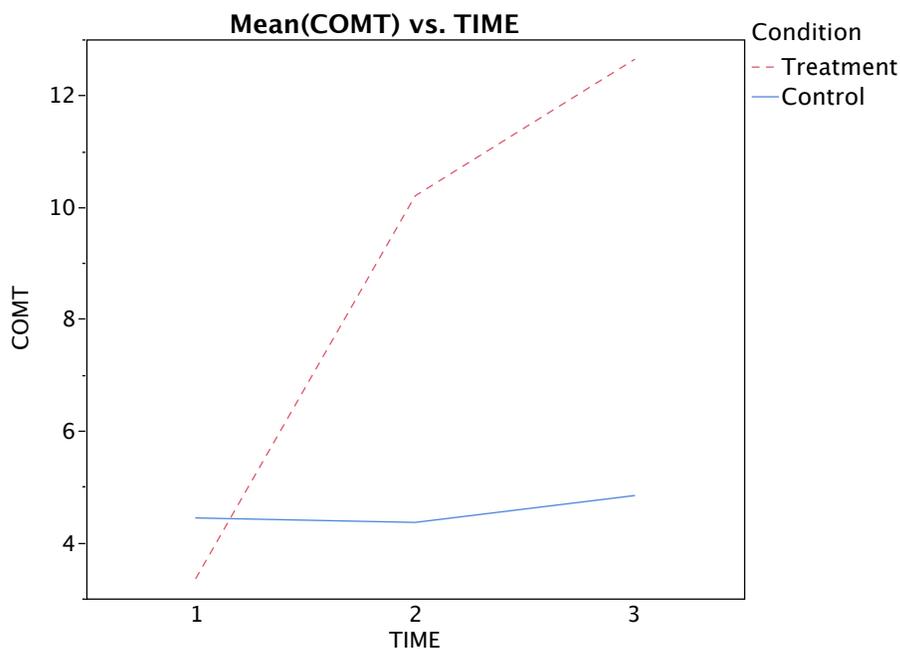
Figure 8. Commenting means by Condition and Time

Because we are interested in investigating both the change over time within and between groups, as well as accounting for individual factors, the lines for each participant across each time point are displayed in Figure 9 below.
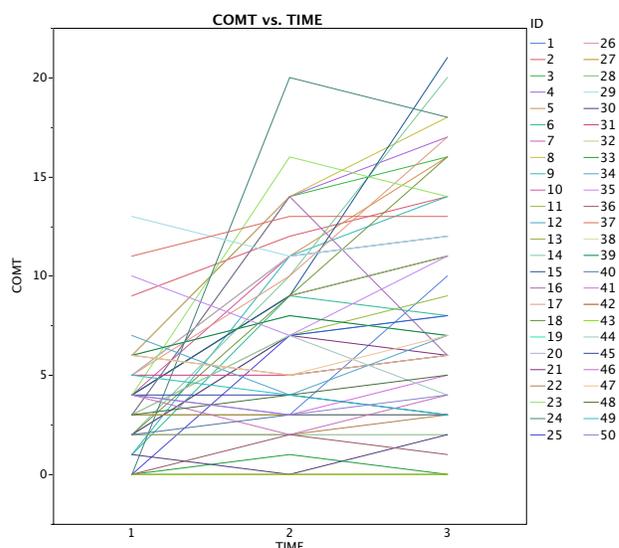
Figure 9. Commenting responses for each participant

The summary of the HLM fit and omnibus tests for significance of the fixed and random effects are displayed in Tables 20 and 21 below.

Table 20

Summary of Model Fit for Commenting

RSquare	*0.857089*
RSquare Adj	0.852127
Root Mean Square Error	2.230346
Mean of Response	6.64
Observations (or Sum Wgts)	150

Table 21

Fixed and Random Effects (REML) Omnibus Tests for Commenting

Fixed Effect	*Nparm*	*DF*	*DFDen*	*F Ratio*	*Prob > F*		
Condition	1	1	48	16.5352	**0.0002***		
TIME	2	2	96	59.1086	**<.0001***		
Condition*TIME	2	2	96	47.7533	**<.0001***		
Random Effect	*Var Ratio*	*Var Component*	*Std Error*	*95% Lower*	*95% Upper*	*Pct of Total*	

Fixed Effect	Nparm	DF	DFDen	F Ratio	Prob > F	
ID*	2.3823773	0.4979781	0.1163074	**0.270019***	**0.725936***	70.435
Residual		0.2090257	0.0301703	0.1605317	0.2834935	29.565
Total		0.7070038	0.1176045	0.523167	1.0086837	100.000

* $p < .05$

In the Commenting outcome model, ($R^2 = 0.86$) the omnibus tests of the fixed

effects of Time, Condition, and the interaction of Condition and Time are significant, The

fixed effects components of the model indicate that there are significant differences

across time, and across Condition (Treatment and Control) in the number of comments

the adults provided. The random effects are also significant ($p < 0.05$), thus including

them in the model is appropriate. The contrasts for the fixed effects are provided in Table

22 below.

Table 22

Commenting Contrasts within Conditions across Time, and Between Conditions by Time

	Mean	SE	Low99	High99
			99% CI	
Cntrl T2-T1	0.0695461	0.3837675	-0.920904	1.068216
Cntrl T3-T2	0.4041429	0.3608379	-0.457092	1.365817
Cntrl.Quad	0.3345968	0.7140129	-1.463794	2.255889
Treat T2-T1	**0.8768452****	5.2274468	**9.362351**	**6.880017****
Treat T3-T2	**0.8034853****	0.8484708	**4.475310****	**2.376410****
Treat Quad	-1.3833866	-7.258651	-1.140231	4.503607
Treat T32 - T1	**8.0682229****	0.8249839	**6.127244****	**10.36140****
T/CTime1	-0.571700	0.8659253	-2.803210	1.617828
T/C.Time2	**6.2387718****	1.0361396	**3.559034****	**8.925872****
T/C.Time3	**8.2110388****	1.2223606	**5.1291932****	**11.36468****

** $p < .01$

The Control condition did not have any significant differences in the number of comments from Time 1 to Time 2 $M = 0.07$ 99% CI [-0.92, 1.07], nor from Time 2 to Time 3 $M = 0.40$ 99% CI [-0.46. 1.37], and the test for a quadratic effect was also not significant $M = 0.33$ 99% CI [-1.46, 2.26]. The Treatment condition was significantly different in the number of comments from Time 1 to Time 2, $M = 0.88$, 99% CI [9.36, , and from Time 2 to Time 3, as well as the aggregate of Times 2 and 3 compared to Time 1 $M = 8.07$, 99% CI [6.13, 10.36]. The test for a quadratic effect was not significant, thus the change took a linear trajectory.

Finally, the contrasts between the treatment and control conditions were not significant at Time 1 $M = -0.57$ 99% CI [-2.80, 1.62] but were significant at Time 2 $M = 6.37$, 99% CI [3.56, 9.93] and Time 3 $M = 8.21$, 99% CI [5.13, 11.36], indicating that the

Treatment condition commented about six more times at Time 2 and eight more times at Time 3 than the Control condition.

Explaining. Explaining was also compared in similar fashion. The means at each time point for both conditions are displayed in Figure 10 below.
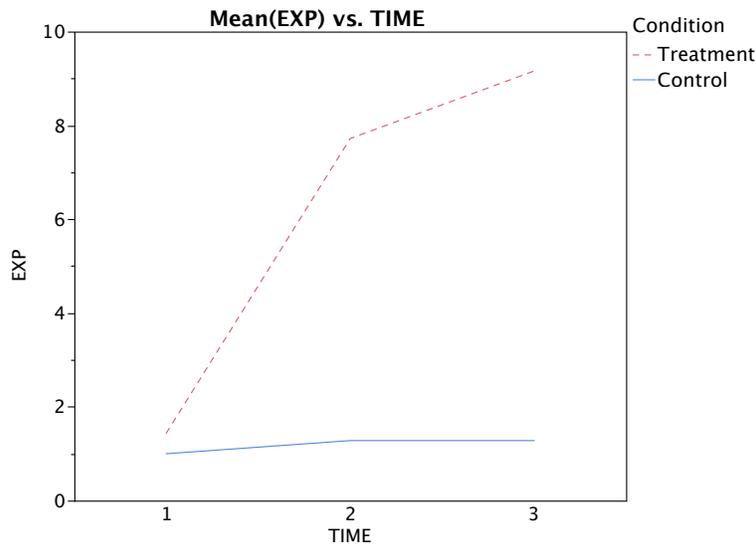

Figure 10. Explaining means by Condition and Time

Again, we are interested in investigating both the change over time between groups, within groups, as well as accounting for intra-individual factors. The linear plot for each participant at each time point is displayed in Figure 11 below.
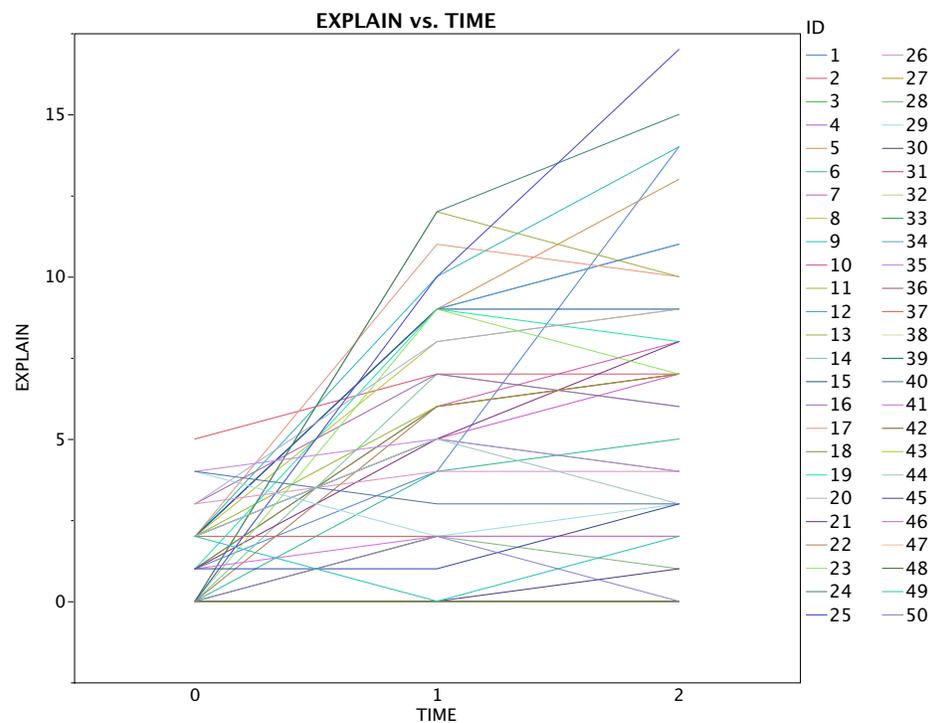
Figure 11. Explaining responses for each participant

Means and mean differences for the number of times adults in both conditions used the scaffolding technique of Explaining at each Time.

Table 23

Explaining Variable Means and Mean Change by Condition

Time	Treatment		Control	
	Mean	**Mean Change**	**Mean**	**Mean Change**
T1	1.44	-	1.00	-
T2	7.72	6.28	1.28	0.28
T3	9.16	1.44	1.28	0.00
T1-T3	1.44 – 9.16	7.72	1.00 – 1.28	0.28

In Tables 24 and 25, the results of the HLM fit for the fixed effects of Treatment Condition, Time, and the interaction of Treatment Condition and Time at Level 2 (between person), and the random effect of within-person factors is tested at Level 1.

In the *Explaining* model ($R^2 = 0.87$) the fixed effects omnibus tests indicate that there are significant differences in the Time variable, Condition variable, and that Time and Condition moderate the Explaining outcome. The random effects test indicates that individuals vary significantly in their change over time, and thus including these effects in the model is appropriate.

Table 24

Summary of Model Fit for Explaining

RSquare	*0.873186*
RSquare Adj	0.868783
Root Mean Square Error	1.616237
Mean of Response	3.646667
Observations (or Sum Wgts)	150

Table 25

Omnibus Tests of Fixed and Random (REML) Effects for Explaining

Fixed Effect	*Nparm*	*DF*	*DFDen*	*F Ratio*	*Prob > F*		
TIME	2	2	96	87.0166	**<.0001***		
Condition	1	1	48	128.2018	**<.0001***		
Condition*TIME	2	2	96	74.5113	**<.0001***		

Random Effect	*Var Ratio*	*Var Component*	*Std Error*	*95% Lower*	*95% Upper*	*Pct of Total*
ID*	0.5701829	1.4894444	0.4978943	**0.513589***	**2.465299***	36.313
Residual		2.6122222	0.3770418	2.0061855	3.5428558	63.687
Total		4.1016667	0.5434018	3.2148076	5.4158903	100.000

* *p* <.05

The Contrasts for Explaining are presented in Table 26 below, with interpretation of the results following.

Table 26

Contrasts of Explaining within Conditions across Time, and Between Conditions by Time

	Mean	SE	Low99	High99
			99% CI	
Cntrl T2-T1	0.20573086	0.1758958	-0.2171025	0.7341688
Cntrl T3-T2	0.05669533	0.1545553	-0.3557540	0.4810450
Cntrl.Quad	-0.14903553	0.3043147	-1.0173918	0.6085791
Treat T2-T1	**6.55355724****	**0.5556109****	**5.2059698****	**8.0945783****
Treat T3-T2	**1.34584215****	**0.5230715****	**0.1139885****	**2.7516064****
Treat Quad	**-5.20771509****	**0.8146105****	**-7.3206825****	**-3.1747004****
Treat T32 - T1	**7.22647832****	**0.5800543****	**5.7949208****	**8.7863153****
T/CTime1	0.60053238	0.3343546	-0.3005607	1.5175270
T/C.Time2	**6.94835876****	**0.5330963****	**5.5703249****	**8.3237241****
T/C.Time3	**8.23750558****	**0.6864140****	**6.4850435****	**10.0239653****

** $p < .01$

In the Explaining outcome, the Control condition did not change from Time 1 to Time 2 $M = 0.21$, 99% CI [-0.22, 0.73], nor from Time 2 to Time 3, $M = 0.06$, 99% CI [-0.36, 0.48]. Likewise, the test for quadratic change was not significant at the $p < 0.01$ level.

In the Treatment condition, all tests of change were significant. From Time 1 to Time 2, $M = 6.55$, 99% CI [5.21, 9.09] Time 2 to Time 3, $M = 1.35$, 99% CI [0.11, 2.75], and from Time 1 to the aggregate of Times 2 and 3, $M = 7.23$, 99% CI [5.79, 8.79]. The change was in a curvilinear fashion, as the quadratic test was also significant.

Contrasting the Treatment condition with the Control condition indicated a difference of almost seven more questions at Time 2 for the Treatment condition, $M =$ 6.95, 99% CI [5.57, 8.32] and more than eight more at Time 3, $M = 8.23$, 99% CI [6.49, 10.02].

Enhancing engagement. Enhancing Engagement (EE) was also explored to provide an understanding of the change, if any, over time between groups. Means and mean changes in each group over time are displayed in Table 27.

Table 27

Enhancing Engagement Means and Mean Change by Condition

Time	Treatment		Control	
	Mean	**Mean Change**	**Mean**	**Mean Change**
T1	1.6	-	1.72	-
T2	6.8	5.2	1.68	0.04
T3	8.4	1.6	1.64	-0.04
T1-T3	1.6-8.4	6.8	1.72-1.64	-0.08

Figure 12 plots the means of the treatment and control conditions at each time and the linear fit between them for the Enhancing Engagement outcome.
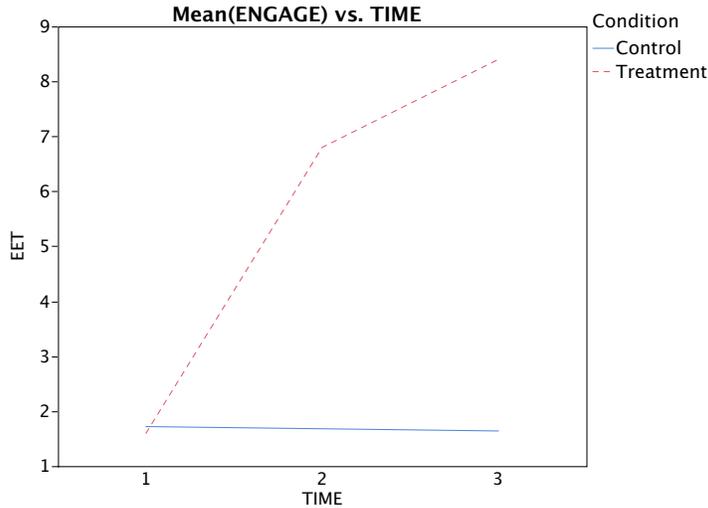
Figure 12. Enhancing Engagement by Condition and Time

Again, we are interested in investigating both the change over time between groups, as well as accounting for intra-individual variance. Figure 13 below displays the linear plot for each participant at each time point.
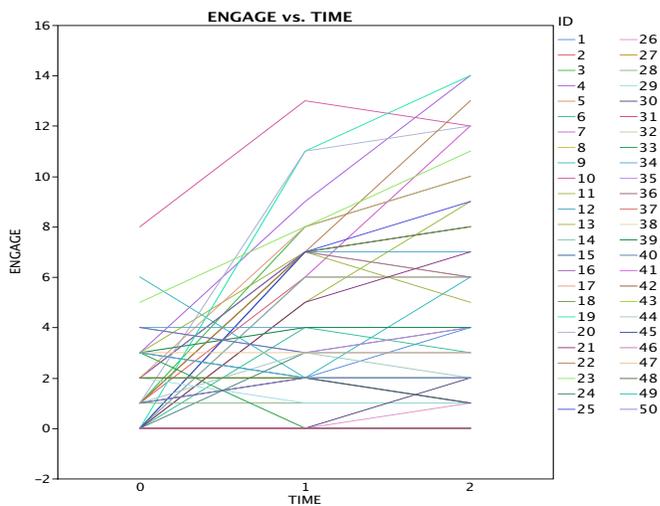
Figure 13. Enhancing Engagement responses for each participant

The Enhancing Engagement Variable is also tested in a Mixed Hierarchical Model with fixed effects of Condition, Time, and the interaction of Condition and Time

at Level 2 (between), and the individual at Level 1 to establish whether the within person

variance contributes to the model.

Table 28

Summary of Model Fit for Enhancing Engagement

RSquare	0.860064
RSquare Adj	0.855205
Root Mean Square Error	1.547579
Mean of Response	3.64
Observations (or Sum Wgts)	150

Table 29

Fixed and Random (REML) Omnibus Tests of Enhancing Engagement

Fixed Effect	Nparm	DF	DFDen	F Ratio	Prob > F
TIME	2	2	96	64.5595	**<.0001***
Condition	1	1	48	64.8797	**<.0001***
Condition*TIME	2	2	96	67.3987	**<.0001***

Random Effect	Var Ratio	Var Component	Std Error	95% Lower	95% Upper	Pct of Total
ID*	0.9028068	2.1622222	0.6152085	**0.956435***	**3.368008***	47.446
Residual		2.395	0.3456885	1.8393589	3.2482458	52.554
Total		4.5572222	0.6467728	3.5144136	6.1469772	100.000

* *p* <.05

In the Enhancing Engagement outcome, the model is a good fit to the data (R^2 =

0.86). Fixed effects omnibus tests indicate a significant difference between Conditions,

across Time, and that Enhancing Engagement is moderated by Time and Condition.

Finally, the Level 1 (Random Effect) variable of person indicates that there is

significant within-person variance and thus including these random effects in the model

contributes to model fit. The contrasts for Enhancing Engagement are provided in Table

30 below.

Table 30

Contrasts of Enhancing Engagement within Conditions across Time, and Between

Conditions by Time

	Mean	SE	99% CI	
			Low99	*High99*
Cntrl T2-T1	-0.06687224	0.1884055	-0.6210633	0.3771968
Cntrl T3-T2	0.05078512	0.1610631	-0.3115997	0.5285151
Cntrl.Quad	0.11765736	0.2618334	-0.5725082	0.7748813
Treat T2-T1	**5.67786033****	**0.5818626****	**4.0149719****	**7.0426786****
Treat T3-T2	**1.57117044****	**0.4295595****	**0.5081014****	**2.6889904****
Treat Quad	**-4.10668988****	**0.7693591****	**-5.9226390****	**-1.9828973****
Treat T32 - T1	**6.46344555****	**0.5918450****	**4.8778524****	**7.9221900****
T/CTime1	-0.32377457	0.4596268	-1.4722848	0.9782343
T/C.Time2	**5.42095800****	**0.6091077****	**3.7994335****	**6.9756506****
T/C.Time3	**6.94134333****	**0.7052422****	**5.1896153****	**8.7217497****

** $p < .01$

For the Enhancing Engagement outcome, significant effects of Time ($p < 0.01$) were detected in contrasts of Treatment Condition at Time 1 to Time 2, and Time 2 to Time 3, as well as the average of Times 2 and 3. The Control Condition showed no significant change in Enhancing Engagement at each measurement.

Again, this is a non-linear change, as the quadratic equation of Treatment is also significant, and the Treatment group added more than five instances, on average, of Enhancing Engagement from Time 1 to Time 2 $M = 5.68$, 99% CI [4.01, 7.04], but then increased at a slower rate of a bit more than one and a half instances from Time 2 to Time 3 $M = 1.57$, 99% CI [.508, .269]. Additionally, the contrasts of Treatment Condition were significant at Time 2 and Time 3, with the Treatment group enhancing engagement in

about five more instances $M = 5.42$, 99% CI [3.80, 6.70] than the Control group at Time

2, and almost seven instances $M = 6.94$, 99% CI [5.19, 8.72] than the Control group at

Time 3.

Contingency management. The Contingency Management outcome was

examined next. In Table 31 below are the means and the mean changes by condition over

time.

Table 31

Means and Mean Changes for Contingency Management by Condition

Time	Treatment		Control	
	Mean	**Mean Change**	**Mean**	**Mean Change**
T1	0.76	-	2.60	-
T2	1.08	0.32	2.68	0.08
T3	1.32	0.24	2.96	0.28
T1-T3	0.76 to 1.32	0.56	2.60 to 2.96	0.32

Figure 14 below plots the measurement of Contingency Management at each Time by
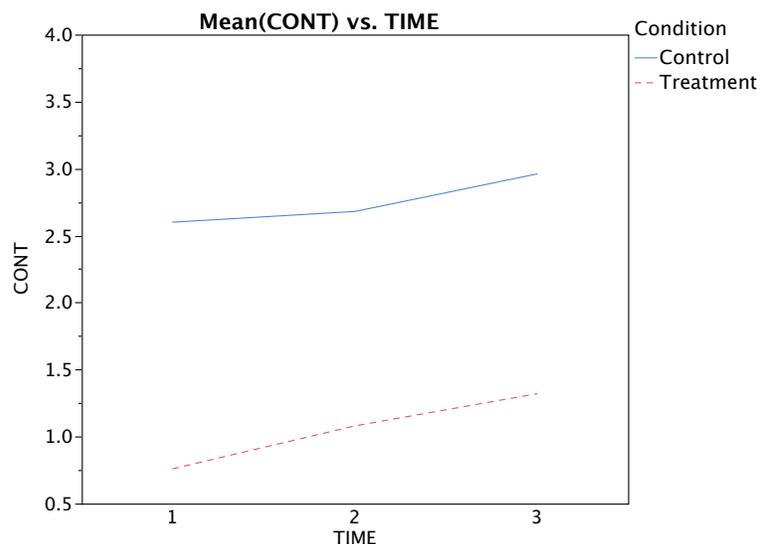
Condition.

Figure 14. Contingency Management at each Time by Condition

Figure 15 below plots the Contingency Management response for each individual

at each time.
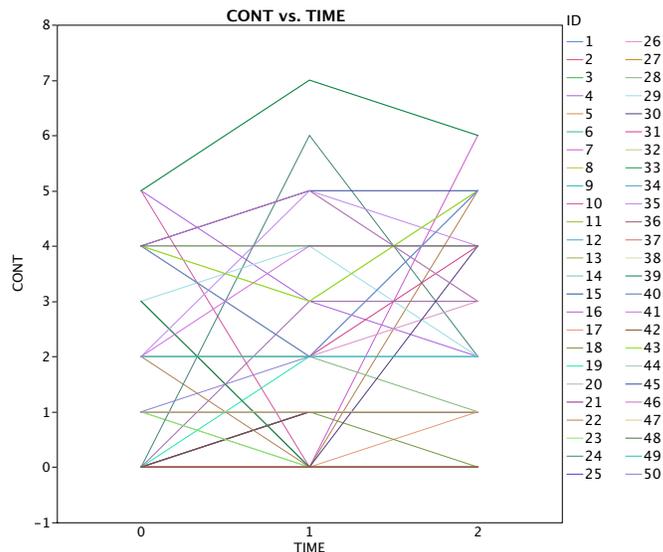
Figure 15. Contingency Management responses for each participant

Above, we see that there is variance between individuals. To establish the

significance of the Condition, Time, the interaction of Condition and Time, we will test

them as fixed effects in the HLM, whereas we will test within-subjects variance as a

random effect in the HLM. Table 32 below displays the results of the Hierarchical Model.

Table 32

Summary of Model Fit for Contingency Management

RSquare	0.68384
RSquare Adj	0.672862
Root Mean Square Error	1.228708
Mean of Response	1.9
Observations (or Sum Wgts)	150

Table 33

Fixed and Random (REML) Omnibus Tests of Contingency Management

Fixed Effect	Nparm	DF	DFDen	F Ratio	Prob > F		
TIME	2	2	96	1.7619	0.1772		
Condition	1	1	48	19.6018	**<.0001***		
Condition*TIME	2	2	96	0.1369	0.8722		
Random Effect	*Var Ratio*	*Var Component*	*Std Error*	*95% Lower*	*95% Upper*	*Pct of Total*	
ID*	0.8778289	1.3252778	0.3802469	**0.580007***	**2.070548***	46.747	
Residual		1.5097222	0.2179096	1.159466	2.0475778	53.253	
Total		2.835	0.4005196	2.1886967	3.8183741	100.000	

* p <.05

The effect size ($R^2 = 0.68$) indicates a moderate fit of the data to the model,

however, it is lower than that of the other outcomes' R^2 values. The omnibus tests of this

model indicate that the effect of Condition on Contingency Management depended on

Condition only, but did not vary as a function of time or as an interaction of Condition

and Time, verifying what we would expect from the plot. The random effects of person

were also significant, indicating that within-subjects variance should be included in the

model.

The contrasts for Contingency Management are provided in Table 34 below.

Table 34

Contrasts of Contingency Management within Conditions across Time, and Between

Conditions by Time

	Mean	SE	99% CI Low99	High99
Cntrl T2-T1	-0.1710306	0.3328196	-1.0896994	0.65097621
Cntrl T3-T2	0.3395954	0.3138708	-0.3645996	1.28875491
Cntrl.Quad	0.5106260	0.5622410	-0.8308593	2.09414339
Treat T2-T1	0.3893770	0.2794096	-0.3719420	1.15854449
Treat T3-T2	0.2389068	0.2653865	-0.3559957	1.06973007
Treat Quad	-0.1504702	0.4518924	-1.4083009	1.01116181
Treat T32 - T1	0.5088304	0.2604299	-0.2497937	1.17598573
T/CTime1	**-1.8893360****	**0.4118195****	**-2.9061843****	**-0.87045137****
T/C.Time2	**-1.3289285****	**0.5093476****	**-2.6677184****	**-0.07253149****
T/C.Time3	**-1.4296171****	**0.5326046****	**-2.7777615****	**-0.08650886****

** p <.01

For the Contingency Management outcome, any changes over time within both conditions were not significant. However, the Control condition did use significantly more Contingency Management strategies at all three measurements. However, as the chart of the means, the HLM, as well as the contrasts above indicate, the Control and Treatment conditions started out with more uses of Contingency Management and essentially maintained their use over the length of the study.

Prompting/Scaffolding NOS. Prompting / Scaffolding NOS (PSNOS) as the outcome was tested next. However, the variable had such a small amount of variance, that it was not considered for further analysis. The plot below indicates the means at each time point. Note the scale is less than 1, such that for most participants, there was little or

no observational coding of this variable. All of the omnibus tests for significance of Time, Condition, and the interaction of Condition and Time were conducted, however, no results were significant, and thus they are not reported here.
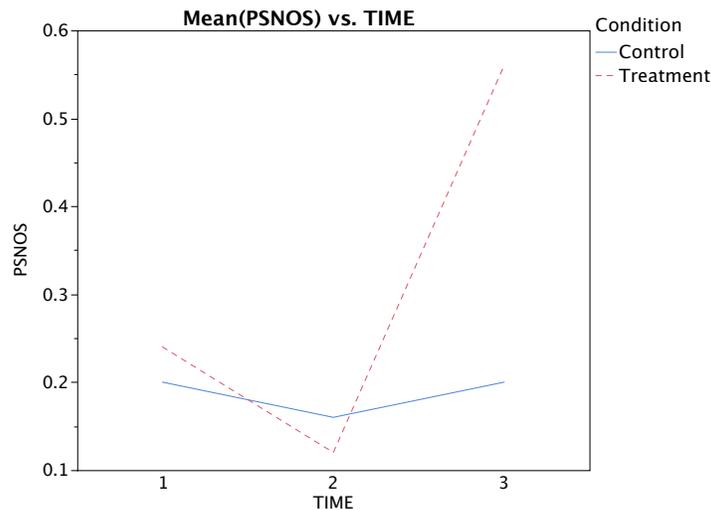
Figure 16. Prompting / Scaffolding NOS by Condition across Time

Child Observation Record Outcomes

In investigating the change over time of the Child Observation Record results of interest, MLM of the same structure as those presented in the Scaffolding Outcomes section were tested. The observations of interest were those included in the Language and Literacy Scale (Listening to and Understanding Speech; Using Vocabulary; Using Complex Patterns of Speech; Showing Awareness of Sounds in Words; Demonstrating Knowledge About Books; Using Letter Names and Sounds; Reading; and Writing) as well as the Social Relations Scale (Relating to Adults; Relating to Other Children; Resolving Interpersonal Conflict; and Understanding and Expressing Feelings).

However, these models revealed that the only significant omnibus tests of these outcomes were those at Time 3, compared to Time 1 (with the exception of Using Vocabulary, which was significant at Time 2 and Time 3). The effect of Condition on

these outcomes as well as the interaction of Time and Condition was not significant at the

$p < .05$ level. Understanding why this is the case will be presented in the Discussion

section.

"The child is not a passive recipient of knowledge, nor is the teacher a model or expert of knowledge: together they are participants in joint problem solving, sharing information and responsibility"

Hill, Stremmel, & Fu, 2005, p.16

Findings

The analysis of the quantitative data above indicates that the intervention seems to have had an effect on scaffolding and mind-mindedness. However, these data do not give us the depth of understanding that qualitative research provides. Thus, we explore a more in-depth explanation of the shared reading activity setting here. I begin with my personal narrative to provide context to my analysis, desire to study shared reading, and personal rationale for pursuing this research. After extensive discussion with my advisor on how to best present these data, we arrived at a classic approach to investigating the phenomenon of shared reading in this study's context by presenting themes and providing examples within them to provide a concrete and easily understandable demonstration of what is happening. When examples are given, the names of participants have been changed to *Adult* and *Child* to protect their anonymity. If a specific dyad is presented, pseudonyms are used for the same purpose.

Researcher's Personal Narrative and Historical Perspective

As an upper-middle class Caucasian descended from educated parents, with a stable family of origin, and very little in the way of risk factors, it might seem strange that I would invest so heavily in focusing on an intervention targeting low-income, rural,

Appalachian, families learning to think of their children in a mindful, mind-minded, manner while teaching them ways to make reading more fun, engaging, and meaningful for both them and their children. I have searched my own thoughts about this many times to understand exactly why I do what I do. We do not call it "me-search" for nothing, and I have come to the realization that this work is the accumulation of all of the advantages I have been fortunate enough to have over my life course, and the result of my own lived experiences. It has always struck me as odd, and I raised this notion in my preliminary examinations, that the socio-cultural-historic perspective sometimes just flat-out ignores the "historic" part of its perspective. Thus, here I emphasize my own history to provide a sense of where I have been in a cultural context. I also provide a brief history of the Appalachian region to thus facilitate an understanding of both where these families have been and where I personally am going (Rogoff, 1997).

Appalachian region history. The Appalachian Region Commission (ARC) as defines the Appalachian Population as living in a 205,000-square-mile region that follows the spine of the Appalachian Mountains northern Mississippi to southern New York. The only state completely included in the Region is West Virginia. However, parts of 12 other states comprise the rest. They are as follows: Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, and Virginia. More than 42% of the Region's population is located in rural areas, which is 22% more rural than the rest of the nation's population (ARC, 2013).

While the Appalachian Region's economy was once highly dependent on heavy industries, mining, logging, agriculture, chemical and oil refineries, recently, it has expanded to a more diverse variety of manufacturing and service industries. In 1965,

33% of Appalachians lived in poverty. In 2008, the Region's poverty rate declined to 18 percent. Furthermore, in 1965 the number of economically distressed Appalachian counties, defined by high unemployment, low per-capita income, or special needs such as military base closings and natural disasters, was 223; in 2013 the number of these counties is 98 (ARC, 2013).

The Appalachian Region has been modified from one of mainly poverty to one of severe economic contrasts. In some communities, the population has successfully varied their economic strategies and achieved a reasonable level of economic success. However, some others still require basic infrastructure, including roads, water, and sewer systems.

Appalachian Virginia's students only achieve 86% of the high school graduation rate of the U.S., and only 58% of the college graduation rate of the U.S. (ARC, 2013). Contrasting the Appalachian Region of Virginia with the entire state, the Region's high school graduation rate is more than 15% lower than the Commonwealth of Virginia average, which is 1.3% higher than the national average. However, when comparing the college completion rate of Virginia of 121% of the national average with the Appalachian Region's 58%, the historical artifacts of low-income and poor education are evident (ARC).

Personal narrative. I grew up in rural Indiana on a small farm. While I was formally schooled at a private school to which my father, and his siblings went as well, in the city of Indianapolis, I was a 10-year 4-H member and lived a very rural lifestyle with livestock, chores, and the isolated and remote life in the country. It was here that I began to notice the different advantages some families had. I noticed my own was especially due to my parents, and the different approaches they took to my development.

Specifically, they took the time to listen to me, teach me, and help me find the answers myself. We did not call it "Scaffolding" at the time, but I know now that this was what they often did with my two brothers and me.

Even more importantly, my parents read with us from a very early age. My first memories are of books. I still have some of the books that were read with me as a boy, and I hope to read them with my own children someday. As I began to pursue this research more and more, I hypothesized that my parents, while truly amazing individuals with cognitive capacities well beyond my own, were not necessarily doing anything in the reading context that could not be mastered by others in a similar dyadic activity if they were just given the information, armed with the strategies, and most of all, encouraged to be *creative*.

Undertaking Qualitative Analysis

It is my hope that the background section has provided a useful frame for understanding this section of the research further. While these data were analyzed by several researchers, the decisions of what to include and on what to focus came down to the primary researcher, and his notions of confirmability or trustworthiness (Lincoln & Guba, 1985). Confirmability in qualitative research is similar to reliability in quantitative research. That is, are we able to see the same phenomenon in other times or places, or through other metrics? Trustworthiness is akin to validity in quantitative research, in that we are interested in determining if what we are measuring, or analyzing is something that is seen by other coders, and especially (if possible) by the participants themselves. However, should the reader feel compelled to push beyond this understanding, I will refer him or her to the introduction of this dissertation should he or she have any questions of

realism, positivism, relativism, or any such "-ism". It is there that I am explicit in noting that this research is focused on *pragmatism*. For an extensive review of pragmatism see Morgan (2007).

Qualitative analyses presented below. The findings from our qualitative analysis are presented in chronological order. While these data are presented in my own writing, the themes and categories were identified, explored and modified in collaboration with several research assistants without whom this work could not have been accomplished.

Findings Across Waves One, Two, and Three

The data were collected at three different time points for all of the participants. We were interested in determining if any noticeable change over time occurred both within the individual, and between groups over time. As such, the first wave is presented as including the entire group, due to the first wave consisting of an interview at baseline for all participants. Then, the analyses are split into findings at waves two and three for the treatment group. Because the control group's shared reading interactions tended not to qualitatively change over time, we focus here on the effects of the intervention on the treatment group only.

Findings at wave one. Wave one was the first collection, and while the readings were conducted in the Head Start Centers, several participants indicated that reading in front of the camera was a little intimidating for them. My research assistant and I did what we could to ease their anxiety, and we held the sessions in rooms in which they, and their children had been many times, there was still a sense of nervousness about being filmed. However, many of the participants indicated that this feeling disappeared shortly

after starting.

Additionally, we provide examples in later waves to demonstrate changes, but in wave one much of the analysis yielded a set of themes that were difficult to provide in an example. The best presentation of the themes in these cases is to explain the phenomenon and then explore the shift away from the time one themes at waves one and two.

Reading to the child. The first theme we identified was based on the observation that the adults often read the book to their children, as opposed to with their children. In virtually all of the wave one readings, the book was essentially opened and read to the child with little in the way of bidirectional interactions. This is not to say that there were not interactions with children, rather that the quality of these interactions was such that we often found the exercise to be a top-down approach to reading (which to some degree is necessary by virtue of the adults' ability to read while the child is still working on emergent literacy skills) with few *discussions* of anything being seen or read. Much of the reading beyond the actual words in the book took the form of identifying referents.

Identifying referents. The main interactions occurring in the initial wave of reading sessions were identified as identifying referents. This category had been developed by my own previous research (Fu, Wiles, and Milne, 2007), and it is present in virtually all of the shared reading sessions. *Identifying Referents* consists of an adult pointing to the book and either saying something like "look at the pig", or even asking "what is that?" about an item that had been referenced on the page already. For example:

A: "What is that?

C: It's a pig.

A: It's a pig."

A: "Look at that duck.

C: (looks at the duck)

A: Do you see the duck?

C: Yeah."

A: "Do you see any other animals?

Child: (points to page)"

While on the surface these might look like open-ended questions, we found the identification of a referent as not a sufficient use of cognitive capacity for either of the participants in the dyad and thus we chose to focus on processes that were more complex. Of the most importance, we found that the children seemed to become less enthusiastic with each passing page, as they were only being asked to identify something on a page and we identified this as the child responding to repetition negatively, as if they were being quizzed.

Hurrying. Although we emphasized to the participants that there was no need to rush when reading, many of them, for all intents and purposes, appeared to be hurrying to finish the book. We found this disconcerting at first, and made sure to investigate the days and times we had been recording to verify that we had not placed the families in a

situation where they would need to be elsewhere. I went so far as to ask some administrators at each site about this, and they all indicated that this style of adults reading to kids did not surprise them. It was not, in their opinion, that they rushed to get out, but that this was the standard way they read to their children, and I was capturing a very natural occurrence. Thus, we had confirmed that this was not out of the ordinary. Because demonstrating this theme is difficult to convey through excerpts, we provide a metric here we hope will convey the issue plainly: The average reading time, in minutes and seconds, was 4:34 for the first wave, and then in the group receiving the intervention, the average time jumped to 7:55 and 8:39 at waves two and three respectively, while the control group maintained approximately the same length of time in the subsequent reading sessions of 4:47 at Time 2, and 4:43 at Time 3.

Print instruction. While the shared reading interaction has potential to be a setting for all manner of teaching, we were quite surprised that there was little to no instruction around the print functions and/or print awareness within the book. Few adults pointed out words or letters to help their children understand them. Given my experience in previous shared reading research, it struck me that this was not a part of their approach to reading. We came to the consensus, based on our own experiences and an extensive literature review, that teaching print functions and print awareness were an important component of shared reading that had been omitted in these first sessions. We did have some controversy over this category, as the focus of the intervention was not on emergent literacy as much as providing a setting in which emergent literacy might thrive with the right guidance, strategy toolbox, and execution of strategies.

Summary of wave one. Wave one provided us with a window into what was happening when adults read to their children in front of the camera with no influence from us as researchers on the way they approached reading the book. The themes above combine to paint a picture of the typical dyad at Time 1 focusing on the items in the book (i.e. names, places, things) and not on print awareness or print functions. Additionally, our perceptions of the participants hurrying was troubling, but we did our best to get confirmation regarding this theme. *Hurrying* and *Reading to the Child* seem to go hand-in-hand, as reading to the child makes the interaction much more unimaginative and thus shorter. Finally, identifying referents, while somewhat more than just reading to the child, was found to be more of a crutch for the adults to attempt to make it more than a book, but it appeared that the children seemed to become disinterested at the repetition.

Findings at wave two. The wave two data were qualitatively analyzed through our modified induction process, but we focused on the experimental group's changes in their shared reading sessions since the previous recording. We examined several control group sessions to ensure that we were not seeing something different due to maturation or history, and felt satisfied that we had reached saturation with the data from the control group with the findings from Wave 1. These data were collected immediately following the intervention's completion. New categories and themes emerged from the data to help us understand the processes underlying the shared reading activity as a result of the intervention.

Reading with the child. Wave two had noticeable differences in the way that the adults were reading. The most salient of these was the difference in our perceptions of the adults' reading *with* the child instead of *to* the child, as had been done in wave one.

Defining features of reading with the child were difficult to ascertain in a reductionist analysis. Rather, we found that the overall tone and form of the readings were quite different. First, the adults seemed to be *working* during the activity. That is, their cognitive loads were noticeably different than they had been in the first wave. Several instances of the adults pausing to select a strategy before issuing a response were noted and the consensus was that the adults were truly thinking about the activity's possibilities. Second, the active, engaged, and attentive child dynamics were hard to ignore. There was a qualitative shift in the way the children participated in the shared reading session once their input had become a necessary part of the activity. Third, the sessions were marked by our perceived lack of concern on the part of the adults about the amount of time it was taking. These sessions stood out as having a different focus during the sessions than had the wave one recordings. The focus seemed to be much more on the process of reading rather than the product of finishing the book. An example of the difference between reading *to* the child and *with* the child is provided below:

Wave 1:

In this example, the adult read the entire book to the child while only asking the following two questions:

A: **What is that?**

C: A pig

A: **What's that?**

C: A bird

A: A loon

Wave 2:

In this example, the adult read the book *with* the child, and asked multiple questions while using different scaffolding techniques:

A: What is that loon doing?

C: He's looking for food.

A: Why do you think he's looking for food?

C: Because he's hungry

A: I bet you're right. I know what loons eat.

C: What!?

A: They eat fish!

Cognitive Structuring. Post-intervention, the style of the shared reading interaction began for many participants in a qualitatively different style. The participants had been encouraged to set the stage for the interaction to establish and model intersubjectivity, as well as to providing cognitive structuring to the children as a way of preparing them for ways of thinking about characters, reading, and elements of books. I must admit surprise at how well executed this was, as I had always been disappointed in my conceptualization of Cognitive Structuring, and had never felt very comfortable in delivering it in the program. I did not even know if I was conveying the proper information, let alone if they understood how to take this information and put it into practice. Fortunately, my participants demonstrated that either I was just too hard on myself, or that they, as parents, understood what I intended better than I did. Regardless, it was thrilling to see the adults using one of the most abstract components of the material

so flawlessly. For example, before they even began to read the book, the adult, *Karen*, set the stage for the activity by telling the child, *Shelley*, the following:

> K: We're going to read this book now. It has lots of characters in it. Do you know what characters are?
>
> S: Yeah.
>
> K: What are characters?
>
> S: Silly characters!
>
> K: Well, they could be silly characters, they can be serious, or anything, and they're all in the book. Let's see what's going to happen. Do you want to see what's going to happen?

Session 2 (1:03 - 1:08)

In the example above, Karen provided a cognitive structure for Shelley by explaining that books have characters. Then, she started to assess Shelley's current location within the zone of proximal development by asking an assessment question (do you know what characters are?), and then providing an assistance question to get Shelley to think about what they are, and then she offered an explanation of characters and again provided the knowledge that they are all in the book.

While we can note that each of these items was captured in the quantitative analysis, the qualitative analysis here points to nuances that are not fully captured and thus not developed in a strictly quantitative analysis. Karen's serial use of the scaffolding techniques with Shelley in this short, five second clip, differs from her previous use, and

many of the other participants' baseline use of any scaffolding techniques. That is, she demonstrated the attentive, responsive, and intentional interaction with her child that we had emphasized in the intervention, as opposed to merely asking a single question and then moving on, which had been common. Starting with providing a cognitive framework or structure, moving on to scaffolding by asking meaningful questions, and then finishing by offering an explanation and encouraging engagement by expressing her desire to see what is going to happen truly demonstrates the gestalt of the shared reading activity being more than the sum of its Cartesian parts.

In this exchange, the adult, *Audrey*, set the stage for her son, *Michael*, as demonstrated below:

A: "Now, what is this?

M: The front cover

A: And what is this?

M: The back cover

A: And what about this?

M: The spine

A: And who, who writes the book?

M: Uh…

A: What does the author do?

M: Writes the book.

A: What does the illustrator do?

M: Uhhhhhhhh…draws the pictures!

A: Awesome! Are you ready to read <u>Silly Sally</u>?

M: Yeah!

(Session 2, 00:40 - 1:15)

Intentionality and strategy selection. All of the analysts found a different degree of intentionality within the second wave. The adults' use of the strategies presented and practiced in the intervention was employed with clear intentionality. Many adults paused to reflect on the possible responses to the child's questions, responses, or other contributions to the activity. These pauses were completely absent in the first wave of data, as the adults were seemingly going by a well-established repertoire of interacting with their children, and as noted in the analysis of wave one, this was not commonly an intentional use of scaffolding. Analysts all agreed that we could watch the adults as they selected strategies from the scaffolding intervention's contents and then put them to use. Because the intervention stressed focusing on the child's developing mind (mind-mindedness), the participants seemed to find a very useful, and easily constructed way of applying this focus, which was to simply ask about their child's thinking, then pay attention to their responses, and select strategies to extend their children's learning.

In the example below, Karen continued to explore and keep the focus on Shelley's thinking. Karen has used the "what do you think?" question previously, and this time it went much the same, except that Karen was able to use the "what do you think it is" question to understand her daughter's thinking and recognize that she does not really understand something, as opposed to just defaulting to a standard response:

S: What's he saying? (pointing)

K: (pauses) What *do you think he's saying?*

S: I don't know

K: Well, they sang a tune, what do you think they might be singing?

S: A tune!

K: (Laughs). Do you know what a tune is?

S: No.

K: A tune is another word for (pauses), maybe, a song. They're singing a song.

(3:18 - 3:37)

One of the main emphases of the intervention was to use a sensitive and relevant approach to adults teaching young children in a natural context. In the example above, Karen again employed a mindful and mind-minded approach, but because she was sensitive to her child, she could assess her mental state and respond accordingly. The consensus in our analysis was that when Karen paused at the beginning she was considering various strategies to employ, picking one (a mind-minded open-ended question), and making sure to focus on Shelley's thinking. However, this time, Karen recognized that instead of Shelley's merely saying that she does not know because she defaulted to this, she asked an assessment question. Finding the humor in her child's response gives her an avenue to respond with some explanation that has taught Shelley about tunes.

In the next example, our adult, *Kathryn* demonstrated a similar tendency, working with her son, *Greg*.

K: What do you see?

G: I see a dog house, and I see claws

K: You see claws (pauses). What, (pause), what do you think that means?

G: Maybe it's a dog.

K: (exclaims) Maybeee!

As we see here, the interaction included a couple of pauses where it was seemingly clear that Kathryn was selecting a strategy from her toolbox of scaffolding techniques and she struggled a bit to find the right response. However, once she applied a strategy, the effect was palpable, as she then elicited a novel cognitive process from Greg, and then used her voice, through increasing her tone and pitch, to move on. Again, the serial use of the scaffolding strategies appeared, with Kathryn moving from an open-ended question to enhancing engagement with her voice.

Continuity. While the intentionality of selecting scaffolding strategies was a novel component of the second wave, there was a perceived downside to this. The adults seemed to be struggling to keep the continuity of the activity together. During the practice sessions included in the intervention's delivery as activities, many adults indicated just how difficult this real-time cognitive process was. This was evident in the second wave recordings, as many of the adults were visibly searching their mental "data banks" to identify a strategy, select it, and then put it to use. It seemed to affect the continuity of the session by creating a certain level of uncertainty in what the children could anticipate from their adult reading partners. We agreed, however, that this could be

due to the participants' lack of practice and that it did not seem to have an adverse effect on the children's involvement or interest. In fact, it was to the contrary.

Using the book as a jumping-off point. The most striking change from the first recording to the second recording was the adults shifting their focus from the content and story of the book to the mental processes of their children. Recall that in the first wave's readings the adults had largely either read the book straight through, or had simply asked the children to identify referents. It is important to note that the adults continued to ask their children to identify items in the book; however, these were used as the *start* to a more involved conversation, and not the *end* of a quick and relatively unsophisticated analysis of the people, places, or things in story. However, this did have one unintended side-effect, which was that the adults did not emphasize print functions or print awareness.

Gesturing and using sound effects. Reading sessions at time two were easily differentiated because of the radical change in the use of gestures. Adults used gestures to enhance the engagement of their children in the reading activity in all manner of differing ways. Some adults just chose to use more hand motions, and to be more expressive (think: Joe Pesci arguing with Richard Simmons) they just talked more with their hands. On the other hand (pun intended), some adults used gestures to model what was happening in the book. This group was also much more likely to use sound effects to portray the book's story. The effect this had on the children was unmistakable; as almost inevitably they would follow the adults' hands and either make similar sounds through mimicry, or contribute sound effects of their own. It was plain to see that this was making a difference in the tenor of the interaction.

Summary of wave two. The changes from the first recordings to the second were sometimes dramatic, and at other times subtle. For example, the adults seemed to be much less concerned with the camera and appeared more relaxed in the second recordings. This was a very subtle change that could have gone unnoticed were it not for the keen eyes of some of the analysts. The more remarkable changes addressed above included the switch from reading *to* the child to reading *with* the child, the noticeable change in intentionality within the reading session, the use of gestures and sound effects, the stalling occurring due to the cognitive processes required to properly put the scaffolding strategies into play, and the use of the book as more than a provider of items to identify.

This last point is important, as one of the ways I framed the goals of the intervention to the participants was for them to understand that the book is there to provide a framework for their interactions, but it need not even be the main focus of their interaction as long as they were teaching and learning with one another. However, an unintended consequence of this approach could have been that print awareness and print functions were largely ignored in the context of focusing on a slightly higher level of analysis, (i.e. the possibilities for engagement in this context), rather than a micro-level instruction about print. This also raises some interesting questions about socio-cultural contextual foci and the challenges of bridging the gaps between these levels while still providing the participants with the freedom to choose their strategies and maintaining cultural sensitivity, while being more intentional about emergent literacy skills.

The wave two findings were encouraging, as we were able to identify specific shifts in the manner and style that the readings changed, which, along with the

quantitative analysis of the sessions identifying the varying levels of specific behaviors, was both confirming these data and adding a new level of understanding to these data.

Findings at wave three. Wave three contained readings at the children's most advanced levels, given that they had been in school as well as having practiced reading with their respective adults over the course of several months. While the most dramatic of changes occurred between waves one and two, wave three sessions contributed to our understanding of the effects of the intervention as the children aged and the adults had more time to master the scaffolding techniques they had been taught.

Established patterns and comfort. The adults and children seemed to have established some patterns for their interactions by the time of the third wave. For example, several of the adults seemed to feel more comfortable with specific types of scaffolding (e.g. questioning, commenting), and less comfortable with others (e.g. enhancing engagement). Moreover, the adults appeared to have practiced these strategies at home. The use of these patterns so readily led us to believe that the adults had become more comfortable with the entire process of scaffolding and guiding participation during the activity. This also points to the establishment of intersubjectivity within the shared reading setting, which is the basis for the entire theoretical model of learning to read optimally in the zone of proximal development. The dyads seem to know what to expect from one another, and there is a shared understanding of what can, and usually occurs within the context of the activity.

Cognitive developmental changes shift discussion dynamics. As the children matured over the course of the study, there were apparent changes in the way the adult and child participants approached reading. As children of parents who received the

intervention grew developmentally, they became the primary mover and shaper of the interaction much more than in previous interactions. It was at wave three that the children began to exert their own agency within the shared reading activity, and the adults, for the most part, encouraged them to read, use the book for extending knowledge, and truly follow where their minds led them.

Visible cognitive processing. In wave two, we could often view the adults pausing and visibly processing the child's input, their pausing to engage in a metacognitive process in selecting a strategy, and then applying the selected strategy. At wave two, this took a considerable amount of time, and the process was visible to us as we analyzed the videotaped interactions. However, at wave three, there was a difference in the visibility of these cognitive processing events. The adults seemed to have gotten more proficient at listening to their children, selecting a scaffolding strategy, and applying the strategy within their interaction with their child. The apparent change in observable processing seemed to indicate a familiarity with the overall goals of the intervention.

Contingency Management changes. At the initial wave of data collection, many of the adults were commanding their children to return to their seat and be read to. We know that using authority as a means of shaping behavior is not as effective as an inquiry-based approach (Hill, Stremmel, & Fu, 2005). An overly authoritarian approach to managing the distractions and even the overt disregard for the adults' wishes has been the hallmark of low-income families' management of contingencies (Jensen, 2009). However, we noticed that during waves two and three, the approach changed dramatically to a more enthusiastic display of interest and engagement to redirect the

child's wayward attention. The previous use of their position of power to command compliance had been replaced by a more co-constructive and cooperative activity. Using their voice, expressing excitement at what is happening next, and provoking interest through gestures seemed to have an immediate effect on most of the children.

Summary of wave three. Wave three was marked by the more developed and polished practices of the adults' use of scaffolding. Additionally, adults were able to use less coercive methods to handle contingencies such as distractions, which was an excellent use of the actual examples provided in the intervention to confront these issues. It is important to note that this did not always work, as sometimes children just want to probe their boundaries and no amount of perceived interest on the part of the adult can change this.

The interactions were more practiced and included smoother transitions from wave two to wave three in the time it took adults to process their child's thinking, select a strategy, formulate an appropriately creative response within that strategy, and then deliver the scaffold. The adults who had been implementing the intervention's approach and skills, mind-mindedness and mindfulness, and scaffolding, respectively, were clearly used to this style, as the entire exercise seemed comfortable and not nearly as unusual as it had at wave two.

Qualitative Analysis Summary

This section has provided a comprehensive analysis of what can and does occur within the shared reading interaction over time due to the intervention. Some findings, such as the increased use of gestures and taking the book as a jumping off point were expected, as these were specifically targeted in the intervention's design and delivery.

However, we were also quite surprised by the gaps in continuity, and the intentional use of Cognitive Structuring as a technique. We also expected the interactions to change over time due to maturation, but while the intervention condition did seem to have different interactions over time, the control group's interactions seemed to remain stable over time, with maturation not making a meaningful change in the processes in the interaction.

Additionally, the analyses in this section provide a rich description of the nuances in the shared reading activity as a result of the intervention that continue to provide vital insight beyond the strictly quantitative approach. However, this analysis will also benefit from scrutiny under the harsh light of comparison to, and triangulation with, quantitative results. At the risk of repetition, the mixing of methods will provide what neither of the respective analyses could do operating independently.

Chapter 5: Discussion

The results and findings above were presented separately as a matter of parsimony; however, they ultimately resulted from my attention to answering, in a comprehensive manner, the research questions upon which this study is based. I will discuss my research findings in reference to the following questions:

RQ_1: *Do adults' descriptions of their children as mental beings and perceptions about their children as individuals with minds of their own change due to participation in the intervention condition as compared to those in the control condition?*

RQ_2: *What are the effects of this intervention on adults' use of scaffolding and guided participation strategies in the shared reading activity over time?*

RQ_3: *Does participation in the intervention condition affect the child's outcomes on standardized tests?*

RQ_4: *What qualitative differences in the way adults and children interact in the shared reading activity can occur as a result of the intervention?*

I will, first, present a discussion and reflection of my research results in the Mind-mindedness, scaffolding, and guided participation domains. I then present a discussion of the differences in the way adults and children interact in the shared reading activity as a result of the intervention and propose changes to the original model reflecting the contributions of this work to my understanding of mentoring, scaffolding and guided participation in the ZPD. Finally, I present limitations, including a discussion addressing the Child Observation Record and PALS, as well as an overview of my aims for future research.

Because I designed this study as a longitudinal, mixed-methods study, I combine the strengths of both paradigms (Qualitative and Quantitative) allowing for both depth and breadth of analysis. Mixed-methods, as a paradigm focused on pragmatism, allow us

to incorporate multiple epistemologies and encourage researchers to contribute to developing this paradigm and make comprehensive meanings of findings and results. In the classic RCT experiments, the ability of the participants' voices to be heard in the context of a true experiment was limited. However, I seek to become one of the newer breeds of scholar who gives voice to individuals and groups, while describing and explaining units of analysis.

Triangulating the Data

The quantitative analysis of the mind-mindedness and scaffolding observational data provide promising results indicating the likelihood of a high degree of success in effecting change over time through a very short intervention. The scaffolding strategies most affected by the intervention were as follows: Open-ended Questions, Close-ended Questions, Commenting, Explaining, and Enhancing Engagement. However, Contingency Management was not found to be significantly different within control and treatment conditions, but was significantly different between conditions. Prompting / Scaffolding Not Otherwise Specified (NOS) was not found to be important in these analyses. Because of the design of the study as a randomized, controlled trial with the ability to detect significant differences between groups over time, controlling for differences within individuals, we can reasonably attribute change in these outcome variables to the intervention.

Of course, quantitative analyses using HLM are only one side of the mixed-methods coin, and through qualitative analyses, categories and themes reflecting the changes over time were identified. Thus, I can triangulate quantitative results and qualitative findings. Qualitative findings, acquired via analyzing the videotaped recording

sessions, provide me the ability to identify those nuances of interactions absent in quantitative analysis. However, to be clear: both of these methods are powerful in and of themselves, I simply prefer to provide myself and others in the field with a more complete picture of what is happening as a result of this work.

Mind-mindedness and Mindfulness

Mind-mindedness, as measured by the way adults described their children, was a significant outcome in this study. Based on Meins' (1997) study, the results are intriguing.

The differences between the treatment and control conditions on using mental descriptions of their children were significant over time. (see Table 10) The significant contrasts indicate that adults in both groups began to describe their children in more mental terms as their children grew older. A closer examination of the data reveals that for participants in the treatment condition the Time 3 mean was significantly different from their own measures at Time 1 and Time 2. Additionally, these means were significantly higher than those of the control condition participants at the same times.

Analyses of these mind-mindeness data reveal that while all adults referred to their children in more mental terms as they mature and develop, the intervention seems to have had a positive effect on the number of times the experimental group adults describe their children in mental terms in contrast to the control group. A RCT design's advantages are most salient in a case such as this, as we can attribute change beyond that of the control condition to the intervention and not to maturation or history, as might be the case in a quasi-experimental design. The use of a Multi-Level Model allows us to

account for individual difference (within-subjects) effects and helps to explain the change over time.

Moreover, qualitative analyses revealed themes that were extrapolated from observations of adults making mind-minded and mindful approaches to their children in the shared reading activity after the intervention. Previous to the intervention, adults tended to read with the goal of finishing the book as quickly as possible, as opposed to using it as a jumping off point for reading for meaning. This former approach does not consider the child's developing mind and is perhaps more focused on the adult's needs than those of the child. To use Langer's term, this is mindlessness. A mindless approach to shared reading is reading a book *to* a child rather than *with* a child.

When adults switch their approaches from reading *to* their children to reading *with* their children, they make an intentional shift to using mind-minded and mindful approaches to reading with their children. Reading with a child truly *looks differently* than reading to a child, and this is because of an adult's willingness to think about a child's thinking, and to think creatively when co-constructing experiences within the ZPD.

Scaffolding

Due to the longitudinal and experimental design of this study, we can reasonably attribute changes to the effect of the intervention. Being able to account for within-person random effects provides a powerful method of accounting for individual level variance. The MLM analyses indicated that *Open-ended* and *Close-ended questions*, *Commenting, Enhancing Engagement*, and *Explaining* were positively affected by the intervention. However, in the treatment condition, for the *close-ended questioning*

outcome, the effect was non-linear, as the quadratic contrast analysis indicated that the number of questions being asked increased significantly from Time 1 to Time 2 (5 more close-ended questions), but did not maintain this rate of change from Time 2 to Time 3 (only 0.35 more close-ended questions).

This result might be due to several factors. First, the change in using both types of questions was significant and the slopes were steep from Time 1 to Time 2 (see Tables 14 and 18). Because of this sharp increase, maintaining this slope might require an inordinate amount of questioning of the child. Second, asking close-ended questions of children is not as fruitful as open-ended questioning for extending the thinking and learning of children in the ZPD and the adults might have recognized the diminishing returns that overuse of this type of questioning produces. Third, as adults become more adept in asking open-ended questions they tended to use more of this type of questioning, resulting in a decrease in asking close-ended questions.

In many of the instances of the adults identifying referents, they would often ask close-ended questions such as, "Is that a pig?" As these types of questions continued throughout the reading sessions, qualitative analysis revealed that children appeared to become bored at being quizzed, and did not respond as readily nor as enthusiastically as the sessions went on. Adults seemed to recognize this and decreased the number of these types of questions toward the end of their sessions. Therefore, close-ended questioning might have reached a ceiling of utility within this activity.

That both open and close-ended questioning in shared reading increased was not surprising, as previous research has indicated that questioning techniques can be taught and learned readily (e.g. Lonigan & Whitehurst, 1998; Whitehurst & Lonigan, 1998).

However, the degree to which the adults in this study began to creatively employ this strategy was intriguing. Instead of using questions to identify referents (close-ended questions) as means to an end, the adults used close-ended questions to assess a child's current knowledge and then followed by asking an open-ended question that extends dialogic conversation.

In analyzing the videotaped interactions between adults and children, I found that the adults' use of open-ended questions often focused on asking about their children's *thinking*. Asking questions such as, "what do *you think* is happening?" or, "What do *you think* is going on here?" revealed an intentional mind-mindedness. Moreover, mindfulness played an important role in questioning, as adults seemed to be asking creative, thoughtful and purposeful interrogatories. It is not terribly surprising that open-ended questioning was able to maintain a linear trajectory, while close-ended questions might have reached maximum utility at Time 2 and not beyond. These adults seemed to realize that open-ended questions create in the ZPD a space to focus on their children's thinking. This reciprocal interaction that allows children to be actively engaged in shared reading is rewarding to both children and adults.

I observed that using Explaining and Enhancing Engagement as means of scaffolding appear to be affected by the intervention in a similar fashion as above. Because of similarities in the profiles of change in these strategies, it makes sense to present them together. Use of both of these strategies had sharp and significant increases from Time 1 to Time 2, and significant, but not as sharp increases as from Time 2 to Time 3 (see Tables 26 and 30). These were, again, non-linear, as the quadratic test was significant. This result can be attributed to several factors, and among them is that there is

a threshold of how much scaffolding one can do in any one session and maintain the attention of the child. It appears that immediately after the participating adults learned scaffolding strategies and applied them, there is sharp increase of scaffolding use from Time 1 to Time 2, because they had not been exposed to a mind-minded and mindful approach to child development. However, after they have been exposed to these scaffolding strategies for a period of time, the differences are not so severe at Time 3, albeit they are still significantly different.

Initially, I hypothesized that the intervention's effects would take a more negative parabolic look (an upside-down u) where Times 1 and 3 would be lower than Time 2, indicating that the intervention worked in the short term, but in the long-term, the intervention's participants would be unable to maintain the use of scaffolding and the use of these techniques would decrease between Times 2 and 3. As these analyses indicate, the number of times the adults used Explaining and Enhancing Engagement strategies did not decline, it merely increased the number of uses of these strategies at smaller rate than the previous changes from Time 1 to Time 2. Triangulation of the quantitative analyses with the qualitative analyses indicated that both Explaining and Enhancing Engagement took interesting forms. Most exciting were the truly goofy and silly acting out of the book's characters, events, and even of events not related directly to the book. Additionally, the adults' Explaining took nuanced forms, as I encouraged them to always be creative in what they could explain.

The results from analyzing the Commenting outcome were, along with open-ended questioning, linear and due to the intervention. Treatment and Control conditions were not significantly different from one another at Time 1, nor did the Control condition

change significantly at from any time point to the next, nor overall. However, the

Treatment condition group changed significantly in making more Comments from Time

1 to Time 2, and from Time 2 to Time 3. This change took the form of a linear slope, as

opposed to the curvilinear slopes seen in the results of HLM's for Close-ended questions,

Enhancing Engagement and Explaining (Time 1 to Time 2 change was not significantly

different from Time 2 to Time 3 change) indicating that Commenting continued to

increase at a similar rate. Qualitative analysis, triangulated with the results above,

indicated that commenting was an important part of the overall scaffolding interactions.

When analyzing these data, Commenting seemed to be the least important aspect of these

interactions, as they were often used to acknowledge a child's response and not used to

encourage novel thinking in the child. However, the utility of Commenting should not be

underestimated, as its use extends conversation and provides opportunities when,

combined with other scaffolding strategies. The importance of combining scaffolding

techniques will be considered in the Model Revision section below.

The quantitative results alone seem to bolster the case that the Cartesian

deconstruction of the shared reading activity setting, while providing valuable insight into

each individual contributor to the process, might not be fully accounting for the complex

gestalt of the interactions within a dyad. As a social constructivist I find it increasingly

important to not only identify the constituent parts that do make up the whole, but to also

identify what is contributing to their functioning at a more optimal level together than as

singular elements in isolation.

Model Revision

In discussing the combined findings and results from our analysis, we found that the use of the scaffolding strategies in isolation (e.g. giving a single piece of instruction and then moving on) did not provide nearly the cumulative effect of serial scaffolding. For example: An adult asking an assessment question, then using that response to form an assistance question, then using the child's response to identify about what they could comment or offer dynamic explanations while incorporating gestures and changes in voice, tone and pitch can be powerful. I borrow a term from the field of economics here, in that this serial use of scaffolding creates a *multiplier effect* (Samuelson, 1947) wherein each use of scaffolding in succession multiplies the positive effects of scaffolding on active-child engagement beyond the initial investment. I am aware of my use of an econometric (i.e. quantitative) term to describe a finding through mixed-methods analysis, but future quantitative research can confirm the theory that a more involved, focused, attentive, mindful and mind-minded interaction over a relatively short period of time (e.g. 30-45 seconds) can yield much more development, engagement and interest than the same amount of time spent in using any of the scaffolding techniques individually.

The emphasis here is on the difference between being mind-minded and mindful and just knowing scaffolding techniques. Much of this research was designed as a more culturally and contextually sensitive improvement on Whitehurst and Lonigan's (1998) use of *dialogic reading* as a way to encourage low-income families to use questions to facilitate dialog while reading. However, they seemed to have left out what I view as the most crucial of elements when working with others: intersubjectivity, mindfulness and

mind-mindedness. Through opening adults' minds to the possibilities for creativity when taking their children's thinking as the object of their own thinking, they display an approach to interacting I have termed *mindful-mindedness.*

Mindful-mindedness

Mindful-mindedness as a theoretical construct is the merging of mind-mindedness, mindfulness, metastrategy selection and intersubjectivity into a system of operating in which the optimal conditions for enhancing the active child engagement and interest are met. However, it is not merely the repackaging of previously established theories, as it leverages the results and findings we have seen above to create a novel understanding of mentoring. Specifically, once a shared understanding has been achieved (the baseline for meaningful interactions), the metacognitive activity of thinking creatively about the child's thinking, selecting a strategy and applying this strategy in the interaction *in series* creates a multiplier effect on the quality of the activity. Thus, a revised model is proposed in Figure 17 indicating the introduction of this novel construct.

Mentoring Model of Learning to Read in the Zone of Proximal Development

Guided Participation & Scaffolding
Questioning, Instructing, Explaining, Commenting, Cognitive Structuring, (both Verbal & Non-verbal Communication) and others

Mindful-mindedness:
• Intersubjectivity
• Mindfulness
• Mind-Mindedness
•Metastrategy Selection
Combined and applied in series creating a *multiplier effect*

Dialectical Learning

Adult

MINDFUL-MINDEDNESS

Child

Dialectical Learning

Continual assessment of child's engagement, interest, intentions, knowledge and ToM

Continual assessment of parent engagement, intentions, learning emergent literacy skills, vocabulary development, oral language development, ToM development

Active-child Engagement and Interest
Asking questions, Modeling, Feedback, Commenting, (both Verbal & Non-verbal communication), and others

Figure 17. Revised Mentoring Model of Learning to Read in the ZPD.

As we can see, mindful-mindedness has replaced the bidirectional arrows once depicting mind-mindedness and mindfulness. Additionally, the bidirectional interaction establishing intersubjectivity has now also been subsumed within the construct of mindful-mindedness. The horizontal arrows depict the influence of this construct on the individual mental processes *within* the individuals participating in the interaction. However, the most important of the revisions to the theoretical model is the addition of the vertical arrows representing mindful-mindedness's effect on the processes *between* individuals.

Previously (Wiles, 2008), I had theorized that the dialectical cognitive processes within the individual actors were mainly influenced by Guided Participation and

Scaffolding processes contributed by the adult, and the Active-child Engagement and Interest contribution of the child respectively, while intersubjectivity, mind-mindedness and mindfulness were relegated to underlying factors in the initial mentoring model. Upon a reframing of the model based on the results and findings in this study, the construct of Mindful-mindedness assumes its rightful place in the hierarchy as the keystone of optimal performance in the ZPD. That this construct is placed spatially in the center of the figure is no mistake. It holds the most importance in spatial orientation, as well as in terms of importance regarding the possibilities for development. To put it simply, it is the centerpiece around which all other meaningful interactions revolve.

Reflection

This work has been both tremendously rewarding and staggeringly difficult. I often tell people that I proposed this research on the premise that the families I intended to target had been ignored due to the inherent difficulty in reaching them due to geographic, socio-cultural-historic and other risk factors. It turned out that due to geographic, socio-cultural-historic and other risk factors this population *was hard to reach!* I cannot emphasize enough how much the work and enthusiasm of the participating families, and my research assistants, made these results and findings possible.

Most importantly, I would be remiss if I did not mention the tenacity and passion of my participants once I had reached them. My belief in them as individuals with minds, who wanted to make a difference in their children's lives seemed to resonate with them. As required by this research, I focused my results on what changed in my participants over time. However, perhaps the most important change was in the way *I think* about

those living in poverty, with multiple disadvantages, and these parents' and guardians'

simple desires to be good mentors to their children. I am humbled by their willingness to

put themselves on display via videotaped reading, answering my questions, and going

outside their comfort zones to help their families. They deserve our attention and respect.

  Participant feedback. While it was so rewarding to interact with these families

in the context of encouragement and fostering growth in their children, I was struck by

the reaction of so many of them when I informed them that I was asking them to be

creative in what they did in the context of shared reading. They were thrilled! If we are to

truly incorporate the work of Langer (1989, 2000) on mindfulness, we need to emphasize

the thrill and ownership of being creative. It seemed that so many had not been asked or

encouraged to be creative in many years. In fact, I posed the question, "When was the last

time someone asked you to be creative?" to many of the participants, and the

overwhelming response was, "in elementary school". Moreover, the programming they

had experienced, as families in need, had been so prescriptive and rigid that almost all of

my participating adults explained that a top-down approach was what they were used to

and that it was going to take some time to remember how to be creative. It was moving to

have rekindled creativity in these adults, as they were appreciative of the encouragement

and my belief in their abilities.

  Additionally, many of the participants, including those who completed the

intervention after data collection as part of the control condition, mentioned how much

they had changed as a result of the intervention. One of the more powerful examples was

a parent explaining to me that her new way of thinking, mindful-mindedness, was spilling

over into other areas of daily interaction, which is exactly what Rogoff (1990, 1997,

1998) theorizes and has empirically demonstrated through her work on her own theory of guided participation.

Finally, the most important piece of feedback the adult participants provided was that they found the scaffolding techniques incredibly difficult to apply at first. Several of them indicated that they thought during the presentation sessions that it would be relatively easy to follow the program's curriculum. However, during the practice sessions several adults commented that it was harder than they had initially perceived. It was actually quite amusing to almost everyone involved because they were recognizing how challenging it had been versus their level of expectation of the difficulty. Part of this feedback is because the video clips shown to participants were of teachers experienced in using scaffolding techniques with children. They made it look easy.

To their credit, the participating adults took the initiative and challenged themselves to be creative. I encouraged them to take their time and remember that the book was the object around which the mentoring, teaching, and learning was revolving. This seemed to resonate with the participants and they seemed to appreciate my flexibility with them in the sessions.

Congruence. The most important reflection I have had is that my own congruence in working with my research assistants, coordinating with the Head Start site administrators and delivering the program in exactly the same manner (i.e. a mindful-minded one) is what contributed to these successful outcomes. When designing the study, I heavily emphasized the congruence between what I was hoping my participants would do with their own children and what I would do when presenting the intervention. This is by no means condescending, as a mindful-minded approach can be taken in any situation

wherein individuals are teaching and learning together.

My congruence in modeling this approach during the intervention seemed to help the participants understand the creativity, flexibility and emphasis on building their competencies through scaffolding. I paid attention to their thinking, tried to anticipate what could assist them through the ZPD and used every single one of the strategies I presented for them to use with their children as I was presenting the curriculum. However, it did not end there, as I encouraged their creativity while being open to different ways of thinking and doing. For example, when confronted with a pair of adults who were illiterate, but concerned enough for their children's development to sign up for a reading intervention study, I was pushed to think about their thinking in ways that were challenging. Beyond that, I was pushed to think about their thinking-about-their-children's thinking. Even further, I was thinking of creative ways to provide an emotionally safe and secure, encouraging environment for them to learn how to scaffold their children's cognitive development around reading, while lacking the primary skills themselves.

These adults did perform relatively similar levels of scaffolding and mind-mindedness as their more literate peers. They used the book as a reference point and made their own stories out of the pictures in the book. In some ways, this approach was even more creative than their peers, as they were not using the words of the book to guide them and they were forced to use their imaginations to provide a story for their children.

Summary. The addition of mindful-mindedness to the model provides researchers, practitioners and policy-makers with a (hopefully) useful construct to guide their respective activities. I believe that merging the important and truly meaningful

theories of scaffolding, mind-mindedness, mindfulness, intersubjectivity and metastrategic knowing is useful. Moreover, mindful-mindedness simultaneously accounts for the style with which scaffolding behaviors are applied, and the mental processes occurring within a dyad. My hope is that this construct will assist in our understanding of human development in the ZPD.

Implications for Policy and Practice

Because this congruence was so important in my own delivery, it would seem to follow that moving forward a teacher education component would be a reasonable next step. Powell, Diamond and colleagues' (Powell & Diamond, 1995; Powell, Diamond, Bojczyk & Gerde, 2005) work on home-school congruence and Head Start teachers' perspectives on early literacy emphasizes the importance of both of these environments being as close in principles, goals and approaches to child development as possible. It follows that providing this curriculum to both parents and guardians of young children and their partners in the school system including teachers, family service workers, family educators and school counselors, could have implications for children's social and cognitive outcomes.

However, only applying this theoretical model in the domains of early childhood education and parenting limits its potential. While I developed the construct via research in the Head Start shared reading context, good theories are portable and I hope to be able to demonstrate this in the future. Practitioners and policymakers from the classroom to the boardroom can begin providing individuals with the encouragement, incentive and desire to be creative in response to others' input and move away from some of the

prescriptive and restrictive approaches taken in a multitude of human development domains across the lifespan.

Limitations

While this study is strong in its methodology as a randomized controlled trial, there are limitations to what we can conclude from this research. First, the dropout rate is of serious concern. While I was able to get an ample number of participants, this took two separate years, and included a final data collection of 50 individuals out of more than 120 who signed informed consent forms. The population, Appalachian Head Start Families, is indeed hard to reach, and consultation with administrators, Education Specialists, Family Educators, Family Service Workers and teachers indicated that my ability to get even a few, let alone 50 people to participate should be considered a triumph. However, I consider the dropout rate a limitation nonetheless.

Another limitation is that the random assignment was conducted at the individual level, as opposed to location. Because of the different number of individuals from each of the locations and the potential differences between the demographics at these locations, I decided to risk the chance of contamination between the treatment and control conditions to offset the possible inequities at the center level. However, it did not appear that contamination was a factor, as the Control condition did not change across measurements of most of the outcomes. Future research might randomize at the center level and thus be able to control for contamination.

The most important limitation is the lack of a true measurement for the child outcomes related to the intervention. While losing the PALS data was unfortunate, both the PALS and COR are used for screening and thus are limited in use as outcomes for

multiple reasons. First, they are designed to identify the deficiencies in each child's development so that teachers can target these domains, so any measured effect of the intervention on the domains of interest could very well be due to the intentional targeting of these deficient domains. The intervention specifically targets extension of thinking and learning, and the COR is not the appropriate measure to assess how well children are changing in their ability to move through the ZPD, which is the study's aim.

Additionally, the PALS is a screening that does not identify the level of proficiency of children's skills unless they have reached a threshold, thus severely limiting the utility of the PALS as an instrument in this type of research. Results of the Brigance Preschool Screen – II (BPS-II) would have been useful, however, these data were only collected at the beginning of the school year, as opposed to at the beginning and the end as I understood it to be. A major issue contributing to this is the need for a trained professional, such as a school psychologist, to perform the testing. This can often be cost prohibitive, as it is not inexpensive to test every child enrolled in Head Start. Thus, they only use the BPS-II at the beginning of the school year. To address this limitation, a more comprehensive and robust measure of the kinds of outcomes of interest, on a scale with variability on the dependent variable at each time would be useful. As indicated in the discussion above, the lack of variability of the COR outcomes at Time 3 violated one of the fundamental assumptions of statistical tests, that there be variability in the errors of the dependent variable (normality). Combined with the intentional targeting of the deficiencies in certain domains as identified by the COR, an instrument designed as an indicator of current level of development, as opposed to a screen, would be much more useful.

Areas for Exploration and Future Research

One of the more salient directions for future research is to understand exactly what the participants in the study found most important. While I had multiple conversations about the effect of the program on the reading, teaching, and learning implications of the intervention with participants, it was not a methodical and intentional investigation. To understand what is making a difference in the program requires a true evaluation of the program's reception with participants, not just the effects on their behaviors. Because the results were largely successful, I am encouraged, but a more comprehensive, structured, and intentional program evaluation would yield a much broader understanding of what made a difference, what did not and what could be done to improve the curriculum for it to be more effective and accessible.

The most pressing area for future research is to develop a reliable and valid measure of the *child's* contribution to the shared reading activity setting. The necessity of limiting the scope of this research to something that could be completed as a dissertation required choosing between the children's contributions and the adults'. Because previous work had already identified a coding scheme, and I had experience in both coding videos, and training others to code, it made sense to target adults' use of scaffolding. However, moving forward, much information could be garnered from the large amount of data collected here. I plan to pursue this line of inquiry upon publication of the results of this study.

An important direction for future research is in the domain of implementation science. My colleagues at the Office of Planning, Research and Evaluation have encouraged me to pursue this line of research and publication to inform policy and

practice, especially for those working with Head Start families. These families present unique challenges and my research team's experiences could, at the very least, inform future Head Start Graduate Student Research Grant awardees' practices in recruitment, retention, and program implementation. I have already begun work on framing my implementation science experiences within the Knowledge Application Implementation Systems (KAIS) Theory (Ramey & Ramey, 2007) and look to develop that as yet another offshoot of this research effort. My hope it that this can also influence practitioners such as those in Cooperative Extension as well as applied developmental psychology and human development scholars.

The most important implication for future research focuses on decreasing the curvilinear fit of the outcomes as revealed in the MLM, which indicate that there might be a decrease in the intervention's efficacy over time. While the fact that there were not *decreases* after Time 2 remains encouraging, one cannot help but be concerned that measurements beyond Time 3 might indicate a decline in a mindful-minded use of scaffolding techniques the further removed they are from the intervention's delivery. Providing "refresher" courses and professional development opportunities might assist with this. Additionally, take-home materials for parents / guardians with reminders of the importance of a mindful-minded approach as well as using this approach in everyday interactions with these adults could serve as a model and reminder.

Lessons learned. One of the main questions, when reflecting on a project of this magnitude is to evaluate what I would do differently if I were given an opportunity to conduct this research again. First, I would focus much more on retaining my participants by seeking a more 21st century approach to scheduling. For example, texting with

participants was largely more effective in reaching them than the traditional phone call. Additionally, in today's world, almost everyone has an email address. Even many of the rural Appalachian families have internet access and it took me too long to realize that I could use email as an alternative means of scheduling and retaining participants. If I had a do-over I would have leveraged this method of communication and scheduling from the outset.

Second, providing refresher courses, reminders, and even social functions (with food, prizes, and activities) to promote continually using a mindful-minded approach to child development through scaffolding could help alleviate the curvilinear trends seen in many of the scaffolding outcome measures over time. Providing parent development and curriculum reminder sessions might significantly contribute to maintaining this style of parent-child interaction.

Third, I would work very hard at connecting more with the practitioners at the Head Start facilities. While I tried to strike the delicate balance between placing a burden on the teachers, and earning their respect and approval through working *with* them, I think that I erred on the side of caution. Upon reflection, I might have been able to be more effective had I invested in the teachers as partners as opposed to merely asking them to let me use their space and work with their families. Again, this is such a delicate balance and I strived to do my best an inexperienced social scientist, but in the future I would spend much more energy in the planning stages assessing the needs of the stakeholders. From administrators to faculty, building relationships with the community of practitioners so as to include them as important stakeholders could have benefited the entire process of this applied research.

The ideal future research would, along with the changes above, also include both a larger number of participants from more diverse backgrounds, as well as a much longer timeframe for data collection. Following these families throughout preschool, kindergarten and elementary school could contribute greatly to improving the curriculum, understanding for whom this intervention is most effective and what, if any, the long-term effects of the intervention curriculum are on child outcomes. In essence, a full-fledged, large scale, multi-year research and evaluation effort would be the ideal next step. However, the reality of this stage of my academic career necessitates that I take a more pragmatic approach to developing my program of research and continue to partner with Head Start, Cooperative Extension, and other early childhood education providers to further develop, refine and expand the curriculum.

Appendix A: Recruitment Letter

Dear Parents,

I am a doctoral student in Human Development at Virginia Polytechnic Institute and State University (Virginia Tech). I would like to conduct my dissertation research in your child's Head Start program. The purpose of my research is to explore how adults and children in Head Start families read together. The information from my study will increase our understanding of young children and will help in developing better programs to teach children.

I will ask you to attend two 1.5 hour sessions on reading with your child and then ask you to allow me to videotape you reading with your child. Additionally, I will ask you about the program's delivery, your thoughts about reading and for access to your child's scores on the PALS and COR tests administered by Head Start.

I would like to invite you to participate in this study. All information will be held as confidential. All names in the study will be referred to with a code name. Only the researcher, research associates, and the committee chair will have access to the actual original data or information. All audiotapes and videotapes used for the research will be destroyed seven years after the study. You are also free to withdraw your child without explanation.

I sincerely hope that you will consent to your child's participation in the study. Please sign the enclosed consent form and return it to your child's teacher. If you have any concerns or questions regarding the study, please feel free to contact me, Bradford Wiles, at bwiles@vt.edu or at 540-231-9270 or Dr. Victoria Fu at 540-231-7896.

Sincerely,

Bradford B. Wiles, M.S.

PLEASE SIGN AND RETURN THE ATTACHED FORM TO YOUR CHILD'S TEACHER BY 11/23/10

Appendix B: Informed Consent Form

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Informed Consent for Participants in Research Projects
Involving Human Subjects

Title of Research Project: Shared Reading, Scaffolding and Mind-mindedness among Rural Head Start Families

Principal Investigators: Dr. Victoria Fu, Department of Human Development, Virginia Polytechnic Institute and State University and Bradford Wiles, M.S., Graduate Research Assistant, Department of Human Development, Virginia Polytechnic Institute and State University

I. Purpose of this Research/Project

The purpose of this study is to assess the effects of a shared reading program on how parents scaffold their children when reading together and parental mind-mindedness of children as individuals with a mind. It seeks to provide home-based Head Start families with a program to help children and parents develop their cognitive and social-emotional skills. There will be 10 subjects participating in the pilot study and 80 subjects in the research program.

II. Procedures

You will take part in the above-mentioned program. Your participation in this program will involve a single two-hour program and four approximately 15 minute video taped reading sessions with your child. The programs will be implemented in Blacksburg city, Christiansburg city and Pulaski County Head Start centers in Southwest Virginia. You will also answer a questionnaire about your child and will allow researchers to access your child's Head Start assessments and demographics.

III. Risks

The risks with being part of this study are minimal.

IV. Benefits

No promise or guarantee of benefits has been made. Data collected during this study will be used only for research at Virginia Tech. If the data from the sessions are used in public, the above principal investigator will contact me to talk about the findings and will give me a copy of the written report.

V. Extent of Anonymity and Confidentiality

Only the above principle investigator and her research team will know your identity. You will not be identified in any publication resulting from the program. The information collected from you during this study will be kept secret. The above-mentioned session will be videotaped. The principal investigator and her research team will be the only people that can see/hear the recorded session and it will be stored securely.

VI. Compensation

You will receive a children's book for participating in this study and will be given a DVD of each recording of you reading with your child.

VII. Freedom to Withdraw

Your participation in this study is entirely voluntary and that if you chose not to participate, there will be no penalty or loss of benefits. If you want to quit the study, any information about you and any data that you gave will be erased.

VIII. Participant's Responsibilities

You voluntarily agree to participate in this study. You have the following responsibilities: to participate in a *Reading to Share* Program, as described in Section II above.

IX. Participant's Permission

I have read and understand the *Informed Consent* and the conditions of this study. I have had all of my questions answered. I acknowledge the above and give my voluntary permission:

_____ Date _____
Signature of Participant

_____
Printed Name

_____ _____
Contact phone and email   *Child's Name*

_____ Date _____
Signature of Principal Investigator

_____
Printed Name

Do you prefer text messages? _____

Should I have any pertinent questions about this study or its conduct, or participants' rights, I may contact:

Dr. Victoria Fu, Principal Investigator	540-231-4796, vfu@vt.edu
Bradford Wiles, M.S.	540-231-9270, bwiles@vt.edu
Dr. Shannon Jarrott	540-231-4794, sjarrott@vt.edu
Dr. David Moore Chair, Virginia Tech Institutional Review Board for the Protection of Human Subjects Office of Research Compliance – 000 Kraft Drive, Suite 2000, Blacksburg, VA 24061	540-231-4991, moored@vt.edu

Appendix C: Reading to Share Protocol Checklist

Materials List:
-name tags
-markers for name tags
-packets (informed consent, handout, questionnaire, survey)
-individual copies of Moose book

Session 1

Introduction: **(15 min.)**
-Pass out Handout
-Goals of program
       -develop and foster a sense of community among the families involved
       -encourage an equal amount of participation from parents
       -benefits of shared reading
-Participants' goals for participation (5 m)
-Questions? (3 m)

Icebreaker: **(5 m)**
-Parents pair up, face one another, ask them to turn around and change something about their appearance. Turn back around, notice any differences?

Discussion
- Mind-mindedness **(15 m)**
   -refer parents to handout and glossary
   -define scaffolding
   A. Introduction/Definition
   B. *Video clip [021709 Maroon, Blue Informal, 40-57]
     Explanation (8 m)
   C. Activity: Discussion in pairs
        a. What could the reader have done differently when reading the book? What impact does this have on the child? (4 m)
           i. Visit each group and ask question (2.5 m)
- Questioning **(20 m)**
   A. Introduction/Definition (3 m)
     -Mention assessment and assistance
   B. *Video Clips [tadpoles-assessment, pomps-, dragonflies-]
     Explanation after each clip (10 m)
   C. Activity: New partners, assign a child/reader, read buttons/needle page from moose book & ask an assessment question and then an assistance question (5 m)
       Ex: Ask parent to say, what could the character be thinking about?
      1) What do I need to find out from the child about their thinking (assessment question)?

2) What is an appropriate follow-up question (assistance question) given what I now know about the child's thinking?
- Modeling **(10 m)**
    A. Introduction/Definition (2 m)
    -Encourage participants to model positive reading and social behaviors during the sessions and when reading with their children.
    -You are always modeling

    B. *Video Clips [shudder, lobster] (2 m)
    Explanation after each clip
    C. Activity: New partners, assign a child/reader, 1-read from moose book ex: sock puppet 2-antlers stick out (5 m)

Wrap Up: **(5 m)**
- Overall review scaffolding techniques
- Get parents to ask questions & practice skills
- Get parents to fill out possible results of children on handout
- Review homework assignment
    o Read at least 3 times with child; emphasizing questioning and modeling. When using questions try to remember to ask assistance (e.g. why/how).
- Parents to sign up for next session

Reading to Share

***have definitions/glossary for handout 2*
***hone cognitive structuring*

Materials List:
-name tags
-markers for name tags
-packets (informed consent, handout 2, questionnaire, survey)
-individual copies of children's book

Session 2

Final Time 1 hour 15 min

Icebreaker **(5 m)**
Pair off and read using techniques from previous session and in their homework
        -give one area of improvement/strength

Discussion
- Open Discussion **(8 m)**
    -How did homework go?
    -How did it feel?
    -Were you able to read 3x a week?

-Did you see any differences in how the children responded?
- Instructing **(10 m)**
    A. Introduction/Definition (4 m)
        -encourage practice
        -instruct ways that encourage child
        -tone of voice
        -often see instructing in vocabulary/definitions
    B. *Video Clip [comma] (1 m)
        Explanation
    C. Activity: New partners, work on tone of voice (soft, gentle) when instructing, role play (5 m)
- Feedback **(10.5 m)**
    A. Introduction/Definition (4 m)
        -keep in mind scaffolding and guiding development
        -discuss ways to interweave behavior and techniques
    B. *Video Clip [right] (1.5 m)
        Explanation
    C. Activity: Same partners, provide feedback to one another, act like adult and child, start from beginning of book (5 m)
- Contingency Management **(10.5 m)**
    A. Introduction/Definition (3.5 m)
        -keep child focused on task
        -reward children for positive social-emotional engagement
        -manage contingencies associated with distraction
    B. *Video Clip [pinch] (2 m)
        Explanation
    C. Activity: Same partners, Role play, do distracting feature, anywhere in book
(5 m)

- Cognitive Structuring **(10 m)**
    A. Introduction/Definition
        -prepare children for what they are going to see/hear
    B. Bradford's own example
        Explanation
    C. Activity?

<u>Final Activity</u> **(15 m)**
-Read together, try to use each one of the techniques (6 in total) at least once; then switch

<u>Wrap Up</u> **(10 m)**
-Get parents to fill out survey
-Get parents to schedule videotaping of reading with children

Appendix D: Reading Benefits

READINGrockets®

Helping Your Child Become a Good Reader

By: National PTA (2004)

Parents want the best for their children. Reading can open a window on the world, bringing chances to learn, enjoy and create. Even though schools teach reading and writing, home is the first and best place for your child's love of reading to grow.

Begin to read to your child as a baby. While infants can't understand your words, they love being close to you, hearing your voice, looking at pictures and touching the pages of a book. Singing songs and repeating nursery rhymes and fingerplays will build your child's pre-reading skills. As your child grows, look at picture books and simple stories together. Leave time to talk before, during and after the story.

- Talk about the pictures.

- Ask your child to guess what will happen next. When little children look at picture books, they try to tell a story. They compare what happens in the story with what they know about life. For instance, many toddlers have a hard time learning to dress themselves. Yet they can laugh when a baby bunny puts both feet in the same pants leg.

- Ask if your child liked the story. Why or why not? What was the best part?

- The next time you read the book together, let your child retell the story as you turn each page. Your child will remember more each time.

- Keep a bag with a few of your child's favorite books and some new stories. Take it whenever you go out, in case you have to wait somewhere.

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Browse in : > **Topics A-Z** > **Reading Together** (65)
> **Top Articles new** > ****Reading Together**** > **For parents** (7)

http://www.readingrockets.org/article/146?theme=print

Stay informed! Subscribe to our **e-mail newsletters**.

Appendix E: Curriculum Outline and Notes

Session 1

The purpose of this program is to explore what can and does occur in the Zone of Proximal Development (ZPD) within a shared reading activity. Session 1 will focus on mindfulness/mind-mindedness, questioning, and modeling, among others, as scaffolding techniques that hold potential for extending thinking.

Definition of Terms:

Mindfulness/mind-mindedness: Being open to the potential for developmental change when reading together. Thinking about the possibilities for what could be going on in the mind of the child

Questioning: Asking questions of the child to assess what she knows and/or to get them to think about things they would not have thought about before.

Modeling: Offering behavior for imitation. Demonstrating, through vocal and/or physical means, how something is done.

Instructing: Providing information about how to do something. Offering guidance.

Feedback: Providing information about performance relative to a standard

Contingency Management: Modify a behavioral response by controlling the consequences of that response. (used to re-direct attention).

Cognitive Structuring: Providing ways to think about things, for example: "Whenever you come to a word and you don't know what it is, look at the picture and the words around it that you know. Use these clues to try to figure out what it might be"

On the space provided, please list your goal(s) for participation in the program. These will be used to tailor the program to the needs of the participants.

_____
_____
_____
_____

Mindfulness/Mind-mindedness:

_____
_____
_____
_____

Example(s):

_____
_____
_____
_____
_____

Scaffolding Techniques

Questioning:

_____
_____
_____
_____

Example(s):

_____
_____
_____
_____

Modeling:

_____
_____
_____
_____

Example(s):

_____
_____
_____
_____

Possible results of children reading with an adult:

_____
_____
_____
_____

HOMEWORK:
Read at least 3 times with your child, emphasizing questioning and modeling.
When using questioning, try to remember to ask assistance questions (i.e., why, how).

Video Notes:

Session 2

The purpose of this program is to explore what can and does occur in the Zone of Proximal Development (ZPD) within a shared reading activity. Session 2 will focus on instructing, feedback, contingency management, and cognitive structuring, as scaffolding techniques that also hold potential for extending thinking.

Scaffolding Techniques

Instructing:

_____
_____
_____
_____

Example(s):

_____
_____
_____
_____

Feedback:

_____
_____
_____
_____

Example(s):

_____
_____
_____
_____

Contingency Management:

_____
_____
_____
_____

Example(s):

_____
_____

_____

Cognitive Structuring:

_____
_____
_____
_____

Example(s):

_____
_____
_____
_____

Video Notes:

Appendix F: Child Observation Record Scales and Items

* Note: all items are assessed at three time points during the school year.

Initiative:
Making Choices and Plans
Solving Problems with Materials 3
Initiating Play
Taking Care of Personal Needs

Social Relations:
Relating to Adults
Relating to Other Children
Resolving Interpersonal Conflict
Understanding and Expressing Feelings

Creative Representation:
Making and Building Models
Drawing and Painting Pictures
Pretending

Movement and Music:
Moving in various ways
Moving with Objects
Feeling and Expressing Steady Beat
Moving to Music
Singing

Language and Literacy:
Listening to and Understanding Speech
Using Vocabulary
Using Complex Patterns of Speech
Showing Awareness of Sounds in Words
Demonstrating Knowledge About Books
Using Letter Names and Sounds
Reading
Writing

Mathematics and Science:
Sorting Objects
Identifying Patterns
Comparing Properties
Counting
Identifying Position and Direction
Identifying Sequence, Change and Causality
Identifying Materials and Properties
Identifying Natural and Living Things

Appendix G: Head Start Demographic Questionnaire

Head Start Demographic Data Questionnaire

Adult Sex, Adult Age, Adult Race, Child Sex, Child Age, Child Race

Does the child's other parent guardian live in the house?

How many others live in the house? How many siblings live in the home?

What is the number of hours Parent 1 works per week?

What is the number of hours Parent 1 goes to school per week?

What is the number of hours Parent 2 works per week?

What is the number of hours Parent 2 goes to school per week?

What is the highest level of education Parent 1 has completed?

0=No GED/Diploma 1=HS Degree / GED 2=GED / HS Degree 3=GED / HS / Some College / Assoc / Other 4=College Degree or Above

What is the highest level of education Parent 2 has completed?

0=No GED/Diploma 1=HS Degree / GED 2=GED / HS Degree 3=GED / HS / Some College / Assoc / Other 4=College Degree or Above

Do you receive housing assistance (e.g. rent assistance, utilities assistance)?

What is the primary language spoken in the home?

Do you require transportation for your child to attend Head Start?

What is your annual household income?

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