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Effect of the Banking Time Intervention on Student-Teacher Relationships and Problem Behaviors in Early Childhood

Tara M. Strand Balunis
University of Massachusetts Amherst

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Problem Behaviors in Early Childhood

A Dissertation Presented

by

TARA STRAND BALUNIS

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Approved as to style and content by:

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Kevin J. Nugent, Chairperson

_____

Jennifer Randall, Member

_____

Maureen Perry-Jenkins, Member

_____

**Christine B. McCormick, Dean
College of Education**

DEDICATION

To my husband Daniel Balunis, Jr., our daughter Elizabeth and son Daniel III.

This accomplishment has not been without sacrifice for us all.
Thank you for your support and love throughout this process.

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ABSTRACT

EFFECT OF THE BANKING TIME INTERVENTION ON STUDENT-TEACHER
RELATIONSHIPS AND PROBLEM BEHAVIORS IN EARLY CHILDHOOD

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TARA STRAND BALUNIS, B.S., COLBY-SAWYER COLLEGE

M.ED., FITCHBURG STATE COLLEGE

Ph.D., UNIVERSTIY OF MASSACHUSETTS AMHERST

Directed by: Professor J. Kevin Nugent

This study explored the role of the Banking Time intervention on student-teacher

relationships and problem behaviors in early childhood. Ninety elementary students (5-7

year-olds) were placed in either an experimental or control group. Students in the

experimental group participated in the Banking Time intervention with their classroom

teacher. Students in the control group participated in one-on-one reading sessions.

Students in both groups were evaluated pre- and post-intervention using the Student

Teacher Relationship Scale (STRS; Pianta & Hamre, 2001), Teacher Report Form (TRF;

Achenbach, 1991) and a behavior observation tally form. A sample of students from both

groups were administered a questionnaire pre- and post-intervention. Lastly, teachers

completed a likert-type survey regarding their opinions of the Banking Time intervention

to maintain fidelity pre-intervention and mid-intervention. It was hypothesized that the

Banking Time intervention would help to foster student-teacher relationships and

ultimately lead to decreases in problem behaviors, as measured by the STRS, the TRF

and the behavior observation tally form.

    A significant decrease in problem behavior was found in the experimental and

control group when measuring behavior with the Teacher Report Form. There were no

significant findings to indicate that the Banking Time intervention improved student-

teacher relationships. Implications for future research are also presented.

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CHAPTER 1

INTRODUCTION TO THE STUDY

<u>Overview and Statement of the Problem</u>

The attachment relationship between children and parental caregivers has been
extensively studied in terms of its effects on children's early development. Since Bowlby
(1969) first introduced the theory of attachment, there has been extensive research on the
influence of child-adult attachment bonds on child adjustment, social functioning and
regulation of emotions (Ainsworth, Blehar, Waters & Wall, 1978). However, recent
research indicates that children can form attachment relationships with multiple
caregivers and that attachment quality can differ between caregivers (Howes &
Matheson, 1992). Researchers have begun to examine attachment relationships with
alternative caregivers, such as child-care providers and teachers, as having an influence
on child well being. It has been documented that children can form attachment bonds
with non-parental caregivers and receive support for early development.

In today's society, it is common for more than one adult to care for children and
there is an increasing amount of research on the development of the teacher-child
relationships in the lives of school-age children (Cassidy & Shaver, 1999). Many
researchers agree that student-teacher relationships are extremely important for all
school-going children (Cicchetti, 1989, 1990; Howes & Hamilton, 1992; Pianta, 1992).
Research suggests that student-teacher relationships have a significant influence on
overall school and behavioral adjustment (e.g. Birch & Ladd, 1998). If a student has a
positive and secure relationship with a teacher, then she/he is likely to become more
trusting of the teacher and display better classroom behavior. In fact, a national survey of

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adolescents (Resnick, 1997) revealed that the single most common factor associated with positive youth outcomes was a supportive relationship with an adult, and teachers were among the adults most frequently mentioned as the source of this support. Not surprisingly, the influence that student-teacher relationships have on behavioral outcomes has become an important topic in today's schools (Bryk, Sebring, Allensworth, Luppescu & Easton, 2010; Merritt, Wanless, Rimm-Kaufman, Cameron, & Peugh, 2012).

Several studies have also documented the frequency of behavioral problems occurring in schools. According to Harrison, Vannest, Davis & Reynolds (2012), the median prevalence estimate of conduct problems in children and adolescents is 2% to 3.32%. They also conducted a needs assessment with 119 inner-city elementary teachers from six neighborhood schools and found that 48% believed that disruptive classroom behavior was the largest behavioral concern in their schools. Examples of disruptive behavior included getting out of seat, talking out of turn, arguing, and failing to comply with rules and requests. Another large study examined the most frequent behaviors resulting in office discipline referrals (ODRs). Kaufman, Jaser, Vaughan, Reynolds, DiDonato, Bernard & Hernandez-Brereton (2010) analyzed ODRs for 1,668 students in a large urban city. The most frequent behaviors resulting in ODRs in elementary schools were aggression (i.e. fighting and defiance).

The US Department of Education (2003-2004) conducted a survey of American teachers, asking them to report the number and type of behavior problems that occurred in their classrooms. The reported behaviors included disrespect toward the teacher, verbal abuse of the teacher, student bullying, physical acts among students, and widespread disorder that distracted from the ability of the teachers to teach and the

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students to learn. The most widely reported issue, teacher disrespect, occurred on a weekly basis in up to 30 percent of classrooms. The least reported group was widespread disorder, happening weekly in as many as nine percent of classrooms. In each offense group, the percentage of problems was higher in urban areas and lower in rural areas.

Today most schools are moving beyond discipline and punitive practices for managing behavior problems. One model being used in schools is the Positive Behavioral Interventions and Supports (PBIS) model. Since Congress amended the Individuals with Disabilities Education Act (IDEA) in 1997, Positive Behavioral Supports has held a unique place in special education law. PBIS emphasizes using functional assessment and positive approaches to encourage good behavior.

The Response to Intervention (RTI) model is also being utilized in schools. RTI is a process of systematically documenting the performance of students as evidence of the need for additional services after making changes in classroom instruction. RTI changes the way schools support students with educational and behavioral problems by systematically delivering a range of interventions based on demonstrated levels of need. PBIS is a process that is consistent with the core principals of RTI.

The Banking Time intervention fits into the Response to Intervention model as well as the Behavioral Interventions and Supports framework. It is unique in that the classroom teacher is involved in the intervention with the student(s), instead of other service providers, such as adjustment counselors or a certified behavior analyst. This intervention evolved from methods used in parent training programs designed to enhance parent-child relationships.

During Banking Time, the teacher implements a set regimen of individual time with a target child. The intervention is called "Banking Time" because of the metaphor of saving up "positive experiences" so that the relationship between teacher and child can withstand conflict, tension, and disagreement without deteriorating and returning to a negative state. Thus, the child and teacher can draw upon their accrued relationship capital, and withdraw from the relationship resources that enable them to interact effectively in times of stress (Pianta, 1999).

Topic and Purpose

The purpose of the current study is to examine the effect of the Banking Time intervention on student-teacher relationship quality and on problem behaviors in the classroom. The Banking Time intervention is the independent variable. Student-teacher relationship quality and problem behaviors are the dependent variables. The Banking Time intervention's effectiveness will be tested against one-on-one reading time in a student-teacher dyad. The reason one-on-one reading time with a teacher was utilized for the control group was to discern if simply time spent with a teacher had an effect on the student-teacher relationship and student behavior, of if the effects were due to the intervention. To test the intervention's effectiveness, 12 teachers either implemented Baking Time with a child or children in their classrooms or participated in the one-on-one reading time. Banking Time's impact on student-teacher relationships and student problem behaviors was measured with the Student-Teacher Relationship Scale (STRS; Pianta & Hamre, 2001), the Teacher Report Form (TRF; Achenbach, 1991) and a behavior observation tally form. Pragmatically, Banking Time's effectiveness provided a

particular method for improving student-teacher relationship quality and student behavior in the classroom.

The Banking Time (Pianta & Hamre, 2001) intervention was designed to target student-teacher relationships. It is based on interventions designed to strengthen relationships between children and parents. Parent-child interventions frequently contain a component involving a parent-child dyad interacting in a nondirective, child-centered play session (Driscoll & Pianta, 2010). Banking Time is based on these interventions.

Potential Significance

Supportive student-teacher relationships facilitate positive outcomes in the areas of school adjustment, social-emotional competence and academic performance. Targeting student-teacher relationships may be a direct way of ultimately reducing problem behaviors (Driscoll & Pianta, 2010). This could be accomplished through the implementation of the Banking Time intervention.

Theoretical Framework

The study of student-teacher relationships must be grounded in a theoretical framework that encompasses the various influences on a developing relationship. Attachment theory provides a theoretical framework for the research concerning the importance of adult relationships in the development of young children. Originally proposed by Bowlby (1969), it has been extensively studied by other researchers, particularly Ainsworth (e.g. Ainsworth, Blehar, Waters & Wall, 1978) who developed the methodology most commonly used to assess attachment quality, the Strange Situation Classification.

John Bowlby (1969, p. 194) defined attachment as a "lasting psychological connectedness between human beings." Attachment is an emotional bond or relationship that involves an exchange of comfort, care, and pleasure between the child and the parent/caregiver and provides the child with a sense of security (Bowlby, 1988). Moreover, there is evidence to suggest that the nature of the attachment bond varies depending on the behavior of the caregiver (Card & Hodges, 2003).

Attachment theory is founded upon the idea that when children view their parental/caregiver attachment figures as available and responsive, they feel safe. Bowlby (1969) proposed that maintaining proximity to a protective adult represents a primary mechanism for the regulation of infant safety and survival. Some behavior patterns, such as crying, calling, pursuing and clinging, are instinctive guides that have the biological function of ensuring the protection of young primates. Once an attachment figure has been selected (usually, but not necessarily, the infant's biological mother) the infant closely monitors her whereabouts, and maintains proximity even under non-stressful conditions. If threatening conditions arise, the infant immediately seeks closer proximity and contact (Goldberg, Muir & Kerr, 1995). Moreover, children who have experienced a secure attachment relationship have been found to manifest high self-esteem and are more successful academically than insecurely attached infants (Coleman, 2003).

Conversely, threats to the availability and responsiveness of the caregiver can result in insecure attachment relationships and place the child at risk for dysfunctional behavior. It is believed that the child's earliest and closest relationships most impact the development of mental health and illness and that a child's personality is shaped by early attachment experiences. The quality of parent-child relationships during infancy and

early childhood have been found to contribute significantly to later personality development and the development of psychopathology (e.g. Dozier, Stovall, & Albus, 1999; Green & Goldwyn, 2002; Greenberg, 1999; Weinfield, Whaley, & Egeland, 2004).

According to attachment theory, through interactions with their primary caregivers, young children develop internalized working models of relationships (Bowlby, 1982; Bretherton & Munholland, 1999). These models are cognitive representations of caregivers' availability, responsiveness, and one's worthiness of positive or negative interactions with others. These internal working models influence children's behavior within other relationships (Bretherton & Mulholland, 1999; Sroufe, 1988; Thompson, 1999). They enable reflection and communication about past and future attachment situations and relationships, thus facilitating plans for proximity regulation and the resolution of relationship conflicts (Cassidy & Shaver, 1999). Children's models vary due to differences in parental attachment styles (O'Connor & McCartney, 2006).

Attachment theory usually focuses on a "primary" attachment figure. However, two or three other attachment figures may also play important roles, such as fathers or siblings (Goldberg, et al., 1995). The attachment relationship can also be extended to non-parental caregivers, such as teachers. It is common for more than one adult to care for children in today's society. There is an increasing amount of literature on the development of teacher-child relationships in school-age children (Cassidy & Shaver, 1999).

Attachment Styles

Psychologist Mary Ainsworth created the assessment technique called the Strange Situation Classification in order to investigate how attachments might vary between

children. The goal of the Strange Situation procedure is to provide an environment that would arouse in the infant both the motivation to explore and the urge to seek security. An observer takes a mother and her child (usually around the age of 12 months) to an unfamiliar room containing toys. A series of eight separations and reunions are staged involving mild, but cumulative, stress for the infant (Ainsworth, Blehar, Waters & Wall, 1978).

Through her work with the Strange Situation, Ainsworth described three major attachment classifications. The optimal and most common was the secure type. Securely attached (Type B) infants used their mothers as a secure base for exploration, exhibited varying levels of distress in her absence and greeted her positively upon return (Ainsworth et al., 1978). The next most common was called avoidant (Type A). These infants appeared to explore without interest in their mother's proximity, were minimally distressed by her departure, and appeared to ignore or snub her when she returned (Ainsworth et al., 1978). The third type was called ambivalent or anxious-avoidant (Type C). These infants had difficulty separating from their mother to explore. They were extremely stressed by their mothers' departure and although they sought contact with her when she returned, they did not readily settle down or return to exploration (Ainsworth et al., 1978).

Mary Main and Judith Solomon at the University of California in Berkeley later added a fourth category of attachment, disorganized (Type D). These were infants who were deemed "unclassifiable" in Ainsworth's original system. The disorganized type sought attachment, yet experienced anxiety as a result of the attachment. They experienced anxiety at the disappearance of the mother and were difficult to comfort

when reunited. Disorganized children were ambivalent about reunion with the mother, both approaching and avoiding contact (Main & Solomon, 1986). Bowlby (1969) described these children as arching away angrily while simultaneously seeking proximity when re-introduced to their mothers. Research has illustrated the relationship between early Type-D attachment and later emotional and behavioral problems.

Disorganized attachment has the most significant risk for later psychopathology. This type of attachment is later associated with a range of maladaptive behaviors, including internalizing symptoms (i.e. depression, anxiety) and externalizing symptoms, such as "acting out" (e.g. Lyons-Ruth, 1996).

Attachment to Other Caregivers, Including Teachers

Attachments between mother and child have received much attention, however, it is now understood that children can form attachments to multiple caregivers including teachers and that it is actually an exception for a child to have an attachment to only one caregiver (Howes & Matheson, 1992). Attachment behaviors have been observed in the student-teacher relationship. In particular, attachment behaviors such as proximity seeking and seeking the adult when distressed have been observed for young children with both parents and teachers (Pianta, 1992). This topic will be further explored in the literature review section.

Summary

This study evaluates the effectiveness of the Banking Time intervention, which is designed to promote supportive student-teacher relationships and ultimately reduce

problem behaviors in the early childhood classroom. The Banking Time intervention has its roots in attachment theory and is based on interventions designed to strengthen parent-child relationships. Currently, there are only two published studies illustrating the effectiveness of Banking Time, thus, not enough is known about the impact of the Banking Time intervention on student-teacher relationships and problem behaviors in early childhood.

The remainder of this dissertation is organized into four additional chapters with appendices. Chapter two presents the review of literature; chapter three includes the research design and methodology of this study; chapter four describes the results, while chapter five addresses the findings, limitations and implications of the results of this study. The appendices follow these chapters.

CHAPTER 2

REVIEW OF RELATED LITERATURE

<u>Introduction</u>

The emotional bond between students and teachers is a crucial factor in students'
behavioral adjustment (e.g. Barkley, 2003; Bellanti, Bierman & the Conduct Problems
Research Group (CPPRG), 2000; Birch & Ladd, 1997 & 1998; Driscoll & Pianta, 2010;
Hamre & Pianta, 2001; Howes, 2000; Howes, Hamilton & Matheson, 1994; Pianta &
Hamre, 2009; Pianta, Steinberg & Rollins, 1995; Rabiner, Malone & CPPRG, 2004). A
growing literature base has shown that student-teacher relationship quality is positively
correlated to student outcomes (i.e. Howes et al., 1994; Pianta & Steinberg, 1992). The
possibility that positive student-teacher relationships may alter children's school
trajectories suggests that improving student-teacher relationships may be one way to
intervene for children exhibiting behavioral difficulties in the classroom. The Banking
Time intervention is designed to enhance the student-teacher relationship. The purpose
of the present study is to examine the effects of the Banking Time intervention on
student-teacher relationships and problem behaviors in early childhood.

This chapter will review the literature in the area of student-teacher relationships
and associated outcomes. Longitudinal studies and research findings will be presented.
This chapter is organized into seven main headings:

- Introduction to Attachment and Student-Teacher Relationships

- Student-Teacher Relations Research

- Introduction to Student-Teacher Relationships and Problem Behaviors in Early
  Childhood

- Interventions to Strengthen the Student-Teacher Relationship

- Purpose of the Current Study and Hypotheses.

<u>Introduction to Attachment and Student-Teacher Relationships</u>

The effect of the attachment relationship between children and parental caregivers on children's early development has been extensively studied. Many researchers have also examined attachment relationships with alternative caregivers, such as child-care providers and teachers and their influence on child well being. Research has shown that children can form attachment bonds with non-parental caregivers, such as teachers, and receive supports for early development. During the early school years, teachers may assume a parent-surrogate role with the children they teach (Hamilton & Howes, 1992). Like the parent-child relationship, the teacher-child relationship can be characterized as close and affectionate, distant and formal or conflictual (Howes & Matheson, 1992; Pianta, Steinberg & Rollins, 1995).

The model proposed by Pianta (1999) is an attempt to depict some of the processes involved in a relationship between a child and an adult. The primary components of relationships between students and teachers include:

- Features of the individuals and their representation of the relationship

- Processes by which information is exchanged

- External influences

Relationships incorporate features of the individuals. These include biological factors and processes (i.e. gender and temperament); genetics; response to stress; personality; self-esteem; social skills; and perception of the other person. Teacher beliefs, expectations and perceptions about students may influence relationships, while

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teachers' mental health may also play a role in relational experiences. Lastly, student

characteristics may also influence the relationship. These characteristics include gender,

temperament, social and academic competencies and behavior (Pianta, 1999).

The information exchange process and feedback between students and teachers is

central to the relationship. How information is exchanged, through tone of voice,

proximity, posture and timing is just as important as what is actually said or done (Pianta,

1999).

Lastly, external influences, such as school climate and physical features of the

schools/classrooms, may support or constrain the student-teacher relationship. There is

evidence that school climate and the quality of the student-teacher relationships are

associated (Crosnoe, Johnson & Elder, 2004).
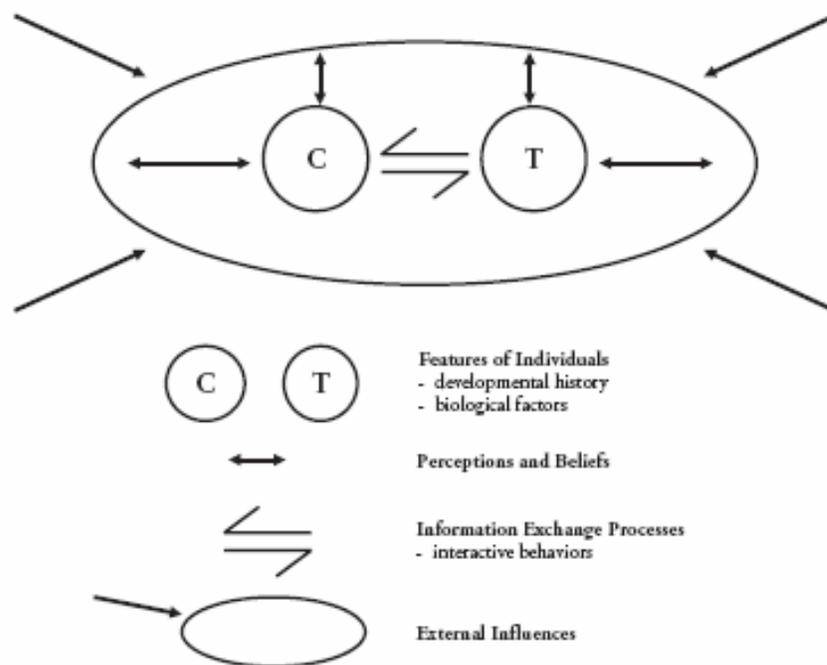
Figure 1: Pianta's (1999) model of a relationship between a child and an adult.

Child-adult and student-teacher relationships are asymmetrical. The child is less mature and is tethered to a more mature individual (in this case, the teacher) that is responsible for its development and survival. Because of this, how the relationship develops and influences the child is biased towards input from the adult. The asymmetry inherent in the child-adult relationship places a disproportionate responsibility on the adult for the quality of this relationship (Pianta, 1999).

Relationships with teachers influence many school-related outcomes (Birch & Ladd, 1996; Howes, Matheson, & Hamilton, 1994; Pianta, 1992; Wentzel, 1996). Student-teacher relationships influence children's competencies with peers in the classroom (e.g., Howes et al., 1994) and their trajectories toward academic success or academic failure (Birch & Ladd, 1996; Coleman, 2003; Pianta, Steinberg & Rollins, 1995; van IJzendoorn, Sagi, & Lambermon, 1992). There is research suggesting that student-teacher relationships influence child adjustment across all grades, beginning in preschool (Bryk et al., 2010; Pianta, 1992; Lynch & Chicchetti, 1992).

 For the purpose of this dissertation, the adult who cares for children, either in a child-care setting or in formal schooling will be referred to as the teacher. The term teacher will refer to any alternative to the parent caregiver in a formal educational or child-care setting.

Student-Teacher Relations Research

There is increasing interest in the role of adult-child relationships beyond those of parent-child relationships (Pianta, 1992). Most children are in frequent contact with adults in addition to their own parents. As the need for dual-family earners increase, more children are being placed in child-care settings and the interest in attachment with

non-parental caregivers has increased. Most North American children spend some part of their life in some form of child-care prior to entering formal schooling. According to the U.S. Department of Education in 2012, 64.3% of three-, four- and five-year-old children were enrolled in a pre-primary or child-care program. As children reach school age, teachers play an important role in their development. Schoolteachers constitute a group of adults with whom children have extensive involvement with for at least nine months of the year beginning at age five. Teachers may assume a variety of roles including caretaker, mentor, disciplinarian and companion (Pianta, 1992).

Research in the area of student-teacher attachment range from attachment studies with child care providers to studies with school teachers. It has been found that, as with their parents, young children seek proximity and reassurance from familiar non-parental providers when they are distressed and that adult caregivers can also function as attachment figures (Barnas & Cummings, 1994; Farran & Ramsey, 1977; Fox, 1977; Goosen & van Ijzendoorn, 1990). Children cared for by these alternative adults can form both secure and insecure relationships with them (Howes, Galinsky & Kontos, 1998).

Features and Measurements of Student-Teacher Relationships

Researchers have made great strides in describing the key features of the teacher-student relationship (Howes & Hamilton, 1992; Howes & Hamilton, 1993; Howes & Matheson, 1992). Pianta and Steinberg (1992) have attempted to define qualities of the teacher-child relationship using teachers' perceptions as indexed on the Student-Teacher Relationship Scale (STRS). The STRS is currently the only standardized and validated instrument available for assessing teachers' perceptions of student-teacher relationships.

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This STRS has undergone extensive development and revision in many studies over the course of the last 17 years (Pianta, 1999).

Development of the STRS was prompted by interests in (a) teachers' own emotional and social experiences with children in their classrooms, (b) applications of attachment theory in school settings and (c) the contribution of relationships with adults to students' academic and social competence (Pianta, 1999). The STRS is a teacher-report instrument designed for teachers of children between the ages of 3 and 12 which measures a teacher's perception of conflict, closeness, and dependency with a specific child. The scale is a five-point likert-type measuring instrument.

Pianta and Nimetz (1991) developed the pilot version of the STRS in a sample of 24 teachers and 72 children from kindergarten classrooms. After the initial pilot, a second version was developed that contained 31 items and has been used extensively in many large-scale national studies, as well as in more regional and local studies, with children from age three through nine years (Saft, 1994). These studies provide much of the psychometric information available on the STRS (Pianta, 1999).

The first of these studies used the STRS with more than 400 kindergarten children and their 26 teachers (Pianta & Steinberg, 1992). Initial analyses found that five dimensions accounted for the teachers' perceptions of their relationships with their students: Conflict/Anger, Warmth/Closeness, Open Communication, Dependency and Troubled Feelings (Pianta, 1999).

Work with the STRS focused on refining the factor analyses. Research suggested that a three-factor solution was most practical (Pianta, Steinberg, & Rollins, 1995; Saft, 1994). The three factors are closeness, dependency and conflict/anger. The work on

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which these factors are based includes more than 1,400 child participants and more than 200 teachers from classrooms and preschools across the United States (Saft, 1994). This sample nearly matched the U.S. census in race, a wide range of socioeconomic statuses, as well as a wide age range (Pianta, 1999).

"Closeness" encompasses the degree of warmth and open communication that exists between a student and teacher and may function as a support for young children in the school environment. Having a secure relationship with a significant figure in the classroom may facilitate positive affect and attitudes towards school (Birch and Ladd, 1997).

"Dependency" is the second feature of the student-teacher relationship. Dependency refers to "clingy" behaviors that are indicative of an over reliance on the teacher as a source of support. Children who are overly dependent on the teacher may be hesitant to explore the school environment, including pursuing other social relationships. Feelings of loneliness, negative feelings and attitudes about school are more common in children who display higher levels of dependency on the teacher (Birch and Ladd, 1997).

Children who are dependent on their teachers may be hesitant to explore the school environment (e.g. peer interaction) because they are less mature or less ready to meet the social demands of school. Children who express a desire to leave the classroom or stay home, may turn to the teacher as a source of comfort or security. In this fashion, the teacher may be serving as a substitute primary caregiver in the school environment (Birch and Ladd, 1997).

"Conflict" in the teacher-student relationship may function as a stressor for children in the school environment. Conflictual student-teacher relationships are characterized by

negative interactions and a lack of rapport between the teacher and student. Students who experience a great deal of conflict with the teacher limit the extent to which they rely on the teacher as a source of support. Furthermore, this conflictual relationship may foster feelings of anger or anxiety in students, thus causing them to become withdrawn. This may even promote feelings of alienation, such as loneliness and negative school attitudes (Birch and Ladd, 1997).

The STRS is an instrument that is sensitive to student-teacher interactions. Its normative base of more than 1,400 children of varying ages and backgrounds makes it probably the most psychometrically advanced instrument available for the assessment of relationships between students and teachers. However, the STRS is limited by the fact that it only assesses relationships from the teacher's perspective (Pianta, 1999).

Teachers as Alternative Attachment Figures

Teachers can also serve another important role for their students. It is possible that teachers function as alternative or secondary attachment figures. The formation of attachment relationships with teachers may be particularly important for children coming from stressful family environments. Positive and secure relationships with teachers may compensate for negative relationship histories by providing new information for these children's representational models of themselves and others (Pianta, 1992). Therefore, high-quality relationships with teachers may serve as compensatory care-giving relationships for children with insecure maternal attachments (Howes & Hamilton, 1992).

However, the way that schools are structured can make it difficult for school-age children who have experienced maltreatment to form intimate relationships with teachers. During the elementary school years, children change teachers every year. A child whose

representational models of others are organized around fear and mistrust may have difficulty in getting close to a new adult during the course of one school year (Pianta, 1992). Nevertheless, relationships to teachers are a potentially protective factor available to all children; they can begin to counteract the consequences of maltreatment and alter children's expectations about themselves, others and relationships (Erickson, Egeland, and Pianta, 1989).

Interaction Histories with Non-Parental Caregivers

Interaction histories with non-parental caregivers will now be explored in the framework of attachment theory. This is an area in which research has yielded different results regarding children's relationships and interaction histories with non-parental caregivers.

Goossens and van Ijzendoorn (1990) found that, as with mother-child dyads, the security of attachments to teachers depended on the sensitivity of the teachers toward individual children. Other researchers have found no associations between measures of teachers' behavior and attachment security (e.g. Rottmann & Ziegenhain, 1988). Two other research studies (Sagi, Lamb, Lewkowicz, Shoham, Dvir, & Estes, 1985; Sagi, van Ijzendoorn, Aviezer, O'Donnell, Koren-Karie, Joles, & Harel, 1995) found that children in a group tended to develop relationships with their shared teachers that were of similar quality. The latter findings indicate that attachment security may be shaped by group-directed, rather than individual-focused behavior. It also may indicate that relationships between teachers and children reflect group dynamic rather than the dynamics of individual dyads (Ahnert & Lamb, 2000; Ahnert, Lamb, & Steltenheim, 2000).

Ahnert, Pinquart and Lamb (2006) conducted a meta-analysis on children's relationships with non-parental care providers. They analyzed 40 investigations involving 2,867 children who averaged 29.6 (SD=8.6) months of age when their attachments to teachers were assessed using either Ainsworth's Strange Situation or the Attachment Q-Set. The Attachment Q-Set is an alternative way to measure attachment in children aged one to five. It consists of 90 cards, on which statements describing secure-attchments are written. Participating children are observed and rated for each statement. The test is designed to cover the spectrum of attachment-relative behaviors, and provides a score along a continuum from secure to insecure (Prior & Glaser, 2006).

This study showed that secure teacher attachments were more likely in home-based than in center-based care settings. They also found that the longer the child was enrolled in the center, the more secure the attachment. Girls had more secure attachments than boys. Lastly, they found that teachers' sensitivity to individual children predicted attachment security only in small home-based settings, whereas group-related sensitivity predicted attachment security in larger childcare centers (Ahnert, Pinquart & Lamb, 2006). This is pertinent information for the current hypotheses as it suggests that individualized attention from teachers is critical. The Banking Time intervention is designed to provide one-on-one time between a student and their teacher.

Howes, Phillipsen, & Peisner-Feinberg (2000) conducted a three-year longitudinal study of student-teacher relationships during the transition from preschool to kindergarten. In the first year of the study, 793 children and their teachers participated. There were 474 children who participated in the second year and 357 children total for all three years. (Howes et al., 2000). Teacher perceptions of their relationships with their

students were assessed using the Student-Teacher Relationship Scale (STRS; Pianta & Steinberg, 1992). As was pointed out earlier, this is a 30 item, five-point scale that yields three relationship quality scores: Closeness, Conflictual and Dependency (see section above titled "Features and Measurements of Student-Teacher Relationships"). Children's social adjustment was measured using the teacher report Classroom Behavior Inventory (CBI; Schafer, Edgerton, & Aaronson, 1978). The CBI measures teachers' perceptions of children's social adjustment using a five-point scale (not at all, very little, somewhat, much and very much like the child).

They found that children formed relationships with new teachers that were similar in quality to those of previous teachers. Closeness in kindergarten student-teacher relationships was moderately associated with a decrease in problem behavior in preschool and moderately associated with sociability in preschool. Conflict in teacher-child relationships in kindergarten was highly associated with problem behavior in both years of preschool. Children perceived to be sociable in preschool were perceived to have closer, less conflictual kindergarten student-teacher relationships. Teachers also reported greater closeness with girls than with boys (Howes et al., 2000).

The only limitation to this study is that the study was conducted using self-report measures. This could lead to problems of validity (Howes et al., 2000). Further research in this area is needed, particularly examining the relationship between student-teacher relationships and behavioral adjustment. This current study will address this limitation by using multiple measures of student-teacher relationships and behavioral adjustment.

Introduction to Student-Teacher Relationships and Problem Behaviors in Early Childhood

Childhood adjustment to school and students' behavioral adjustment have become areas of concern in schools today. Children exhibiting maladjustment and aggressive behavior are vulnerable to significant personal and social issues, including academic failure, substance abuse and delinquency (Loeber, 1990). Research has shown that approximately 65% of children who enter elementary school exhibiting elevated levels of aggression experience significant behavioral difficulties and associated educational problems in school two years later (Loeber, 1990). In addition, students who show high rates of disruptive and aggressive behaviors during the first years of school are also more likely than well-behaved students to repeat a grade early in elementary school (Beebe-Frankenberger, Bocian, MacMillian & Gresham, 2004), require special education services and exhibit serious conduct problems in later adolescence (Broidy, Nagin, Trembley, Bates, Brame, & Dodge, 2003). Behavior problems in childhood are also critical because of the difficulty in treating delinquent youths and the possible emergence of later adult criminality (Shaw & Vondra, 1995). Given these potential outcomes, it is important to understand the factors related to the early development of behavioral adjustment.

Students spend at least one-quarter of their waking hours in schools, most of it in classrooms (Pianta & Hamre, 2009). Therefore, schools are one of the most potentially powerful settings for influencing children. Although biological and familial factors can influence children's behavioral adjustment, classroom behavioral problems can be intensified when children are exposed to multiple risk factors, including negative student-

teacher interactions (Pianta & Hamre, 2009). Thus, teachers also play a powerful role in influencing children.

When children enter school they face heightened expectations for behavioral compliance, sustained attention and social integration. The ability to follow classroom rules, attend to learning tasks and inhibit aggression when managing conflicts becomes critical for early school behavioral adjustment and academic success (Thomas, Bierman, Thompson, & Powers, 2008). Student behavior issues in school are something that most teachers face on a daily basis. The influence that student-teacher relationships can have on behavior and school adjustment will now be explored.

There is an increasing amount of literature supporting the notion that the student-teacher relationship has a significant influence on overall school and behavioral adjustment and academic achievement. Pianta, Steinberg and Rollins (1995) found that positive student-teacher relationships, defined as "warm, close and communicative," were linked to behavioral competence and better school adjustment. Other researchers found that conflicts in the student-teacher relationship were related to unfavorable outcomes, such as hostile aggression (Howes, Hamilton & Matheson, 1994).

Howes et al. (1994) examined maternal, teacher and child care history correlates of children's relationships with peers. They also examined relations between children's security with their childcare teachers and their social competence with peers. The study sample included 94 children (47 girls) who entered childcare at three different times from infants to preschoolers. The children's mothers and teachers also participated in this study. Childcare entry was done in four waves. Thirty of the subjects (14 girls) entered childcare as infants. Seven children entered childcare as young toddlers (three girls).

Thirty-seven (19 girls) entered child care as older toddlers. Lastly, ten children (five girls) entered childcare as preschoolers (Howes et al., 1994). Observers described childcare arrangements by recording the number of children and adults present and, for center care only, completed the Early Childhood Environmental Rating Scale (ECERS; Harms & Clifford, 1980) on each childcare visit. The ECERS provides a comprehensive assessment of the day-to-day quality of care provided to children (Howes et al., 1994). Maternal attachment was assessed at 12 months with the Strange Situation. At 12 months, twenty-two percent of children were categorized as avoidant, 13% as ambivalent and 6% as disorganized. Teacher-child relationships were assessed once upon entering childcare and again at age four using the Waters and Deane (1985) Attachment Q-Set . Using Q-Set items, the children were classified into three relationship categories: secure, avoidant and ambivalent (Howes et al., 1994). Social competence with peers at age four was assessed in two settings- the child's childcare center and in a two-hour-long playgroup setting (Howes et al., 1994). During the childcare and playgroup observation, the observer coded three-five-minute behavior samples of the social behaviors of the child with peers. Four composite variables were derived: observed gregarious, complex play, hostile aggression and instrumental aggression (Howes et al., 1994). The child's teacher at four-years-old completed the California Child Q-Set (Block & Block, 1980). Lastly, at the conclusion of the playgroup, picture sociometric interviews were collected. Children were shown pictures of all children in the group and asked how much they might like to have each child as a friend (Howes et al., 1994).

Results showed that children classified as securely attached to their first childcare teachers were rated as more sensitive and empathetic with familiar peers, engaged in

more complex play with familiar and unfamiliar peers. They were given higher sociometric ratings by unfamiliar peers and were more adaptive in ego-control than children classified as avoidant or ambivalent with their first childcare teachers. Children classified as secure with their current childcare teacher were rated as more sensitive, empathetic and gregarious with familiar peers, engaged in more complex play with familiar peers. They were rated as more ego-resilient and received higher sociometric ratings by unfamiliar peers than children classified as insecure with current teachers. Lastly, children rated as ambivalent with their four-year-old teacher were observed to engage in more instrumental aggression than children rated as secure or avoidant (Howes, et al., 1994).

Howes et al. (1994) found that four-year-old children who had an ambivalent attachment to their teachers were observed to engage in more aggressive behavior than children who had a secure or avoidant attachment to their teachers. The current study will work off of this premise to help support the student-teacher relationship with hopes of decreasing aggression and other problem behaviors in the classroom.

The quality of children's relationships with their teachers in childcare is also emerging as an important predictor of children's later social relations with peers (Howes, Matheson & Hamilton, 1994). Howes (2000) found that the best predictor of child behavioral problems in elementary school is the presence of a poor student-teacher relationship in preschool.

Howes (2000) later conducted a five-year longitudinal study of children's teacher-child relationships and social-emotional competence to examine the contributions of preschool social-emotional climate, early student-teacher relationships and behavior

problems in predicting second-grade social competence with peers. The sample size

included 307 students. The Peer Play Scale was used to measure the climate of peer

social competence in preschool classrooms. The Classroom Behavior Inventory was used

to measure behavioral problems and the Student-Teacher Relationship Scale was used to

measure student-teacher relationship quality at both the classroom and individual level.

Hierarchical multiple regression was used to predict second grade social

competence with peers. Results showed that students' second-grade social competence

with peers could be predicted by preschool classroom social-emotional climate, four-

year-old behavior problems and student-teacher relationship quality and current student-

teacher relationship quality. Aggression ratings were predicted by a preschool classroom

high in behavior problems and low in student-teacher closeness, by the student's poor

student-teacher closeness as a four-year-old and by contemporary student-teacher

relationship conflict. Inspection of the correlations suggests that individual behavior

problems and high student-teacher conflict as a four-year-old and low student-teacher

closeness as a second grader also contributed to the prediction of aggression ($p \leq .01$)

(Howes, 2000). Disruption ratings were best predicted by being a boy, by preschool

classroom climates high in behavior problems and low in student-teacher closeness, by

the student's poor student-teacher closeness as a four-year-old and by high levels of

student-teacher conflict as a second grader. Inspections of the partial correlations

suggests that individual behavior problems and high student-teacher conflict as four-year-

old and low student-teacher closeness as a second grader also contributed to the

prediction of disruption ($p \leq .01$) (Howes, 2000). Prosocial ratings could best be

predicted by being a girl, preschool classroom climates high in time spent interacting

with peers, by the child's low levels of behavior problems as a four-year-old and by high levels of student-teacher closeness and low levels of student-teacher conflict as a second grader. Inspection of the partial correlations suggests that low student-teacher conflict and high student-teacher closeness as a four-year-old also contributed to the prediction of prosocial ratings ($p \leq .001$) (Howes, 2000). Lastly, ratings of social withdrawal could best be predicted by a classroom climate high on behavior problems, low levels of individual behavior problems as a four-year-old and low level of student-teacher closeness as a second grader. The partial correlations suggest that high levels of second grade student-teacher conflict also contributed to the prediction of social withdrawal (Howes, 2000).

This study supports the current hypotheses by presenting evidence that social competence with peers and prosocial behavior could be predicted by factors including previous student-teacher relationship quality and current student-teacher relationship quality. In contrast, the current hypotheses is also supported by research suggesting that aggression and disruption ratings were predicted by previous low levels of student-teacher closeness and by contemporary student-teacher relationship conflict

Rimm-Kaufman, Early, Cox, Sajuja, Pianta, Bradley, et al. (2002) found that as early as kindergarten, student-teacher relationships characterized by warmth, sensitivity, and support have been shown to promote social competence and reduce rates of classroom behavior problems. They addressed the following questions: (1) Is there a relationship between students' early behavioral style and their behavior in a kindergarten classroom? and (2) Does kindergarten teachers' sensitivity differentially affect the kindergarten behavior of socially bold and wary children?

The terms of "socially bold" and "socially wary" were used in this study. Socially bold children were described as children who were difficult to manage in the classroom. They may show more difficulty redirecting their attention from one activity to another and are more likely to speak out of turn. Bold children may also be impulsive, under controlled, lack self-regulation skills, show difficulty conforming to school settings and more likely to have school performance problems (Rimm-Kaufman, et. al., 2002). Socially wary children have difficulty adjusting to the school environment. They have social challenges, such as not wanting to speak in front of a group of children or adults. Wary children are more likely to experience peer rejection and isolation. Wary children may become overwhelmed in noisy, high-activity classrooms, and, as a result, may have more difficulty processing cognitive information. Wary children who hesitate in social situations may be less likely to take risks, such as guessing the answer on a difficult problem or taking in large-group situations (Rimm-Kaufman, et al., 2002).

The study was conducted with 97 children selected from a sample of 253 at 15 months of age. The children were categorized as being "socially bold" (n=60) or "socially wary" (n=37). Social boldness and wariness was coded at 15 months (Rimm-Kaufman, et al., 2002). *T*-tests were computed to compare the kindergarten behavior of children identified as socially bold or wary at 15 months of age. Socially bold children exhibited more off-task behavior than wary children and they complied with teachers' requests more frequently than wary children ($p < .05$). Four *z*-tests were used to compare differences in kindergarten behavior in specific contexts between socially bold and wary children. Results of the *z*-tests showed that socially bold children talked more and had more requests of the teacher than wary children in whole class contexts. There was no

difference between groups for these behaviors in one-on-one or small group contexts ($p<$ .05). Regression analyses found that socially bold children with more sensitive teachers showed more self-reliant behavior, fewer negative behaviors and less time off-task compared to socially bold children with less sensitive teachers ($p< .05$). There was no relationship between teachers' sensitivity and child behavior for socially wary children ($p< .05$).

Overall, the results showed that teachers' sensitive responses to children (particularly bold children) were associated with positive classroom adjustment (Rimm-Kaufman et al., 2002). This supports the current research hypotheses as is suggests that teachers that have a more secure and positive relationship with their students have students who exhibit more positive classroom adjustment. The Banking Time intervention's purpose is to strengthen the student-teacher relationship.

Pianta, Steinberg and Rollins (1995) examined student-teacher relationships from school-entry to grade two in 436 students. The Student Teacher Relationship Scale (STRS) was used to measure student-teacher relationships. Results showed that children with warm, close, communicative relationships with kindergarten teachers were better adjusted and had more positive student-teacher relationships in second-grade than those with angry, dependent student-teacher relationships in kindergarten. This was a well-designed study that had a large sample size and utilized a standardized and validated measurement instrument (STRS). The results of this study support the view that students' relationships with teachers are an important component of adaptation in school and that they can play a role in the course of development in school. This supports the current hypotheses.

A study conducted by Doumen, Verschueren, Buyse, Germeijs, Luyckx and Soenens (2008) tested reciprocal relations between student-teacher conflict and aggressive behavior in kindergarten. Twenty-four schools in the neighborhood of Leuven in Flanders, Belgium participated in this study. A sample of 212 students and their teachers from 33 kindergarten classes participated. A three-wave short-term longitudinal design was used. Teachers filled out questionnaires at the beginning (October-December), middle (January-March) and end (April-June) of the kindergarten school year (Doumen et al, 2008). Both student-teacher conflict and child aggressive behavior were assessed by a teacher-rated questionnaire at each time point. Questionnaires were translated into Dutch. Conflict in the student-teacher relationship was assessed with the Conflict subscale of the Student-Teacher Relationship Scale (STRS; Pianta, 2001). This scale measures the extent to which the teacher experiences the relationship with a particular child as conflicted (Howes & Ritchie, 1999). In the first trimester of kindergarten, student-teacher conflict was also assessed from the perspective of students' classroom peers. All students were presented with randomly ordered photographs of their classmates (McCandless & Marshall, 1957). The students were asked to select three pictures of students who matched a given description (i.e. "Choose three pictures of children who quarrel with the teacher."). Aggressive behavior of the child was measured with the subscale Aggressive with Peers of the Child Behavior Scale (CBS; Ladd & Profilet, 1996). This subscale consists of seven items. In addition to the teacher rating of child aggressive behavior, the perspectives of children's classroom peers were assessed. All children were asked to select three pictures of classmates who met a given description (Doumen et al., 2008).

Data analyses of relationships between student-teacher conflict and student aggressive behavior was conducted with structural equation modeling. Results provided evidence for reciprocal influences between student-teacher conflict and aggressive child behavior over time. Aggressive behavior at the beginning of kindergarten led to increased levels of student-teacher conflict by the middle of the school year, which led to increased levels of student-teacher conflict by the end of the school year (Doumen et al., 2008).

Children who have difficulty with self-control may have trouble conforming to the norms of the classroom, leading to negative student-teacher relationships. The combination of poor self-control and negative student-teacher relationships may lead to more frustration and opposition to school demands, which can cumulatively lead to adjustment problems throughout school (Myers & Pianta, 2008).

The results of this study found that student-teacher conflict was not only associated with aggressive child behavior over time, but also that aggressive behavior led to increased levels of student-teacher conflict. This supports the current hypotheses and highlights the need for an intervention that will support the student-teacher relationship, such as Banking Time.

Positive relationships with teachers may even help behaviorally at-risk students learn more appropriate behavior. In a study conducted by Meehan, Hughes and Cavell (2003) with a group of African American and Hispanic students exhibiting aggressive behavior, it was found that supportive student-teacher relationships were associated with a decline in the aggressive behavior between second- and third-grade. This study was conducted with 140 second- and third-grade aggressive students (M age = 8.18) in a

small city in the southwest. Second- and third-grade teachers from 15 local elementary

schools nominated children for inclusion in this intervention program. Children were

eligible to participate if their score on the Aggressive Behavior or Delinquency subscales

of Achenbach's (1991) Teacher Report Form (TRF) was at least two standard deviations

above the mean or their peer-rated aggression scores as assessed by classroom-wide

administered sociometric ratings were two standard deviations above the mean (Meehan,

Hughes & Cavell, 2003). Several measures were used for this study. The Network of

Relationships Inventory (NRI) (Furman & Buhrmester, 1985) is a structured interview

that asks children to rate people in their social network with respect to eleven types of

social support or conflict. Each of the eleven scales contains three items that ask about a

specific provision of support within a relationship (Meehan, Hughes & Cavell, 2003).

For the sociometric assessment, a modified version of the Revised Class Play Method

(Masten, Morrison & Pelligrini, 1985) was used to obtain peer nominations of children

who exhibited aggressive behavior (Meehan, Hughes & Cavell, 2003).

In year one of the program participating children were assigned to one of three

conditions. The first was the PrimeTime condition, which is composed of therapeutic

mentoring, teacher and parent consultations and social skills training. This condition was

the treatment condition. The second condition was the Lunch Buddy condition. This

intervention was conceptualized as a minimal treatment control and it consisted of bi-

weekly lunch visits with an undergraduate student in the school cafeteria. A third group

received no treatment (Meehan, Hughes & Cavell, 2003). Data analyses were conducted

through a series of hierarchical multiple regressions to examine the relation between the

quality of student-teacher relationships and children's subsequent levels of aggression

within a sample of aggressive children. An alpha level of .05 was used for all statistical tests (Meehan, Hughes & Cavell, 2003).

Preliminary analyses of all measures revealed no outliers and skewness indexes were within acceptable limits (Stevens, 1996). Results showed that positive student-teacher relationships were more beneficial for aggressive children (Meehan, Hughes, & Cavell, 2003). A limitation to this study is the use of only one rater of the affective quality of student-teacher relationships. Obtaining reports of relationships qualities from other measures would greatly enhance the ability to measure the relationship (Meehan, Hughes, & Cavell, 2003). This study supports the current hypotheses and research in two ways. First, the study will address this limitation by employing not on the Student Teacher Relationship Scale to measure the quality of the student-teacher relationship, but it will also seek to measure the relationship from the students' perspectives through interviews. Secondly, the results of Meehan, Hughes and Cavell's (2003) study supports the hypotheses that positive student-teacher relationships can positively impact problem behaviors.

Hamre and Pianta (2001) found that early student-teacher relationships, as described by kindergarten teachers, are unique predictors of academic and behavioral outcomes in early elementary school. They followed a sample of 179 children from kindergarten through eighth grade. They examined the extent to which kindergarten teachers' perceptions of their relationships with students predicted a range of academic and behavioral school outcomes. The sample of students consisted of 91 boys and 88 girls (Hamre & Pianta, 2001). At kindergarten entry, cognitive development was assessed via the vocabulary subtest of the Stanford-Binet Intelligence Scale-Revised,

Fourth Edition (SB-FE; Thorndike, Hagen & Sattler, 1986). The vocabulary subtest is a reliable measure (r= .87) (Hamre & Pianta, 2001). The Teacher-Child Rating Scale (TCRS; Hightower, Work, Cowen, Lotyczewski, Spinnell, Guare & Rohrbeck, 1986) was collected from kindergarten teachers in May of that school year. The TCRS is a 38-item teacher-reported rating scale of children's classroom behavior. For this study, the Behavior Problems subscale was used. This composite subscale consists of conduct, learning and shy/anxious problems. Internal consistency reliabilities on the Behavior Problems composite exceed .90 (Hightower et al., 1986). Kindergarten teachers also completed the Student-Teacher Relationship Scale (STRS; Pianta, 1992) in May of that school year. This is a 28-item rating scale, using a Likert-type format, designed to assess teachers' perceptions of their relationship with a particular student (Hamre & Pianta, 2001). Grades were collected each year in first through eighth grades. Academic performance was also measured with the Iowa Test of Basic Skills (ITBS; Hieronymus & Hoover, 1978). The exam was administered to students in the spring of second through fifth grades. The ITBS is a nationally normed achievement test measuring proficiency in the areas of word analysis, vocabulary, reading, language, word study, mathematics, listening, social studies, science and writing skills (Hambleton, Hieronymous & Hoover, 1987). Teachers recorded work-habit behaviors in first through eighth grades. Teachers' reports of positive and negative descriptors were tallied from report cards. Although these reports varied by grade, they generally focused on behaviors such as listening, participation, compliance, cooperation and study habits (Hamre & Pianta, 2001).

Hamre and Pianta's (2001) first step in data analysis was to examine bivariate associations between kindergarten teachers' ratings of the quality of the relationship with

each child and the child's academic and behavioral performance through eighth grade. Pearson product-moment correlations were calculated between the Closeness, Conflict and Dependency scales of the STRS and math and language arts grade composites, standardized test scores, work-habit marks and total number of disciplinary infractions for lower and upper elementary and middle school. Next, a hierarchical regression analysis was completed for each outcome measure to assess the extent to which teacher ratings of the quality of their relationship with each student in kindergarten contributed uniquely, as well as the extent to which this association was mediated by performance in that area during early elementary school.

Correlations between the STRS factor scores and student grade and test performance revealed that teacher perceptions of high conflict and dependency were significantly related to poor academic and behavioral outcomes for boys from first through eighth grade (p< .05). Both boys and girls who were reported to have high levels of conflict with their kindergarten teachers tended to have fewer positive work-habit marks in elementary school and more discipline problems in upper elementary school (*p*< .05) (Hamre & Pianta, 2001). Results also showed that girls who had a close relationship with their kindergarten teacher tended to have more positive work habits in lower elementary school, as well as fewer disciplinary problems in upper elementary school. In contrast, kindergarten teacher's perceptions of their relationships with boys were not related to boy's behavioral adjustment in elementary or middle school (Hamre & Pianta, 2001).

The results of this study suggest that early student-teacher relationships, as described by kindergarten teachers, are unique predictors of academic and behavioral

outcomes in early elementary school. Relational Negativity predicted behavioral outcomes into upper elementary and middle school, particularly for those students at greatest risk of behavioral difficulties- specifically those with early behavior problems and boys in general. The results also suggest that those students who, despite significant behavioral problems, were able to develop relationships with kindergarten teachers marked by low levels of negativity, were more likely to avoid future behavioral difficulties than were their peers who had high negativity ratings. This study provides evidence that beyond cognitive functioning and classroom behavior, students' ability to form relationships with their teachers forecasts later academic and behavioral adjustment in school (Hamre & Pianta, 2001). Interventions, such as Banking Time, may contribute to fostering the student-teacher relationship. However, one limitation to note is that this study also did not consider the students' perceptions of their relationships with their teachers (Hamre & Pianta, 2001). The current study, on the other hand, is designed to take the students' perspectives into consideration.

In summary, numerous studies have documented the fact that positive student-teacher relationships and a secure attachment to teachers results in positive behavioral and academic outcomes for students (Hamre & Pianta, 2001; Meehan et al., 2003; Pianta et al., 1995; Rimm-Kauffman et al., 2002). Alternately, conflicts in the student-teacher relationship and ambivalent attachment patterns are related to negative school adjustment and behavioral problems (Birch & Ladd, 1997; Doumen et al., 2008; Howes, 2000).

Interventions to Strengthen the Student-Teacher Relationship

Based on the research findings which show that student-teacher relationships have a significant influence on a range of outcomes, numerous strategies have been employed to improve student-teacher relationships. The focus of this section is to present practices that are designed to enhance the relationships between teachers and individual students in their classrooms. A group of similar interventions has been implemented by behaviorists (e.g. Barkley, 1987) and play therapists (e.g. LeBlanc and Ritchie, 2001) to improve the quality of student-teacher relationships. The relationship-enhancing focus of these interventions relates directly to attachment theory and the philosophy that internal working models are somewhat dynamic and open to outside influences (Bretherton, 1985). These interventions originated as parent-child therapies, but have been adapted for use with students and teachers.

Interventions Based on Play Therapy Techniques

Various techniques related to play therapy have been implemented to improve adult-child relationships. Play therapy was initially designed to be administered by a clinician in a professional setting; however, the techniques have been expanded for use in consultation models in which other adults, such as parents and teachers are trained to carry out the therapy. Home-based, "parent as consultee" programs include Filial Therapy (Guerney, 1964) and The Child's Game (Barkley, 1987). School-based, "teacher as consultee" models include KinderTherapy (Draper, White, O'Shaughnessy, Flynt & Jones, 2001), Teacher Child Interaction Therapy (TCIT; McIntosh, Rizza & Bliss, 2000) and Banking Time (Pianta, 1999). Prior to discussing these therapies in more detail, a discussion of play therapy is necessary.

Virginia Axline incorporated play therapy into child psychotherapy practices in the 1940s (LeBlanc & Richie, 2001). The Association for Play Therapy has defined it as, "the systematic use of a theoretical model to establish an interpersonal process wherein trained play therapists use therapeutic powers of play to help clients prevent or resolve psychosocial difficulties" (p. 20). Play therapy is particularly beneficial for children considered at-risk or developmentally delayed, as it allows them to work at their own developmental levels (Cochran, 1996). Play therapy is generally carried out between a trained mental health provider and one child, once per week for approximately 30 minutes at each session (Bratton & Ray, 2000).

There are numerous types of play therapy, including Child-Centered Play Therapy (CCPT) and Adlerian Play Therapy. CCPT was the original form of play therapy introduced by Axline. It follows some of Carl Rodgers' work with adults (LeBlanc & Ritchie, 2001). This therapy is considered client-centered, nondirective and unstructured. CCPT developed from the idea that therapy will be most beneficial if the therapist does not direct the therapy, but rather allows the child to do so (Guerney, 2001). Additional components of the CCPT include unconditional positive regard by the therapist; respect for the child by the therapist; a child-directed program; and attention to child safety (White, Flynt & Jones, 1999). The tenets of CCPT are that the child directs the content of the play; therapy is not symptom specific or problem-oriented; and the child's perception of reality is accepted by the therapist (Guerney, 2001).

Adlerian Play Therapy combines both individual psychology and a child-centered approach. It includes four phases: building egalitarian relationships; exploring lifestyles; promoting insight; and providing reorientation and reeducation. Counselors incorporate

encouragement, empowerment and relationship building throughout the therapy. Counselors also guide children toward constructive goals (Kottman, 2001).

The Effects of Play Therapy

There have been several meta-analyses conducted on play therapy, which support the effectiveness of the intervention. Two meta-analyses of play therapy studies yielded average effect sizes of .61 (LeBlanc & Ritchie, 1999; LeBlanc & Ritchie, 2001) and .80 (Ray, Bratton, Rhine, & Jones, 2001). The effectiveness of play therapy did not differ based on the sex of the child, the child's presenting problems, use of other therapies in conjunction with play therapy, group versus individual treatment, or age of participants (LeBlanc & Ritchie, 1999; LeBlanc & Ritchie, 2001).

In addition, a review of case study research suggests that it has been effective in increasing children's positive behaviors and decreasing negative behaviors (Bratton & Ray, 2000). Effectiveness has been documented across many populations, including children with mental illness, anxiety, acting-out behavior, abusive histories, learning and academic problems, and life adjustment problems (Bratton & Ray, 2000). An experimental study of play therapy's effectiveness among kindergarten through third grade students following six sessions with a counselor found improved self-efficacy immediately following treatment (Fall, Balvanz, Johnson, & Nelson, 1999).

Parent- and Teacher- Directed Play Therapy Interventions

Evidence suggests that play therapy is effective when implemented in its traditional form; however, several models have been developed in which mental health professionals work with parents and teachers to help them administer play therapy techniques to their children. This type of parent- and teacher-directed play therapy has

several advantages. First, because parents and teachers spend more time with their children than a therapist and have established relationships, they generally have to spend less time to establish a rapport (Draper et al., 2001). A second advantage is that therapy is generally conducted in the primary context in which the child functions, therefore improving the likelihood that results will be generalized (Guerney, 1964).

A Parent-Directed Intervention: Filial Therapy

Filial Therapy is a parent-directed intervention in which therapists train parents to conduct child-centered therapy with their child (Guerney, 1964). The goal of Filial Therapy is to enhance the parent-child relationship by improving parental acceptance of the child, reducing inappropriate child behaviors, improving parenting skills and increasing children's competence and confidence (Athanasiou & Gunning, 1999). Parents carry out Filial Therapy sessions once a week for about 30 minutes (Kale & Landreth, 1999).

Overall, the results of studies on Filial Therapy suggest that it is effective at improving child and parent outcomes as well as parent-child relationship quality. Studies have indicated that Filial Therapy can result in improved child behavior, particularly decreased aggression, increased affection, improved leadership (Oxman, 1971), increased self-esteem and more positive self-concept (Rennie & Landreth, 2000) and overall improved child adjustment (Rennie & Landreth, 2000). Improved parent-child relationships were evidenced by more positive parental attitudes toward their children (Bratton & Landreth, 1995) and greater parental acceptance of their children (Kale & Landreth, 1999).   One meta-analysis demonstrated a significantly higher effect size for

Filial Therapy (1.06), than for traditional therapist-led play therapy (.73) (Ray et al., 2001).

A Parent Directed Intervention: The Child's Game

A technique similar to Filial Therapy is the "child's game." The child's game technique is more behaviorally based than Filial Therapy (LeBlanc & Ritchie, 1999). During the child's game, parents and children interact one-on-one as the child leads the play (Hembree-Kigin & McNeil, 1995). The child's game can be used in isolation; however, it has been incorporated into several parent training programs.

Parent-Child Interaction Therapy

Parent-Child Interaction Therapy (PCIT) includes the child's game. This therapy is targeted at families with children ages two through seven who exhibit conduct problem behavior, emotional problems or developmental problems. Traditional play therapy skills are implemented into PCIT to improve parent-child relationships while problem solving skills are taught to aid parents in developing strategies for managing challenging child behaviors (Hembree-Kigin & McNeil, 1995).

Parent-Child Interaction Therapy consists of two phases: child-directed interaction (CDI) and parent-directed interaction (PDI). PCIT begins with the CDI stage, in which parents learn to conduct nondirective play, or the child's game. The focus of this stage is to improve the parent-child relationship. Parents are taught to "DRIP" during this stage: *describe* the child's behavior; *reflect* on conversation; *imitate* their children's play; *praise* appropriate behavior, while ignoring inappropriate behavior (Eisenstadt, Eyberg, McNeil, Newcomb, & Funderburk, 1993). The second phase of PCIT is PDI, during which parents learn to direct their children's behavior with clear,

age-appropriate instructions and clear consequences, praise for compliance, and the implementation of time-out for noncompliance (Schuhmann, Foote, Eyberg, Boggs & Anigna, 1998). Within PCIT, CDI precedes PDI because limit setting is generally more effective when a positive parent-child relationship already exists (Campbell, 1990).

Researchers have examined the effectiveness of PCIT overall, as well at the CDI and PDI components separately. The PCIT program has been found to be effective at improving child compliance and changing the parent-child interactional style immediately following treatment and at a four-month follow-up (Schuhmann et al., 1998). Eisenstadt et al. (1993) examined the effectiveness of both the CDI and the PDI separately, by implementing the PCIT in its traditional order with one group (CDI prior to PDI) and in the reverse order with a second group (PDI prior to CDI). While both treatments resulted in significant improvements in child behavior, greater behavioral improvement and maternal satisfaction were present with the reversed model (PDI prior to CDI). This finding was inconsistent with the theory that behavior management is more effective following improved child-caregiver relationship quality. However, another study showed that some families have responded so positively to the CDI stage that treatment could be discontinued prior to the PDI stage (Eyberg, 1979).

Although Filial Therapy and PCIT have different methodologies, they both include parents as providers of treatment. A meta-analysis of play therapy outcomes, including both Filial Therapy and PCIT suggests that these techniques are about equally effective at improving child outcomes (LeBlanc & Ritchie, 1999).

Barkley's Program for Defiant Children

Barkley (1987) published a treatment manual outlining a program similar to the PCIT. Like the PCIT, Barkley's (1987) program is intended for children younger than 11-12 years old who engage in noncompliant behavior. The goals of this program are to improve parent competence at dealing with their children's behavior, to improve parent knowledge about the cause of the behavior, and to improve child compliance to commands and rules set by the parents (Barkley, 1987). Theoretically it is based in behavior theory.

Barkley's program involves ten steps. These steps involve parents learning "attending" skills, which ultimately involves strengthening the parent-child relationship. Similar to the CDI portion of the PCIT, "attending" involves a special playtime between the child and the parent. During this playtime, the child is allowed to choose the activity. The parent observes for several minutes before joining in, and then describes out loud what the child is doing in an excited tone. The parent can occasionally give positive verbal and nonverbal praise feedback. Parents refrain from asking questions or giving commands and are told to ignore their children while misbehaving (Barkley, 1987).

Knouse (2005) examined the effectiveness of this parent-training program. The research demonstrated the effectiveness of parent training in reducing oppositional and defiant behaviors. However, the effectiveness of the program was dependent on the characteristics of the child and parents involved. Child characteristics included the child's social, emotional, intellectual, academic and behavioral strengths and needs. Parental characteristics included the presence of psychopathology and/or substance abuse, marital

and/or relationship problems, involvement of the father or lack thereof, and the degree to which parents are active participants in their child's life.

A Teacher Directed Intervention: Kinder Therapy

The methods of Filial Therapy have been carried out in a school setting, such that school counselors or psychologists work with teachers to carry out play therapy with their students (White, Flynt & Draper, 1997). Kinder Therapy is one of these interventions. Kinder Therapy has two goals. First, through the implementation of nondirective play therapy in student-teacher sessions, this intervention is intended to enhance student-teacher relationships and indirectly improve student school adjustment, including behavior and academics (Draper et al., 2001). It is theorized that when children feel encouraged and have a sense of belonging in the classroom that they will be more likely to cooperate, exhibit appropriate behavior, and demonstrate empathy towards others (White et al., 1997). The second goal of Kinder Therapy is to improve teachers' classroom management skills by implementing more natural and logical consequences during the school day (Draper et al., 2001). Teachers are trained in Kinder Therapy in groups, usually led by school counselors (White et al., 1997). Following training, play sessions with students usually occur weekly for approximately six weeks (White et al., 1997).

Guerney and Flumen (1970) examined the effectiveness of group play sessions administered to students by their teachers and counselors. They found that initially behaviorally withdrawn students demonstrated increased assertiveness following participation in the program.

A Teacher Directed Intervention: Teacher-Child Interaction Therapy

Teacher-Child Interaction Therapy (TCIT) was created as a modification of the PCIT (McIntosh, Rizza & Bliss, 2000). TCIT is based largely on behavior theory, which is the theory that behavior can be acquired through conditioning. The goal of TCIT is to improve the quality of student-teacher relationships by increasing positive interactions and using effective discipline (Lyon, Gershenson, Farahmand, Thaxter, Behling & Budd, 2009). As with the PCIT, the first phase of the TCIT involves CDI in which the teacher uses PRIDE skills in play sessions (Praise appropriate behavior; Reflect appropriate speech; Imitate and Describe appropriate behavior; and be Enthusiastic) while ignoring inappropriate behavior and refraining from questioning and commanding. The second phase involves teacher-directed interaction (TDI). This phase focuses on preventing and managing challenging behaviors through the use of positive attention, effective commands, natural consequences and timeout. The goal of TDI is to increase positive social interactions of the student and to decrease disruptive behaviors. The first session focuses on using attention to good behavior to increase desired student actions. The second session focuses on using effective commands, which helps children to understand classroom expectations. The third session focuses on "Sit and Watch", which is similar to a timeout. The final TDI session reviews all skills and allows teachers to problem solve situations that they have found particularly difficult. The TCIT sessions occur for about 30 minutes once a week for 12 weeks.

TCIT has been studied in the classroom setting across several studies that used a case study designs (McIntosh et al., 2000), multiple time series designs (Lyon et al., 2009) and experimental designs (Tiano & McNeil, 2006). McIntosh et al. (2000)

completed a single case study to examine the effectiveness of the TCIT with a two-year-old, female child in a preschool setting. Observations throughout this study indicated improved teacher use of descriptive statements, reflective statements and praise; and a decreased use of commands during CDI. Most importantly, the student's disruptive behavior decreased. Because this therapy was examined through a case study, firm conclusions cannot be drawn about the effectiveness of the TCIT.

Results from a multiple baseline investigation of TCIT involving four classrooms and 78 preschool children from a low-income, ethnic minority sample showed that teachers increased their use of positive strategies in the classroom (Lyons et al., 2009). These results were consistent with Tiano and McNeil's (2006) study in seven Head Start classrooms, which showed that compared to teachers in control classrooms, teachers using TCIT used more labeled praise. These results suggest that TCIT is effective in meaningfully changing teacher behaviors to promote positive teacher-student relationsips in the classroom.

A Teacher Directed Intervention: Responsive Classroom

Responsive Classroom is a widely used program designed to foster elementary students' social, emotional, self-regulatory, and academic development through the creation of structured and supportive learning environments. *Responsive Classroom's* philosophy is based on the importance of social interaction, process-oriented learning and knowing and respecting students' cultural and individual differences. *Responsive Classroom* activities include a morning meeting, interactive modeling and academic choices (Abry, Rimm-Kaufman, Larsen, Brewer, 2013).

Studies have linked the *Responsive Classroom* approach to improved teacher

attitudes (Rimm-Kaufman & Sawyer, 2004) as well as students' gains in reading and

math (Rimm-Kaufman, Fan, Chiu & You, 2007). Abry et al. (2013) also found that

Responsive Classroom (RC) training had an indirect association between the training and

improved student-teacher interaction quality through teachers' use of the *RC* practices.

In other words, teachers who received *RC* training were more likely to implement *RC*

practices and, in turn, those teachers using *RC* practices frequently and with sufficient

quality showed greater improvements in teacher-student interaction quality.

In sum, this body of research has shown that interventions aimed at improving

adult-child and student-teacher relationships can positively impact child and student

behavior. These interventions are based largely on behavior theory. The following

intervention, Banking Time, is unique in its theoretical perspective in that it is based on

attachment theory.

A Teacher Directed Intervention: Banking Time

Pianta and Hamre (2001) have published a consultation system, Students,

Teachers and Relationship Support (STARS), that is designed to improve student-teacher

relationship quality. The program is aimed at students with poor teacher relationships,

characterized by low closeness, high dependency and high conflict. The STARS program

is multifaceted and involves three components. The specific technique aimed at

improving student-teacher relationships is Banking Time. The Banking Time (Pianta &

Hamre, 2001) intervention is based on attachment theory and interventions designed to

strengthen relationships between children and parents. Parent-child interventions

frequently contain a component involving a parent-child dyad interacting in a nondirective, child-centered play session (Driscoll & Pianta, 2010).

Robert Pianta created the Banking Time intervention, which is designed to enhance the relationships between children and teachers, particularly for students having difficulty in the classroom. The intervention is called Banking Time because of the metaphor of saving up "positive experiences" so that the relationship between the student and the teacher can withstand conflict, tension and disagreement without deteriorating (Pianta, 1999). Banking Time is adapted from Barkley's (1987) work with parents and children. Instead of focusing on the parent-child relationship, it focuses on the student-teacher relationship. The intervention is called Banking Time to emphasize that relationships serve as resources for children. Teachers can invest in these resources during one-on-one sessions with students and draw upon the capital invested by the student-teacher dyad to help solve behavioral problems or conflicts in the classroom (Driscoll & Pianta, 2010). The principals of Banking Time are similar to those of Teacher-Child Interaction Therapy (McIntosh, Rizza, & Bliss, 2000), in which teachers engage in non-directive sessions with children designed to enhance the quality of the student-teacher relationship (Driscoll & Pianta, 1999).

Banking Time sessions are a set of one-on-one meetings between students and their teachers that are specifically structured to meet a relational goal. The sessions are designed to strengthen the student-teacher relationship by giving the dyad regular opportunities to interact positively. The meetings are scheduled for a specific amount of time and are not contingent on the student's behavior. During each Banking Time session the student and teacher participate in an activity selected by the student. The

session is led by the student as the teacher watches, listens and conveys acceptance and understanding. There are four components to Banking Time: (a) observing the student's actions, (b) narrating the student's actions, (c) labeling the student's feelings and emotions and (d) developing relational themes (Driscoll and Pianta, 2010).

There are two published studies documenting the effectiveness of Banking Time. Driscoll and Pianta (2010) conducted the initial study to investigate the effectiveness of Banking Time.   The study examined Banking Time effects in relation to changes in teacher-reported relationship quality, teacher-rated child behavioral outcomes and observer-rated teacher-child interactions during two six-week intervention periods. The sample consisted of 29 Head Start teachers and 116 children. Two boys and two girls were randomly selected from each classroom. Head Start centers were randomly assigned to either an experimental or control condition. Experimental condition teachers (n=19) implemented Banking Time in their classroom, whereas the control group teachers (n=10) maintained their typical classroom routine throughout the study. For the experimental condition, two children were randomly selected to participate in Banking Time, and two children served as within-classroom controls. The study included fall and spring cohorts. In order to ensure equal numbers of male and female participants, teachers in the experimental condition implemented Banking Time with either a boy or girl in the fall and with a child of the opposite gender in the spring (Driscoll & Pianta, 2010). Teachers in both conditions completed a series of measures twice in the fall and twice in the spring. The measures assessed the following areas: adjustment concerns; classroom and child demographic characteristics; teacher beliefs; teacher-child relationship quality; and child behavior (Driscoll & Pianta, 2010). In order to identify

children who were at greatest risk for, adjustment problems, teachers were asked to rank boys and girls in their class according to adjustment concerns. Teachers provided separate lists of male and female students, with children at the top of the list displaying more adjustment problems. This measure was used as a child selection instrument (Driscoll & Pianta, 2010).

Classroom demographics were measured using a brief questionnaire pertaining to class size, teaching experience and classroom composition. Child demographics were also measured with a questionnaire for each selected child that obtained the child's date of birth, gender, ethnicity, and English as a Second Language (ESL) status (Driscoll & Pianta, 2010).

The Modernity Scale (Schaefer & Edgerton, 1985) was used to measure teacher's beliefs. This is a likert-type questionnaire that discriminates between traditional or relatively adult-centered perspectives on interactions with children and more modern or progressive child-centered practices. Cronbach's alpha for this scale was reported at .84 by the scale's author and .82 in this present sample. This measure was included in this study because it was hypothesized that teachers who hold child-centered beliefs may be more skilled at implementing Banking Time than teachers who hold adult-centered views regarding child development (Driscoll & Pianta, 2010).

A scale measuring teacher's enthusiasm about the intervention was also administered. Teachers were asked to rate their enthusiasm about implementing Banking Time from 1 (*not enthusiastic at all)* to 5 *(very enthusiastic)* (Driscoll & Pianta, 2010). The Student-Teacher Relationship Scale (STRS; Pianta & Hamre, 2001) was used in both the experimental and control groups to assess teacher perceptions of relationships with

study children. The STRS consists of 15 items measured on a five-point Likert-type scale. The items on the scale are based on a previous 16-item version (Pianta & Nimetz, 1991) developed from attachment theory, the attachment Q-set (Waters & Deane, 1985), and a review of literature on teacher-child interactions. Two subscales, closeness and conflict are derived from the STRS. Internal consistency for both factors is high (Cronbach's alpha=.86 and .93 for closeness and conflict, respectively; .85 and .94 for the present study). The STRS has demonstrated validity with regard to predicting academic and social functioning in pre-kindergarten through the elementary grades (Hamre & Pianta, 2001; Pianta, LaParo, Payne, Cox & Bradley, 2002) and has been used extensively in studies of preschool and elementary-age children (e.g. Birch & Ladd, 1997, 1998; Howes & Hamilton, 1992; Howes & Richie, 1999). The STRS has been validated with low-income and minority samples (Hamre & Pianta, 2001).

Teachers in both conditions were asked to engage in a structured interaction with each study child (Egeland & Hiester, 1993; Pianta, 1994). The interaction was facilitated and recorded by the project coordinator and was designed to assess the following: qualities of teaching; aspects of the child's behavior denoting emotional regulation in the context of the teacher-child dyad; and features of the dyad. This 15 minute teacher-child structured interaction task was adapted by Margaret Tresch Owen and research staff at the University of Texas at Dallas for the NICHD Study of Early Child Care and involves three tasks: Etch-a-Sketch maze; block-building activity; and jungle animal play. For the present study, the task was modified to consist of a 10-minute interaction with jungle animals and building blocks to simulate both teaching and pretend play. This task

facilitates measurement of the child's emotional regulation and the teacher's style of interaction in assisting the child (Driscoll & Pianta, 2010).

Child behavior was measured using the Teacher-Child Rating Scale (TCRS; Hightower et al., 1986). The TCRS is a 38-item teacher-reported rating scale of children's classroom behavior that was completed by teachers in both conditions. There are seven factor-based subscales: conduct problems; learning problems; shy/anxious problems; frustration tolerance; work habits; assertive social skills; and peer sociability. Internal consistency ranges from .86 to .95 and test-retest reliability ranges from .61 to .91. The TCRS has been employed as a measure of classroom adjustment. It correlated moderately with other behavior checklists as well as with grades and performance on standardized tests. Cronbach's alpha for this study was .93 (Driscoll & Pianta, 2010). In order to monitor intervention fidelity, teachers in the experimental group recorded brief information about each Banking Time intervention session. The log requested information about the date and length of the session as well as a brief description of session content and teacher relection (Driscoll & Pianta, 2010).

Teachers in the experimental condition were asked to videotape their second and last Banking Time sessions with each study child. Tapes were coded for teacher implementation of the four Banking Time components. Codes included the following: The teacher actively observes the child; the teacher follows the child's lead; the teacher narrates the child's actions; the teacher labels the child's feelings; the teacher asks the child questions; the teacher gives commands to the child; and the teacher attempts to teach the child a skill. The final three items were reverse coded. Each teacher was

assigned a fidelity percentage that described her overall level of fidelity from the videotaped Banking Time sessions (Driscoll & Pianta, 2010).

Findings suggested modest effects associated with the use of Banking Time. Analyses were run using the following groups: Banking Time versus within-class control and Banking Time versus no treatment control. Overall, the power statistics for the primary analyses were quite low, which severely limited the likelihood that significant results would be detected. Given that this was an exploratory study of an unevaluated intervention in a small sample, the alpha level was adjusted to .10. Cohen (1992) supports this adjustment in circumstances in which a less rigorous standard for rejection of the null hypothesis is desired in exploratory studies.

Results showed that children who participated in Banking Time showed increased teacher-reported frustration tolerance, task orientation, and competence and decreased conduct problems relative to their peers in the within-class control condition. Effect sizes ranged from .06 to .13 (Driscoll & Pianta, 2010). Results also showed that children in the intervention condition demonstrated greater gains in teacher-reported closeness than did children in the no treatment control condition. The effect size was medium at .08 (Driscoll & Pianta, 2010).

There are a certain limitations to this study. First, the participating teachers evaluated the student outcomes in the areas of adjustment concerns; classroom and child demographic characteristics; teacher beliefs; teacher-child relationship quality; and child behavior. This could have led to a biased outcome. Another limitation is the small sample size.

The second study, conducted by Driscoll, Wang, Mashburn and Pianta (2011),

examined teachers' implementation of Banking Time and its effects on students in a

state-funded preschool program. Participants were 286 preschool teachers who

participated in MyTeachingPartner, a web-based professional development intervention

for early childhood teachers in preschool classrooms. MyTeachingPartner was

implemented within a state-wide sample of classrooms participating in the Virginia

Preschool Initiative. The initiative is a state-funded preschool program that serves four-

year old children who experience social and/or economic risks. Children were eligible

for enrollment in the program based on the following criteria: poverty; homelessness;

parents or guardians are school dropouts, have limited education, or are chronically ill;

family stress as evidenced by poverty, episodes of violence, crime, underemployment,

unemployment, homelessness, incarceration, or family instability; child or developmental

problems; or limited English proficiency. In each participating classroom, approximately

four children were randomly selected to participate in an evaluation of the effects of

different components of the intervention on children's development of language, literacy

and social-emotional competencies (Driscoll et al., 2011).

Teachers participated in one of three study conditions. In the Consultancy

condition, teachers received materials (books, activities) to implement; activities that

promote students' language/literacy and social-emotional development; access to the

MyTeachingPartner website that describes and demonstrates dimensions of high quality

teaching and provides resources to teachers to promote high quality teaching in their

classrooms (including a description of Banking Time); and access to a teaching

consultant with whom teachers discussed their teaching practices every two weeks. This

was the only condition in which teachers received face-to-face training with a consultant. In the Web-Access condition, teachers received the materials to implement language/literacy and social-emotional activities, and access to the MyTeachingPartner website. Lastly, in the Control condition, teachers received the language/literacy and social-emotional activities and access to a limited portion of the MyTeachingPartner website, which included resources for implementing Banking Time (Driscoll et al., 2011).

Visits to the Banking Time web-page was documented using a web-server that automatically recorded the duration of each teacher's visits to each web-page on the MyTeachingPartner web-site. The effect of the amount of time spent on Banking Time web-pages was examined. Also, at the end of the school year, teachers indicted regarding whether they conducted at least one Banking Time session with each of the four selected children in their class (Driscoll et al., 2011).

Teacher characteristics were measured at the beginning of the school year. Teachers completed a questionnaire that measured the following demographics- level of degree, field of study and years of teaching experience. Teachers also completed measures of self-efficacy and ideas about children (Driscoll et al., 2011). Self-efficacy was measured using a seven-item version of the Teacher Self-Efficacy Scale. This assessed teachers' sense of efficacy regarding management and motivation of children in their classrooms. The response selection ranged from "Nothing" to "A great deal" and items included questions such as "How much can you do to get through to the most difficult students?" The internal consistency (alpha) for these seven items from this study was .86 (Driscoll et al., 2011).

Teachers' ideas about children were measured with the Modernity Scale (Schaefer & Edgerton, 1985). This assesses teachers ideas about educating children along a continuum ranging from "traditional" or relatively adult-centered perspectives on interactions with children and more "modern or progressive" child-centered practices. Cronbach's alpha for this scale was reported at .84 by the scale's authors, and .80 in the study sample (Driscoll et al., 2011).

Classroom characteristics were measured through a questionnaire completed by teachers at the beginning of the school year. It measured the following characteristics: percentage of children who had limited English proficiency (LEP); percentage of children who had Individualized Education Plans (IEP); and the number of children enrolled. The average economic background of children within each class was computed using information collected from the family demographic surveys completed by parents/guardians. The income-to-needs ratio is a measure of family poverty that uses the federal criteria for poverty, which is based on the total household income and the number of adults and children within each household. The mean income-to-needs ratio of children in each class served as the classroom level measure of family poverty (Driscoll et al., 2011).

Child characteristics were measured through a demographic questionnaire completed by a family member. The questionnaire obtained information on the child's gender; race/ethnicity; and the number of years of maternal education (Driscoll et al., 2011).

Child language and literacy skills were collected at the beginning of the school year. Teachers used the Academic Rating Scale (NCES, 1999). This scale measured

kindergarten teachers' perceptions of children's language and literacy skills including speaking, listening and early reading and writing. Ratings are made on a likert scale that ranges from 1 to 5. The internal consistency (Chronbach's alpha) for the Language and Literacy scale in this sample was .93 (Driscoll et al., 2011).

Child social-emotional competence was also assessed at the beginning of the school year. Teachers used the Teacher-Child Rating Scale (TCRS, Hightower, Work, Cowen, Lotyczewski, Spinnell, Guare, & Rohrbeck, 1986) and the Student-Teacher Relationship Scale (STRS, Pianta, 2001). The TCRS (Hightower et al., 1986) is a behavioral rating scale that assesses two dimensions of children's social and emotional competence: problem behaviors and social competence. The internal consistency (Cronbach's alpha) for the problem behavior subscale was .94 at the beginning of the school year, and .95 at the end of the school year. The internal consistency (Cronbach's alpha) for the social competence scale was .92 at the beginning of the school year and .90 at the end of the school year (Driscoll et al., 2011).

The Student Teacher Relationship Scale (STRS, Pianta, 2001) provides measures of Conflict and Closeness between a child and the teacher, and scores range from 1 to 5. The Closeness scale is the mean of seven items and achieved a Cronbach's alpha of .86 for the fall and .84 for the spring. The Conflict scale is the mean of eight items and achieved a Cronbach's alpha of .89 for the fall, and .87 for the spring (Driscoll et al., 2011).

Regression analysis and logistic regression analysis were used to examine the research questions. Results of this study indicate that implementation of Banking Time was influenced by the additional supports teachers received as part of the intervention

study. Teachers who were provided access to the Banking Time resources on the MTP website, but who were not provided additional resources to promote its implementation were less likely to implement Banking Time. This was compared to teachers who received access to the full range of web-based resources on the MTP website. These teachers were over eight times more likely to implement Banking Time with students. Teachers who worked with a consultant were also more likely to implement Banking Time (Driscoll et al., 2011).

The effects of Banking Time on changes in teacher-child relationships were small. Children who participated in the study gained 0.4 point in Social Competence during preschool on the 1 to 5 rating scale, compared to 0.3 point gained by children who did not participate (Driscoll et al., 2011).

Banking Time also had an influence on child outcomes. Results indicated that children who participated in Banking Time developed closer relationships with their teachers over the course of the school year than children who did not participate in Banking Time. The impact of Banking Time influenced only teacher-child Closeness. Changes in Conflict between teachers and children were not influenced by Banking Time. Participation was also associated with changes in children's social behaviors, specifically Social Competence (Driscoll, et al., 2011).

There are some serious limitations to this study. The first is the absence of additional reporters. The same teacher was asked to report on the teacher-child relationship and child behavior at the beginning and end of the school year. The use of additional reporters, such as teaching assistants or trained observers, would allow for greater confidence in the accuracy of the child ratings (Driscoll et al., 2011). A second

limitation is that the implementation fidelity was not measured. It is not clear whether teachers who implemented Banking Time with greater frequency or with higher quality demonstrated increased positive child outcomes (Driscoll et al., 2011).

Overall, this study found that Banking Time has the potential to be an effective tool for building relationships between teachers and children during preschool and for promoting children's social competence. This suggests that Banking Time may have lasting benefits for children's social and academic outcomes as children progress through the higher grades (Driscoll et al., 2011).

Purpose of the Current Study and Hypotheses

Research has shown two important findings in this area. First, early student-teacher relationships are associated with important social outcomes for students. Secondly, that interventions aimed at improving adult-child relationships can change child behavior. Banking Time appears to be a promising intervention for children at risk for negative academic, social and behavioral outcomes that merits further exploration.

Banking Time stands apart from other interventions in several ways. First, it is unique in that its theoretical perspective is different than other interventions. Other interventions, such as TCIT, the Child's Game, PCIT and Barkley's programs, are based largely on behavior theory, whereas Banking Time is based on attachment theory. Banking Time is also a teacher-directed intervention, whereas Filial Therapy, the Child's Game, PCIT and Barkley's programs are parent-directed; and Kinder Therapy is conducted jointly by a counselor and a teacher. Lastly, in Banking Time, the teacher meets individually with the target student, whereas the Responsive Classroom is a technique performed with the entire class. In summary, the Banking Time intervention is

the only intervention that is teacher-directed, conducted individually with a student, and based on attachment theory.

Banking Time has been researched only with the preschool/Head Start population. This study was intended to advance our understanding of the relationship between the student-teacher relationship and behavioral adjustment by focusing on Kindergarten and First Grade children. The experiment was specifically designed to test the following hypotheses:

Hypothesis One: Student problem behavior will decrease following implementation of the Banking Time intervention.

Hypothesis Two: Student-teacher relationship quality will improve following implementation of the Banking Time intervention.

The purpose of this study was to examine the effects of the Banking Time intervention on student-teacher relationships and problem behaviors in early childhood. The previous two studies on Banking Time examined it with preschoolers. This study expanded the scope to early elementary students. Driscoll and Pianta's (2010) study allowed for more violation than this study, which utilized a .05 alpha (Driscoll & Pianta, 2010).

Participants in this study were selected to represent the early childhood age period of grades K-1 (5-7 year-olds). Consistent with the findings of Driscoll and Pianta (2010), it was expected that students participating in Banking Time would strengthen their relationships with their teachers and that there would be a decrease in problem behaviors.

In Sum

When children enter school teachers can function as an alternative caregiver and students can form both secure and insecure attachments with them. Secure and positive relationships with teachers have been associated with better student outcomes than insecure and negative student-teacher relationships. Pianta, Steinberg and Rollins (1995) found that positive student-teacher relationships were associated with an increase in behavioral competence and better school adjustment. Howes et al. (1994) found that a secure attachment with teachers may result in students who were more sensitive, empathetic, gregarious and had an overall higher sociometric rating. Numerous researchers have reported that a high-quality student-teacher relationship was associated with students' social competence and a decrease in classroom behavior problems (Meehan et al., 2003; Rimm-Kauffman, 2002). However, conflicts in the student-teacher relationship have been related to negative school attitude and hostile aggression (Birch & Ladd, 1997; Doumen et al., 2008; Howes et al., 1994).

Poor student-teacher relationships in early childhood can have long-lasting behavioral effects. For example, Howes (2000) reported that poor student-teacher relationships in preschool were associated with behavioral problems in elementary school. Pianta et al. (1995) also found that a high-quality student-teacher relationship in kindergarten were associated with high-quality student-teacher relationships in second grade. Lastly, Hamre and Pianta (2001) reported that student-teacher relationship quality in kindergarten was related to academic and behavioral outcomes through the eighth grade, especially for students with high levels of behavior problems in kindergarten and boys in general.

There is an abundance of literature to support the argument that strong and healthy relationships between students and teachers are fundamental to the healthy development of individual children and all students in school (Birch & Ladd, 1998; Hamre & Pianta, 2001; Pianta, 1999). Banking Time appears to be a promising intervention to strengthen the student-teacher relationship, ultimately leading to optimal behavioral and academic outcomes for the students.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

Overall Approach and Rationale

In order to gain a deeper understanding of the impact that the Banking Time intervention has on student-teacher relationships and behavioral adjustment in early childhood, a mixed qualitative and quantitative methodological approach was used in this study. From a quantitative methods point of view, two numerical scales were used in this study, as well as a tally form and teacher questionnaire. On the qualitative side, a child questionnaire was conducted pre and post intervention. With the use of the Statistical Package for the Social Sciences (SPSS), computations have been made and tables and charts have been created.

Research Design

This mixed methods study involved a within- and between-subjects analysis with a 2x2 mixed factorial design. The independent variable was the Banking Time intervention. The dependent measures were the student-teacher relationship (as measured by the Student Teacher Relationship Scale; STRS; Pianta & Hamre, 2001) and problem behaviors (as measured by the Teacher Report Form; TRF; Achenbach, 1991 and the student observation tally form).

A within/between subjects analysis of variance (ANOVA) was performed with the collected data. A within-subjects design is an experimental design where the participants are measured multiple times and their scores are compared. A between-subjects design is an experimental procedure that measures differences between groups (i.e. experimental and control). A within/between subjects design refers to the fact that

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the design has both within-subjects (pre and post testing) as well as between-subjects (experimental and control groups) factors (Alberson, 2010). For analysis of variance, the test statistic was the *F*-ratio. The *F*-ratio is based on variance. It is calculated by dividing the variance (difference) between sample means by the variance (difference) expected by chance (error) (Gravetter & Wallnau, 2004).

A within/between subjects ANOVA requires some assumptions. The first of which is normality. Normality assumes that scores are normally distributed within the population. The second assumption is homogeneity of variance, which assumes that scores have equal variance in the populations. The last assumption is sphericity of the covariance matrix. This ensures that the F ratios match the F distribution (Wells, 2008).

Research Questions

The research questions that were addressed in this study were:

1. What are the teachers' opinions of the Banking Time intervention?

2. What is the effect of the Banking Time intervention on student problem behavior?

3. What is the effect of the Banking Time intervention on student-teacher relationship quality as measured by the Student Teacher Relationship Scale?

4. What is the effect of the Banking Time intervention on student-teacher relationship quality from the students' perspectives?

Research Hypotheses

The research hypotheses were:

Hypothesis One: Student problem behavior will decrease following implementation of the Banking Time intervention.

Hypothesis Two: Student-teacher relationship quality will improve following implementation of the Banking Time intervention.

Site and Participant Selection

The school used in this study was located in central Massachusetts in a predominantly middle-class rural town. It was a pre-school through first grade school with an enrollment of 333 in 2013-2014. The kindergarten and first grade population was selected for this study, as the Banking Time intervention has not yet been examined with this population. Also, these are the years when students face heightened expectations for behavioral compliance, sustained attention and social integration. The ability to follow classroom rules, attend to learning tasks and inhibit aggression when managing conflicts becomes critical for early school behavioral adjustment and academic success (Thomas et al., 2008). The study was designed to see whether the Banking Time intervention could assist these students with their behavioral adjustment.

The school population was 88% White, 6.9% Hispanic, 3% Multi-Race, Non-Hispanic, 1.2% Asian, .9% African American, with 1.07% characterized as English as a Second Language (ESL) students. Students with special education services made up 14.75% of the student body. The Students characterized as low income made up 46.11% of the population. This school was a Title I school.

Table 1: Sample characteristics

	Percentages
Race/Ethnicity	
White	88
Hispanic	6.9
Multi-Race (Non-Hispanic)	3.0
Asian	1.2
African American	0.9
Low Income Households	46.11
English as a Second Language	1.07
Students Receiving Special Education Services	14.75

After conducting an a priori power analysis, it was determined that 90 elementary students attending this school would be eligible as participants. The alpha is .05. It was decided that a practical significant difference on the TRF is 6 points. Cohen's D was calculated based on this difference. Using G Power software, Cohen's D (.3) was

converted to an effect size (F) which equals .15. Then, using G Power, the power was calculated at .8. G Power was also used to calculate the sample size of 90 students.

Informed consent was obtained from parents or legal guardians, and an incentive was used so that students were motivated to get their informed consent papers signed. See Appendix A. The incentive allowed students to select a small toy or piece of candy from a "Treasure Box". The sample was gender-matched between the experimental and control groups.

Instrumentation

There were several instruments used in this study to collect both quantitative and qualitative data. On the quantitative side, two numerical scales were used in this study, the Student Teacher Relationship Scale (STRS) and the Teacher Report Form (TRF). A student observation form was also created in order to obtain a further measurement of student classroom behavior. On the qualitative side, a child questionnaire was conducted pre and post intervention. A Classroom Life Measure was also used to obtain information about the students' perceptions of classroom climate. Lastly, teachers were surveyed pre- and mid-intervention in order to obtain information about their opinions of the intervention and to assess intervention fidelity. These instruments and their psychometric characteristics are now described in detail.

Student-Teacher Relationship Scale (STRS)

Estimates of the test-retest reliability and stability of the STRS were obtained from a subsample of the normative population. Using a subsample of 24 kindergarten teachers, each reporting on three students in their class (N=72), the STRS was completed twice during a four-week interval. Test-retest correlations were as follows (all significant

at $p<.05$): Closeness, .88; Conflict .92; Dependency, .76; Total, .89. These estimates indicated adequate test-retest reliability over a four-week period (Pianta, 2001).

Estimates of internal consistency and item-level statistics for the STRS were obtained using Cronbach's (1951) alpha. For the total normative sample, internal consistency reliability estimates for the Total scales as well as for Conflict and Closeness subscales were high (.89, .92, .86, respectively). However, reliability for the Dependency subscale was not as high (.64). This is partly due to the fact that only five items comprise the Dependency subscale. Pianta (2001) recommends that the Dependency subscales be interpreted with caution, and that users do not interpret Dependency subscale scores in isolation from the rest of the STRS scale and subscale scores.

Since 1991, the STRS has been used in a large number of studies to measure the quality of the student-teacher relationship and the impact the student-teacher relationship has on various outcomes and academic variables. Validity studies indicate that the STRS correlates in predictable ways with concurrent and future measures of academic skills, including performance on standardized tests (Hamre & Pianta, 2001), behavior problems and competencies in elementary classrooms (e.g. Pianta, 1994; Pianta et al., 1995), and peer relations (Birch & Ladd, 1998). The STRS scale and subscales show strong evidence for concurrent and predictive validity (Pianta, 2001).

For this study, the STRS was completed by the classroom teachers pre- and post-intervention.

Teacher Report Form (TRF)

The normative sample for the TRF consisted of 4,437 youth ages six to eighteen. In this sample, the test-retest reliability was found to be "acceptable" (r=.85). However, the inter-rater reliability was found to be "questionable" (r=.51) (Achenbach, 1991).

The content validity of the TRF items has been strongly supported by nearly four decades of research, refinement, consultation, and feedback. There is also evidence of the ability for all of the items to discriminate significantly (p<.01) between demographically similar referred and non-referred children (Achenbach & Rescorla, 2001). The criterion-related validity of the TRF scales was supported in many ways, such as evidence for significant associations with similar scales of other instruments and with DSM criteria; by genetic and biochemical findings; and by predications of long-term outcomes (Achenbach & Rescorla, 2001).

For this study, the TRF was completed by teacher aides/Title I/special education staff pre- and post-intervention. The use of an outside rater helped to eliminate the bias that would have resulted if the classroom teacher had completed the form. The same rater completed both the pre-intervention and post-intervention form. This helped to eliminate any problems with inter-rater reliability.

Student Observation Form

The student observation form is a self-created tally measure that was used to document student problem behaviors in the classroom, because it was important to obtain observational data on the students, as well as survey data from their teachers. It was developed based on items from the Teacher Report Form (TRF). These items include: hums/makes other odd noises; argues/doesn't get along with others/fights; defiant/talks

back to staff or teacher; brags/boasts; can't sit still/restless/fidgets/inattentive; cruelty/bullying/meanness to others; difficulty following directions/disobedient; disturbs other pupils; and cries. These items were included on the Student Observation Form, as they mirror the items on the Teacher Report Form. The use of the dual instruments (Student Observation Form and Teacher Report Form) allowed for a more valid picture of the target students.

An external blind rater conducted these observations. Inter-rater reliability was at the 90% criterion level. Reliability was checked pre-study and before the final data collection period.

Identified students were observed for a total of 30 minutes pre- and post-intervention. The observations took place in five-minute blocks of time during classroom time, recess, lunch and transition times. The student observations were a critical part of the measurement of student problem behaviors in the classroom, as the other measure of behavior used in this study was based on teacher report. See Appendix B.

Child Questionnaire

Two randomly selected children from the experimental group and two children from the control group were administered a questionnaire, pre- and post-intervention. The questionnaire employed a doll-test technique with questions that are based on work by Robert Pianta. The purpose of the questionnaire was to gain insight into the student-teacher relationship from the student's perspective. The reason a questionnaire was administered to a sample of children, instead of using a measure on all of them is because, according to Robert Pianta (personal communication, January 12, 2011), the available student reports for this age group do not work all that well. Available self-

report measures (i.e. <u>Relatedness Scale,</u> <u>Perceived Caring,</u> <u>Teacher Treatment Inventory</u>) are inappropriate for children under the age of eight.

The questionnaire was designed therefore to examine the student-teacher relationship from the child's perspective. The questionnaire contained general questions about school, as well as questions about how teachers make students feel positive; what teachers do that upsets children; how teachers handle anger; the nature of punishment in class; how attention is allocated; how teachers are helpful; and questions about the child's favorite teachers. These questions were selected because they access the child's perception of his or her relationship with his or her teacher.

The questionnaire began by introducing two teacher dolls to the students. The administrator recited a statement such as "This teacher (points to one doll) makes kids feel good. This one (points to the other doll) makes kids feel bad. Which teacher is like your teacher?" Each subsequent question followed in the same manner with the administrator explaining a characteristic that each teacher doll possessed and the child being asked to select the teacher that is most like his/her teacher. See Appendix C.

Classroom Life Measure

A modified version of the *Classroom Life Measure* (Johnson & Johnson, 1983) was administered to every child in the participating classrooms in order to assess the students' perception of the classroom climate (i.e. perception of classroom social support and feelings about school). It was important to obtain this information to see if the classroom climate was related to student problem behaviors and student-teacher relationships within the classroom. The original *Classroom Life Measure* is a widely-used instrument with established validity and reliability (Johnson & Johnson, 1996). The

original measure is based on a likert scale of 1-5 with 37 statements. Due to the fact that this scale was used with a kindergarten and first grade population, it was modified for this study. The modified version had 12 statements that were selected based on and used "Yes", "Sometimes" and "No" for responses. The statements were selected based on dimensions of student feelings toward their teacher, student feelings about classmates and student feelings about themselves. Statements were read to the students and they were asked to respond accordingly. See Appendix D.

Teacher Survey

Teachers were surveyed pre- and mid-intervention using a self-created likert-type survey. This was designed to determine their opinions of the Banking Time intervention. The survey also provided information on the fidelity of the intervention implementation by the teachers.

The survey provided teachers with the opportunity to explain the Banking Time intervention in their own words. The survey consisted of 17 questions. Teachers were asked to read the statements and indicate the extent to which they agree or disagree using a likert scale. The likert scale had four categories: Strongly Disagree (SD); Disagree (D); Agree (A) and Strongly Agree (SA). The statements discussed the helpfulness of Banking Time in terms of strengthening relationships and reducing problem behaviors; the time commitment of Banking Time; and the implementation of Banking Time. There was a section for clarifications and/or additional comments at the end. See Appendix E.

Procedure

This study was conducted over the course of two months (with two cohorts participating for four weeks each) and included both experimental and control groups.

The study did not begin until the month of December, which allowed the teachers enough time to really get to know their students and identify which ones they considered to be at risk for problem behaviors.

In order to identify students who were at the greatest risk for problem behavior issues, teachers were asked to rank order their class according to adjustment concerns in early December. Teachers were provided a list of their students, and asked to place their students into three categories- no concern, borderline concern and critical concern. For students placed in either the borderline concern or critical concern categories, teacher aides/Title I/special education staff completed the Teacher Report Form (TRF). Students who scored in the clinical zone on the TRF were included in this study.

Students included in the study were randomly assigned to either the experimental or control group using graphpad.com. Students were matched on age, gender and TRF score prior to random assignment. The experimental and control groups were then randomly split in half which allowed two different cohorts to be examined. Students in both groups were observed by an outside blind rater using the Student Observation Form. Two children in both experimental groups and two children both control groups were also randomly selected to be administered a questionnaire pre-and post-intervention. See Appendix C. Teachers in the experimental and control groups also completed the Student Teacher Relationship Scale for cohort 1 in early January and cohort 2 in early February. Teachers in the experimental (Banking Time) group received the Banking Time manuals and participated in professional development workshops eliciting a detailed explanation of the intervention and detailed guidelines for intervention implementation in early January. Teachers in the experimental groups also completed a likert-type survey pre-

and mid-intervention to obtain their opinion of the Banking Time intervention. See Appendix E.

Students in the experimental group participated in Banking Time with their teacher starting in mid-January for cohort 1 and mid-February for cohort 2. The intervention began in January/February in order to allow enough time between the December rank-orderings and then the teacher trainings in Banking Time. It was conducted three times a week with each at-risk student. Robert Pianta suggests that Banking Time be conducted at least once per week. The students spent 15 minutes with their teacher one-on-one while an aide, teacher or other specialist conducted the class. The Banking Time intervention took place for four weeks, from mid-January until mid-February for cohort 1 and mid-February until mid-March for cohort 2.

The control group was exposed to the reading of a child-selected book with the teacher for 15 minutes three times per week. The book was read to the child by the teacher; or to the teacher by the child.

At the end of the intervention, both experimental and control group teachers again completed the STRS and the same person who completed the initial TRF completed it again. Observations and questionnaires were also conducted again by the outside blind rater. An analysis of variance was conducted to identify differences between students who received the Banking Time intervention and those that did not.

Introducing Banking Time to the Teacher and Child

The goal of the introductory teacher training sessions was to familiarize the teacher with the Banking Time intervention and to get her thinking about how she might change the quality of her interactions with students, particularly those who are

behaviorally challenged. The teacher also learned how to introduce this intervention to the student. See Appendix F for the Banking Time Teacher Training Curriculum.

Teacher Training for Banking Time

Teachers were trained in the use of Banking Time through three professional development workshops conducted by the investigator. The purpose of the Banking Time training sessions was to enable teachers to learn how to conduct Banking Time sessions with students. The training gave teachers the opportunity to learn about, discuss and engage in the Banking Time intervention. Before teachers employed the Banking Time intervention, they understand the major components and theoretical background of Banking Time.

At the first workshop, the investigator provided teachers with a copy of the Banking Time manual and provided an oral review of the major components of Banking Time through a PowerPoint presentation.   This allowed the teachers to understand Banking Time and to become more comfortable with the execution of the procedures. It also stimulated conversations and anticipated problems with the implementation were discussed.

At the second workshop, participants paired-off with the investigator to engage in practice Banking Time sessions with the investigator acting as the teacher and the teacher role-playing as a student. At the third workshop, roles were reversed with the investigator role-playing the student and the teacher acting as the teacher. The investigator provided feedback during all workshops. A Banking Time Criterion Checklist was used to determine the teachers' competencies at carrying out Banking Time. See Appendix G. A fourth workshop was planned for teachers not meeting

competency after the initial three workshops, however it was not necessary. If teachers had not reached competency after the fourth workshop, they would have been excluded from the study. Once the teachers reached competency, the teacher and the investigator met to develop a plan for Banking Time implementation. See Appendix G.

Competency, as measured on the Banking Time Criterion Checklist, was determined by an observation of the teacher engaging in a role-playing situation of Banking Time. During the role-play, the teacher could never give commands, ask questions, criticize or give obvious attention to other students or extraneous activities. The investigator was observing to see if the teacher spends a few moments with the "child" before joining in; narrates the "child's" play through reflection or imitation and conveys non-verbal interest through smiles, nods and/or gentle touches. The Checklist was completed to see if the teacher reached the level of competency needed to carry out Banking Time in her classroom. See Appendix G. All of the teachers passed the training criteria at the end of session three and were approved to implement Banking Time in their classrooms.

Teacher Training for Control Group

Teachers in the control group attended a short workshop after school. They were instructed to read a child-selected book with their student(s) for 15 minutes three times per week. The book was read to the child by the teacher; or to the teacher by the child.

Introducing Banking Time to the Child

The Banking Time intervention targets the teacher-child dyad. Just as it was important for the teacher to have a thorough understanding of Banking Time, the child also needed to be introduced to this intervention in a thoughtful manner. Children were

selected for this intervention if they scored in the clinical zone of the Teacher Report Form, meaning that the total T Score was equal to or greater than 60 (93rd percentile). The teacher introduced Banking Time to each individual child by emphasizing that she was concerned about the child, without blaming the child for inappropriate behavior. The teacher informed the child that the sessions would be regularly scheduled, non-contingent on behavior, and somewhat different from regular classroom time. The teacher checked in to make sure that the student was listening and understanding what the teacher was saying. The teacher then inquired about how the student was feeling and asked the student what he/she thought of the idea. This introduction was given the day before the first Banking Time session.

CHAPTER 4

RESULTS

Introduction

The purpose of this study was to examine the effect of the Banking Time intervention on student-teacher relationship quality and problem behaviors in the classroom. This chapter will review the research questions and associated hypotheses, while the results of the present study relevant to each research question and associated hypotheses will be presented sequentially. A general discussion of findings, conclusions and implications are then presented in Chapter Five.

Research Questions and Associated Hypotheses

The research questions that were addressed in this study were:

1. What are the teachers' opinions of the Banking Time intervention?

2. What is the effect of the Banking Time intervention on student problem behavior?

3. What is the effect of the Banking Time intervention on student-teacher relationship quality as measured by the Student Teacher Relationship Scale?

4. What is the effect of the Banking Time intervention on student-teacher relationship quality from the students' perspectives?

The research hypotheses were:

Hypothesis One: Student problem behavior will decrease following implementation of the Banking Time intervention.

Hypothesis Two: Student-teacher relationship quality will improve following implementation of the Banking Time intervention.

Data Analysis

It was hypothesized that positive changes in aspects of student appropriate behavior and student-teacher relationship quality would occur following the Banking Time intervention. The variables of behavior and student-teacher relationship quality were measured pre-intervention and post-intervention for both the experimental group (Banking Time) and the control group (reading). There was also an additional measure of classroom quality, as well as a teacher survey and student interview conducted.

Research Question One What are the teachers' opinions of the Banking Time intervention?

When teachers were surveyed pre- and mid-intervention, they all demonstrated adequate knowledge and understanding of the intervention. When teachers were asked to explain the Banking Time intervention in their own words, they responded with statements such as, "Banking Time is an intervention that will help build the student-teacher relationship in hopes that student behavior will improve."

The seventeen likert-type statements were scored in a quantitative manner. Each category was assigned a number (Strongly Disagree=1, Disagree=2, Agree=3 and Strongly Agree=4). More positive numbers represented higher levels of agreement. Eight of the questions were reverse-coded. The answers were totaled for each survey and then the mean was calculated. The mean of all seven surveys was 3.13, which is slightly higher than an "Agree" score. Thus, overall, participants had mostly positive opinions of the Banking Time intervention. The participating teachers felt that Banking Time was helpful in terms of strengthening relationships and reducing problem behaviors; the time

commitment of Banking Time was feasible; and the implementation of Banking Time

went well.

Table 2: Banking Time (BT) Teacher Survey responses

Statement	Strongly Disagree	Disagree	Agree	Strongly Agree	Total
BT helped to strengthen my relationship with BT students	0.0	0.0	71.4 (5)	29.6 (2)	100.0 (7)
BT sessions reduced problem behaviors	0.0	42.9 (3)	57.1 (4)	0.0	100.0 (7)
BT has had a negative impact on student behavior	42.9 (3)	57.1 (4)	0.0	0.0	100.0 (7)
I "click" with the BT students	0.0	42.9 (3)	57.1 (4)	0.0	100.0 (7)
Building relationships with students is important	0.0	0.0	0.0	100.0 (7)	100.0 (7)
The BT intervention helped to	0.0	0.0	57.1 (4)	42.9 (3)	100.0 (7)

strengthen my relationship with students					
The BT intervention had no impact on problem behaviors	28.6 (2)	28.6 (2)	42.9 (3)	0.0	100.0 (7)
BT had no positive effect on the BT students	28.6 (2)	42.9 (3)	28.6 (2)	0.0	100.0 (7)
BT helps students develop relationships with their teachers	0.0	0.0	42.9 (3)	57.1 (4)	100.0 (7)
I am uncomfortable conducting a BT session	57.1 (4)	28.6 (2)	14.3 (1)	0.0	100.0 (7)
The time that is allocated for BT is adequate	0.0	14.3 (1)	71.4 (5)	14.2 (1)	100.0 (7)
BT is too time consuming	28.6 (2)	71.4 (5)	0.0	0.0	100.0 (7)
Other interventions are more effective at	0.0	71.4 (5)	28.6 (2)	0.0	100.0 (7)

reducing problem behavior					
I received adequate training to conduct BT	0.0	0.0	57.1 (4)	42.9 (3)	100.0 (7)
I encountered problems implementing BT	28.6 (2)	28.6 (2)	42.9 (3)	0.0	100.0 (7)
I am closer to the BT students	0.0	14.3 (1)	85.7 (6)	0.0	100.0 (7)
I have a conflictual relationship with the BT students	14.3 (1)	71.4 (5)	14.3 (1)	0.0	100.0 (7)

The last part of the survey offered teachers the chance to clarify any answers or to add comments. Some comments included:

"My students really enjoyed that alone time with the teacher."

"I do feel that this is a great intervention for students as well as teachers. I found that students have a feeling of being 'special." It is a treat for them. The time does go by quick and it makes them want more."

However, one comment offered a different perspective:

"The students chosen for Banking Time have a host of issues that contribute to their behavior. I am concerned that this intervention may not be adequate to resolve or reduce their misbehavior."

Research Question Two What is the effect of the Banking Time intervention on student problem behavior?

In this study, behavior was analyzed with the Teacher Report Form and a self-created Behavior Observation Form. A within/between subjects analysis of variance (ANOVA) was performed with the collected data. The following hypothesis was answered:

Hypothesis One: Student problem behavior will decrease following implementation of the Banking Time intervention.

The between subjects results found that there was no significant difference between the experimental and control groups measurement of behavior using the TRF ($p=.352$), as seen in Table 3 below. However, a significant interaction was found between time/administration of rating scale and group. The Banking Time intervention group had an average decrease of 1.64 points on the TRF between the pre-intervention assessment and the post-intervention assessment; while students in the control group (reading) had an average decrease of .95 points on the TRF between the pre-intervention assessment and the post-intervention assessment, as seen in Figure 2 below. The difference in scores was significant ($p=.009$) with the partial eta squared coefficient accounting for 7.5% of the variance. This indicates that approximately 7.5% of the variance in reported scores can be explained by group assignment.

Table 3: ANOVA summary table for behavior as reported on the Teacher Report Form (TRF).

Source	SS	Df	MS	F	p	Partial Eta Squared
Between Subjects						
Group	42.050	1	42.050	.875	.352	.010
Error	4228.200	88	48.048			
Within Subjects						
Time	76.050	1	76.050	7.164	.009	.075
Time x Group	5.339	1	5.339	.503	.480	.006
Error	934.111	88	10.615			
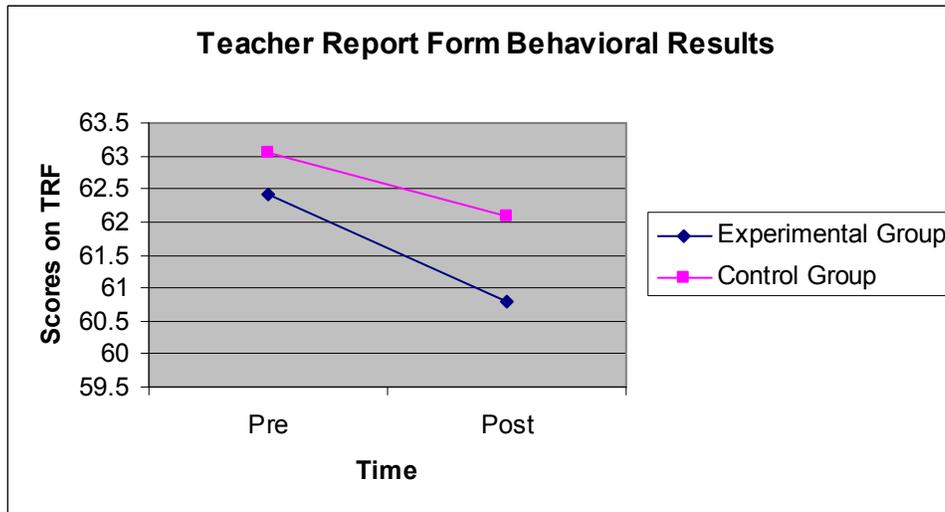
Figure 2: Pre-intervention and post-intervention scores on the Teacher Report Form (TRF) for the experimental and control groups.

As seen in Table 4 below, behavior was also observed with a self-created Behavior Observation Form. The students who participated in the Banking Time intervention had an average decrease of 1.71 points from the pre-intervention observation to the post-intervention observation. The students who participated in the experimental (reading) group also had an average decrease of .91 points from the pre-intervention observation to the post-intervention observation, as shown in Figure 3. However, within subjects, there was no significant difference for both the experimental and control groups pre-intervention and post-intervention ($p=.051$). The between subjects results also found there was no significant difference between the experimental and control groups measurement of behavior using the Behavior Observation Form ($p=.912$). In addition, there was no significant interaction between time and group ($p=.548$). Thus, there was no significant interaction across or within groups.

Table 4: ANOVA summary table for behavior as reported on the Behavior Observation Form.

Source	SS	Df	MS	F	P	Partial Eta Squared
Between Subjects						
Group	1.089	1	1.089	.012	.912	.000
Error	7822.556	88	88.893			
Within Subjects						
Time	77.356	1	77.356	3.913	.051	.043
Time x Group	7.200	1	7.200	.364	.548	.004
Error	1739.444	88	19.766			
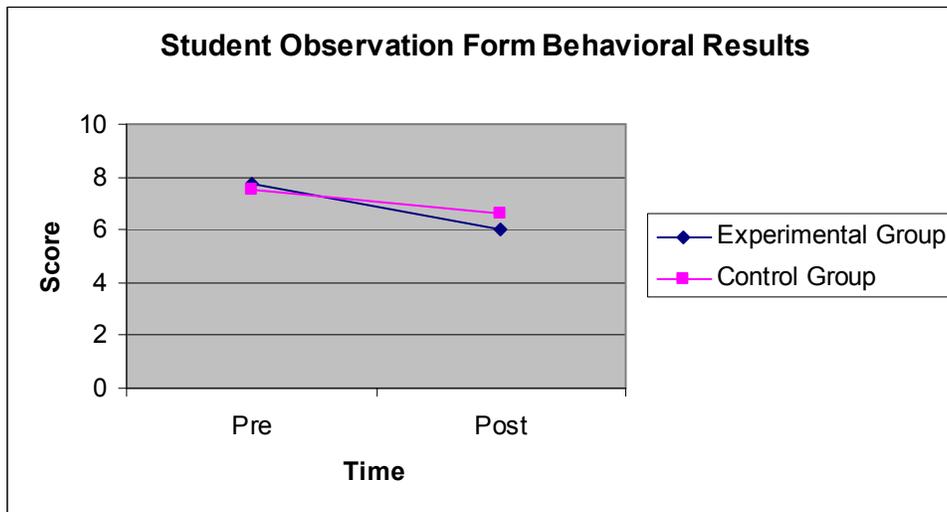
Figure 3: Pre-intervention and post-intervention scores on the Behavior Observation Form for the experimental and control groups.

In summary, the evidence based on teacher reports supports that the Banking Time intervention decreased student problem behavior; but more objective third party observations revealed no such trend. Thus, there is some evidence to support hypothesis one.

Research Question Three What is the effect of the Banking Time intervention on student-teacher relationship quality as measured by the Student Teacher Relationship Scale?

In this study, the student-teacher relationship was measured with the Student Teacher Relationship Scale. A within/between subjects analysis of variance (ANOVA) was performed with the collected data. The following hypothesis was tested:

Hypothesis Two: Student-teacher relationship quality will improve following implementation of the Banking Time intervention.

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The Student Teacher Relationship Scale was completed by the classroom teachers pre- and post-intervention.

The between subjects results found a statistically significant difference ($p=.043$) between the experimental group (Banking Time) and the control group (reading), as shown in Table 5.   However, the partial eta squared coefficient accounts for 4.6% of the difference, indicating that approximately 5% of the variance can be attributed to group assignment.

The within subjects results also found a statistically significant difference ($p=.009$) between the pre-test scores and the post-test scores. The partial eta squared coefficient accounted for 7.4% of the variance.

Table 5: ANOVA summary table for student teacher relationships.

Source	SS	df	MS	F	P	Partial Eta Squared
Between Subjects						
Group	233.472	1	233.472	4.234	.043	.046
Error	4852.356	88	233.472			
Within Subjects						
Time	56.672	1	56.672	7.062	.009	.074
Time x Group	63.606	1	63.606	7.926	.006	.083
Error	706.222	88	8.025			

For students in the experimental group (Banking Time), the student-teacher relationship, as reported by the STRS, decreased by an average of .06 points from the pre-intervention measure to the post-intervention measure. For students in the control group (reading), the student-teacher relationship improved by 2.31 points. Thus, there is a significant within subjects interaction between student-teacher relationships, time (pre- and post-) and group (experimental and control) ($p=.006$), with the partial eta squared coefficient accounting for 8.3% of the variance.

It is important to note that the pre-test scores for the experimental group (50.73) were higher than those of the control group (47.27). While the experimental group did not improve its scores, the control group did (up to 49.58). However, the control group never reached the level of the experimental group.

Simple effects analyses were examined with the experimental and control groups. The differences between the pre-intervention STRS scores and the post-intervention STRS scores within the experimental (Banking Time) group were not significant ($p=.911$). The differences between the pre-intervention STRS score and the post-intervention STRS scores within the control (reading) group were significant ($p=.000$).
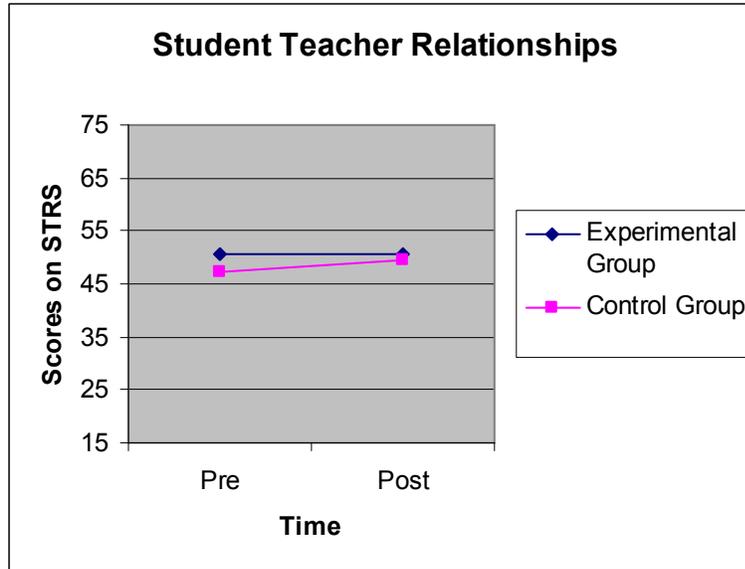
Figure 4: Pre-intervention and post-intervention scores on the Student Teacher Relationship Scale (STRS) for the experimental and control groups.

Table 6: Simple effects of STRS pre-intervention and STRS post-intervention within the experimental (Banking Time) group.

Paired Samples Test

		Paired Differences				
	Mean	Std. Deviation	Std. Error Mean	T	df	Sig. (2-tailed)
STRS Pre-STRS Post	.067	3.985	.594	.112	44	.911

Table 7: Simple effects of STRS pre-intervention and STRS post-intervention within the control (reading) group.

Paired Samples Test

		Paired Differences				
	Mean	Std. Deviation	Std. Error Mean	T	df	Sig. (2-tailed)
STRS Pre-STRS Post	-2.311	4.027	.600	-3.850	44	.000

In summary, it does not appear that the student-teacher relationship quality improved significantly following the implementation of the Banking Time intervention. It is important to bear in mind that the control group (reading) improved their Student-Teacher Relationship scores by an average of 2.31 points. However, the Banking Time group decreased their Student-Teacher Relationship scores by an average of .06 points. Hypothesis two is rejected.

Research Question Four What is the effect of the Banking Time intervention on student-teacher relationship quality from the students' perspectives?

This question was answered qualitatively through four child interviews. Two subjects were in the experimental (Banking Time) group and two were in the control (Reading) group. The four students had been randomly selected. The following hypothesis was answered:

Hypothesis Two: Student-teacher relationship quality will improve following implementation of the Banking Time intervention.

The experimental group interview subjects were two first grade students, one male and one female. Their teacher was female. The female student indicated in the interview that her relationship with her teacher improved from the pre-intervention period to the post-intervention period. During the pre-intervention interview she indicated that her teacher "sometimes" gets mad. In the post-intervention interview she indicated that her teacher does not get mad. She also said in the pre-intervention interview that her teacher "sometimes" punishes her class a lot. In the post-intervention interview, she indicated that her teacher "does not punish" her class a lot. The male student interviewed

did not indicate any changes in his perspective on his relationship with his teacher between the pre-intervention and post-intervention interview.

The control group interview subjects consisted of one kindergarten student and one first grade student. Both students were male and both of their teachers were female.

The kindergarten student indicated that his relationship with his teacher improved from the pre-intervention interview to the post-intervention interview. The kindergarten student was shown two teacher dolls in the pre-intervention interview and it was explained to him that one of the teachers "punishes her class a lot" and the other teacher "does not punish her class a lot." He described his teacher as "A little like this one and a little like that one." In the post-intervention interview, he stated that his teacher "does not punish" his class a lot.

The first grade student indicated in the interview that his relationship with his teacher improved from the pre-intervention period to the post-intervention period. During the pre-intervention interview he indicated that his teacher "sometimes" gets mad. In the post-intervention interview he indicated that her teacher does not get mad. He also said in the pre-intervention interview that her teacher "sometimes" punishes his class a lot. In the post-intervention interview, he indicated that his teacher "does not punish" his class a lot.

Overall, the results of the student interviews were inconclusive. The two students in the experimental group (Banking Time) indicated that their relationships with their teacher either improved or remained the same from the pre-intervention period to the post-intervention period. The two students in the control group (reading) both had different views on their relationship with their teacher. One kindergarten student

indicated that his relationship with his teacher improved from the pre-intervention period to the post-intervention period. However, one first grade student indicated that his relationship with his teacher declined from the pre-intervention period to the post-intervention period. Thus, it does not appear that the Banking Time intervention has an impact on the student-teacher relationship from the students' perspective and hypothesis number two is rejected in this case.

Summary

After examining the data for both the experimental (Banking Time) and control group (reading), it is now important to evaluate the effectiveness of the Banking Time intervention overall. It was hypothesized that student-teacher relationships would improve and student problem behavior would decrease following the Banking Time intervention period. Results showed that teachers had mostly positive opinions of the Banking Time intervention. Teachers felt that Banking Time was helpful in terms of strengthening relationships with students and reducing student problem behaviors. Teachers also felt that the time commitment of Banking Time was feasible and that their implementation of the intervention went well. Results also showed a significant decrease in problem behaviors in the experimental group and the control group using the Teacher Report Form (TRF). However, there was no significant improvement in the student-teacher relationship quality, as measured by the Student Teacher Relationship Scale (STRS). Lastly, it does not appear that Banking Time has an impact on the student-teacher relationship based on the students' perspectives.

Hypotheses one was partially supported, so it can be concluded that there is some evidence to suggest that Banking Time is an effective intervention for decreasing student problem behavior. This will be further discussed in Chapter Five.

CHAPTER 5

FINDINGS, LIMITATIONS AND IMPLICATIONS

Introduction

This final chapter begins with a summary of the study, followed by a review of the findings and limitations. Implications and areas for future research will also be discussed.

Summary of the Study

This study explored the role of the Banking Time intervention on student-teacher relationships and problem behaviors in early childhood. This study utilized several measurement instruments. The Student Teacher Relationship Scale (STRS; Pianta & Hamre, 2001) was used to measure the student-teacher relationships. Problem behaviors were measured by the Teacher Report Form (TRF; Achenbach, 1991) and a student observation tally form. Two randomly-selected children from the experimental group and two children from the control group were interviewed pre- and post-intervention using an interview form that is based on work by Dr. Robert Pianta. In order to assess the students' perception of their classroom climate, a modified version of the *Classroom Life Measure* (Johnson & Johnson, 1983) was administered to every child in the participating classrooms. Lastly, using a self-created likert-type survey, teachers were surveyed pre- and mid-intervention. The purpose of the survey was to determine teachers' opinions of the Banking Time intervention and it also provided information on the fidelity of the intervention implementation by the teachers.

The research questions that were answered in this study were:

1. What are the teachers' opinions of the Banking Time intervention?

2. What is the effect of the Banking Time intervention on student problem behavior?

3. What is the effect of the Banking Time intervention on student-teacher relationship quality as measured by the Student Teacher Relationship Scale?

4. What is the effect of the Banking Time intervention on student-teacher relationship quality from the students' perspectives?

Research has found that the emotional bond between students and teachers is a crucial factor in students' behavioral adjustment (e.g. Barkley, 2003; Bellanti, Bierman & the Conduct Problems Research Group (CPPRG), 2000; Birch & Ladd, 1997 & 1998; Driscoll & Pianta, 2010; Hamre & Pianta, 2001; Howes, 2000; Howes, Hamilton & Matheson, 1994; Pianta & Hamre, 2009; Pianta, Steinberg & Rollins, 1995; Rabiner, Malone & CPPRG, 2004). The Banking Time intervention was created by Dr. Robert Pianta and designed to enhance the relationships between children and teachers, particularly for students having difficulty in the classroom.

Findings

Through the current research, there was some evidence that Banking Time was an effective intervention for improving problem behaviors. However, there was little evidence that Banking Time was an effective intervention for improving the student-teacher relationship.

The first research question sought to identify the teachers' understanding of the Banking Time intervention. At the pre- and mid-intervention points, the teachers all demonstrated adequate knowledge and understanding of the intervention. In addition, participating teachers had mostly positive opinions of the Banking Time intervention.

The teachers felt that Banking Time was helpful in terms of strengthening relationships and reducing problem behaviors; the time commitment of Banking Time was feasible; and the implementation of Banking Time went well. In the comment section, all of the comments were positive, with the exception of one. One teacher questioned if the Banking Time intervention was adequate enough to reduce misbehavior in the classroom. Overall though, the Banking Time intervention was well received among the participating teachers.

The second research question examined the effect of the Banking Time intervention on student problem behavior. The between subjects results found that there was no significant difference between the experimental and control groups measurement of behavior using the TRF ($p=.352$). Within subjects, students in both the experimental and control groups had a decrease in problem behavior, with the students in the Banking Time group decreasing at a faster rate. The scores were significant ($p=.009$), with the partial eta squared coefficient accounting for 7.5% of the variance, suggesting some relationship between the Banking Time intervention and a decrease in problem behaviors. A previous study in this area has reported effect sizes from .06 to .13. Thus, the current effect size is in the range of what has previously been reported (Driscoll & Pianta, 2010).

Behavior was also observed using the Behavior Observation Form, developed for this study by the author. The students who participated in the Banking Time intervention and the control group both showed improvements in their behavior, with the Banking Time group improving at a faster rate. However, within subjects, these improvements were not statistically significant ($p=.051$). The results between subjects revealed that there was no significant difference in student behavior between the experimental and

control groups as measured by the Behavior Observation Form ($p=.912$). In addition, there was no significant interaction between time and group ($p=.548$).

Thus, there is some evidence that student behavior improved significantly following the Banking Time intervention, as measured by the Teacher Report Form. However, more objective third party ratings, revealed no such trend. It is interesting to note that results were found with the teacher reported measure, but not with the third party ratings. This may be due to the fact that the intervention had a positive effect on the teachers and they in turn viewed a positive impact on their students.

The third research question examined the effect of the Banking Time intervention on student-teacher relationship quality as measured by the Student Teacher Relationship Scale. The between subjects results found a statistically significant difference ($p=.043$) between the experimental group (Banking Time) and the control group (reading). However, the partial eta squared coefficient only accounted for 4.6% of the difference. Thus, a relationship exists although smaller than what has been reported in previous studies (Driscoll & Pianta, 2010).

The within subjects results also found a statistically significant difference ($p=.009$) between the pre-test scores and the post-test scores with the partial eta squared coefficient accounting for 7.4% of the difference.

There was also a significant within subjects interaction between student-teacher relationships, time (pre- and post-) and group (experimental and control) ($p=.006$) with the partial eta squared coefficient accounting for 8.3% of the variance.

It is important to note that the pre-test scores for the experimental group (50.73) were higher than those of the control group (47.27). While the experimental group did

not improve its scores, the control group did (up to 49.58). However, the control group never reached the level of the experimental group. Even though the groups were randomly selected, this may suggest an initial difference between the experimental and control groups.

The differences between the pre-intervention STRS scores and the post-intervention STRS scores within the experimental (Banking Time) group were not significant ($p=.911$). The differences between the pre-intervention STRS score and the post-intervention STRS scores within the control (reading) group were significant ($p=.000$).

Thus, it did not appear that the student-teacher relationship quality improved significantly following the implementation of the Banking Time intervention. However, the student-teacher relationship quality did improve significantly for the control (reading) group.

The fourth research question examined the effect of the Banking Time intervention on student-teacher relationship quality from the students' perspectives. Four students were interviewed, two from the control group and two from the experimental group. In the experimental group, a female student indicated in the interview that her relationship with her teacher improved from the pre-intervention period to the post-intervention period. However, a male student interviewed did not indicate any changes in his perspective on his relationship with his teacher between the pre-intervention and post-intervention interview.

In the control group, a kindergarten student indicated that his relationship with his teacher improved from the pre-intervention interview to the post-intervention interview.

The first grade student indicated in the interview that his relationship with his teacher improved from the pre-intervention period to the post-intervention period.

The qualitative data collected for this study showed that all of the included teachers expressed positive opinions about the Banking Time intervention. However, the results of the student interviews were inconclusive and, as a result, can neither support nor reject the hypothesis that student-teacher relationship quality would improve following implementation of the Banking Time intervention.

In summary, this study found some evidence that Banking Time is an effective intervention. First, the intervention was viewed positively by teachers. When behavior was measured using the Teacher Report Form, there was a significant difference within subjects, with the students in the Banking Time group improving their behavior at a faster rate. However, there were also some non-significant findings to this study. The results between subjects found that there was no significant difference between the experimental and control groups measurement of behavior using the Teacher Report Form. When behavior was measured using the Behavior Observation Form, there was no significant behavioral difference between and within groups; nor between time and group. When the student-teacher relationship was measured with the Student Teacher Relationship Scale, there was an interesting finding. The pre-test scores for the experimental group were higher than those of the control group. Over time, the control group never reached the level of the experimental group. Data analysis found a significant difference between the experimental and control group, with a low partial eta square, suggesting a weak relationship. The within subjects results found a statistically significant difference between the pre-test scores and the post-test scores. There was also a significant within

subjects interaction between student-teacher relationships, time (pre- and post-) and group (experimental and control). The differences between the pre-intervention STRS scores and the post-intervention STRS scores within the experimental (Banking Time) group were not significant, however, the differences between the pre-intervention STRS score and the post-intervention STRS scores within the control (reading) group were significant. Lastly, the results of the student interviews were inconclusive.

<u>Limitations</u>

This study showed some evidence that the Banking Time intervention is an effective intervention for improving student behavior. The relative absence of robust findings for the improvement of the student-teacher relationship may be due to certain limitations. Limitations of the study can be grouped into two categories. First, limitations unique to this study may have interfered with the effectiveness of the Banking Time intervention. Second, there is also the possibility that there were no effects of the Banking Time intervention and that various aspects of the intervention may have limited its impact on student-teacher relationship quality.

Although efforts were made to implement Banking Time with fidelity, many factors may have affected the implementation of the present study and may have interfered with the effectiveness of the intervention.

The limited duration of the study may have been one drawback. The students participated in 15-minute Banking Time sessions three times a week for four weeks. The four-week period was chosen so that it would be feasible for teachers who had multiple children in their classrooms who needed to participate in the intervention. This is also the reason that there were two cohorts. Most teachers participated in two four-week sessions,

with half of their children part of cohort one and the other half part of cohort two. This short time frame, however, may not have been intense enough to cause significant changes in the student-teacher relationship.

The quality of the intervention implementation may be another limitation to the current study. Even though all teachers participated in and passed the initial Banking Time training, and completed a survey mid-intervention, there were no observations of or an objective measure of the actual Banking Time sessions by the researcher. The researcher did not want to appear intrusive and felt that relationships between students and teachers would be strengthened if they were allowed to have "alone" time together. However, this may also be a drawback, as the researcher did not get to witness "first-hand" the implementation of the intervention. Behind closed doors, teachers may have had difficulty adhering to the intervention criteria.

The sampling procedure may also be a limitation to the study. Teachers were asked to categorize their class according to adjustment concerns. This categorization decided which children would be further screened by the Teacher Report Form (TRF) for inclusion in this study. The categories were not operationally defined, however, which may have led to some children being excluded from the study.

While there are limitations that are specific to this current study, it is also important to note that there may be limitations with the Banking Time intervention itself. There is an inconsistency between the classroom context and the context of the Banking Time intervention. Banking Time requires teachers for brief periods of time to provide their students with individual attention, unconditional support and one-on-one interest, while completely refraining from directing the students' behavior (Pianta & Hamre,

2001). This type of interaction is in direct contrast to how the rest of the school day functions for students and teachers. In the school context, teachers must teach their students, guide behavior, set particular expectations and provide conditional feedback. Banking Time, therefore, changes the nature of the student-teacher interactions from those seen in typical student-teacher interactions. This altered relationship may be feasible in the Banking Time sessions, but it may be difficult to replicate in the classroom.

There is also a possibility that the Banking Time intervention also may not be powerful enough to counteract the outside influences that impact high-risk students. Various factors have predicted risk for student disruptive behavior, including biological factors, aspects of family ecology, family distress, poor parenting practices, and insecure child-caregiver attachment during the first years of life (Greenberg, Speltz & DeKlyen, 1993). There are also numerous protective factors that can reduce the risk of disruptive behaviors. These include having a warm and supportive relationship with parents or older adults, participating in extracurricular activities, encouragement from teachers toward their future, having friends who behave conventionally, and associating with peers to disapprove of violence (Johnston, 2013).

Schools can adjust their practices to mediate the effect of the risk factors and enhance the effect of protective factors in order to have a positive impact on student behavior. The Banking Time intervention was designed as a strategy to enhance the protective factors. However, given the limited amount of time that a child is in school, it may not be enough to counteract the negative influences impacting them from outside (Johnston, 2013).

Implications

Overall, the study revealed that the teachers who used Banking Time in the study liked it and many still use it today. They felt that it strengthened the student-teacher relationship, reduced problem behaviors and that it was feasible for use by a classroom teacher.

The results of the study supported Banking Time as an intervention to improve student behavior; however, the student-teacher relationship was not significantly impacted by the intervention. The lack of significant findings with the relationship enhancing focus of the Banking Time intervention may have been because the results were mediated by the effects of the control (reading) group. The control (reading) group may have acted as an intervention in and of itself. The act of reading with a student and the closeness involved in that act, may have served as a relationship enhancing intervention, thereby limiting the results that could be found with the experimental group.

Even though the results of this study do not support the Banking Time intervention as a means to strengthen the student teacher relationship, we need to consider that there is a large amount of literature that supports the benefits of student-teacher relationships (Pianta, 1994). Teachers, administrators, adjustment counselors, behavior specialists, guidance counselors and school psychologists need to be aware of the association between positive student-teacher relationships and positive student outcomes. These leaders can develop plans to increase teachers' relationship-enhancing interactions with their students. The large research base provides theoretical support for classroom practices that increase the opportunity for students and teachers to enhance their relationships with each other, such as looping and multiage classrooms.

"Looping" is the concept of a teacher moving with his/her students to the next grade level, rather than sending them to another teacher at the end of the school year (Grant, Johnson, Richardson, & Fredenburg, 1996). Some loops may be two consecutive years with the same students, or it may be as long as three or more years. The available literature on looping is full of benefits, including providing children with additional time to build relationships with teachers, which children's learning depends on (Checkley, 1995; Haslinger, Kelly, & O'Lare, 1996; Lincoln, 1997; Shepro, 1995).

Multiage education involves teaching students in a cross-grade group as a whole class and emphasizing individual progress through a developmentally appropriate curriculum (Lloyd, 1999). In this model, teachers are usually required to teach the same class for approximately two to three years. They become more familiar with the students and are able to build stronger relationships with them (Miller, 1994).

This information regarding strengthening student-teacher relationships through looping and multiage classrooms can be shared with administrators and others who are in positions to make school policy decisions.

Future Research

Some design and implementation issues created limitations to the current study that likely interfered with the potential effectiveness of the Banking Time intervention. A starting point would be to significantly increase the number of the intervention sessions and the duration of the intervention itself.

It may also be worth looking into the natural means by which teachers develop positive relationships with their students over the course of the day. Rather than having

teachers engage with students in an artificial Banking Time session, perhaps there are ways to change the manner in which they carry out existing day-to-day interactions.

One approach to consider would be the Reggio Emilia approach. In the Reggio Emilia approach, teachers follow children's interests and do not provide focused instruction in academic skills. There is a strong belief that children learn though interaction with others, including parents, staff and peers in a friendly learning environment. In Reggio Emilia, the foundations of education are based on relationships. Fundamental to the Reggio approach is the relationship between the child, teacher and the knowledge to be learned (Runswick-Cole & Cole, 2009).

Future research could also examine teachers that naturally have closer student-teacher relationships in order to identify specific behaviors that lead to these positive relationships. One such characteristic may be teacher sensitivity. This has been associated with more on-task behavior and more socially appropriate behavior in young children (Pianta & Hamre, 2001). It has also been associated with more effective behavior management (Pianta, 1999). There may be other factors involved also, such as student-teacher ratio. It is important to explore other factors that may increase student-teacher relationships and reduce problem behaviors.

It is also important to examine who the children are that are involved in the study. Familial factors should be considered, including the type of attachment style that the child has with their primary caregivers at home. Neurological conditions of the child; as well as environmental conditions, both at home and school, should be considered.

Conclusion

This study provided some support for the effectiveness of the Banking Time intervention at improving student behavior. There was little evidence that Banking Time is an effective intervention for strengthening the student teacher relationship. However, the student-teacher relationship quality literature as a whole supports the importance of this relationship for positive outcomes. Teachers likely represent one of the most stable caregivers to most children and efforts should be made to maximize the potential power of this relationship.

APPENDICES

INFORMED CONSENT

Dear Parents:

My name is Tara Balunis and I am a first grade teacher at Lake Street School, as well as a doctoral student at the University of Massachusetts/Amherst in the Children, Families and Schools concentration. For my doctoral research, I am studying the effect of the *Banking Time* intervention on student-teacher relationships and problem behaviors in early childhood.

Your child has been selected to participate in the *Banking Time* intervention with their classroom teacher. In *Banking Time*, the classroom teacher will engage in 15 minutes of one-on-one weekly sessions with your child, conveying messages of sensitivity, predictability, encouragement, and support for exploration. The intervention is called *Banking Time* because teachers serve as a valuable resource to children and a teacher can invest in this relationship with a child. The classroom teacher and your child will later draw upon this relationship capital to help cope with and solve common classroom challenges (e.g., work on a frustrating task, deal with peer conflicts).

As a participant you would need to agree to allow your child to participate in *Banking Time* with their classroom teacher for 15 minutes three times per week for four weeks.

The information shared during these *Banking Time* sessions will be kept confidential. I will use pseudonyms for the school as well as all participants to protect confidentiality.

Your participation is strictly voluntary and you are free to discontinue or refuse participation at any time without penalty or prejudice. You also have the right to review any of the materials used in this study and a summary of the results will be made available upon request. You may also request detailed methodological information. Your decision will not affect how you or your family are treated by the school or affect any programs or benefits to which you are otherwise entitled. I do hope you will participate- it is important that we learn how well this intervention works and how to make it useful for your child and other children in this district in the future.

You have been furnished with two copies of this informed consent, both which should be signed if you are willing to participate. One copy should be retained for your records and the other for my records. Your signature below indicates that you:
    a.   Have read and understand the information provided
    b. Willingly agree to participate
    c. May withdraw your consent at any time.

Please return this informed consent to your child's teacher in the enclosed envelope <u>within two weeks' time</u>. If you have more than one child participating in this, you will receive one form for each child.

If you have any questions about this research or your participation in it, you can reach me at:

Tara Balunis
Lake Street School
17 Lake Street
Spencer, MA 01562
work: 508-885-8517
E-mail: tstrand@educ.umass.edu
E-mail: Balunist@sebrsd.org

You may also contact my advisor:
Dr. J. Kevin Nugent
Children's Hospital Boston
The Brazelton Institute
1295 Boylston Street
Suite 320
Boston, MA 02215
(857) 218-4354
Email: Kevin.Nugent@childrens.harvard.edu

I have read the above. I understand the study and agree to participate.

_____   _____
                    Signature   Date

STUDENT OBSERVATION FORM

Student I.D._____   Date_____

Time_____

Place a tally mark each time a behavior is exhibited during the observation.

Behavior	Tally Marks
Hums or makes other odd noises in class	
Argues/doesn't get along with others/fights	
Defiant/talks back to staff or teacher	
Brags/Boasts	
Can't sit still/restless/fidgets/inattentive	
Cruelty/bullying/or meanness to others	
Difficulty following directions/disobedient	
Disturbs other pupils	
Cries	

Student Observation
Definition of Terms

Odd Noises: Any incidence of humming, whistling, tongue flicking, hooting, howling, growling, animal sounds, bodily function noises or superhero noises

Argues/Doesn't get along with others/fights: Any incidence of disagreeing with another peer or teacher; putting self into a discordant situation with another peer or teacher; taking part in a violent struggle involving physical blows or verbal quarreling

Defiant/Talks back to staff or teacher: Any incidence of boldly resisting authority figures; verbally challenging authority figures; to make a belligerent response to a staff member or teacher

Brags/Boasts: Any incidence of saying something in a boastful manner; talking with excessive pride about one's achievements, possessions or abilities

Can't sit still/Restless/Fidgets/Inattentive: Any incidence of wiggling; being unable to relax; constant activity or motion; making small repeated movements of the hands or feet; not paying attention to the teacher

Cruelty/Bullying/or Meanness to others: Any incidence of behavior that causes pain or hurt feelings in others; intimidating others; being spiteful or malicious

Difficulty following directions/Disobedient: Any incidence of not following verbal directions; refusing to obey rules; refusing to obey a staff member or teacher; being insubordinate or unruly

Disturbs other pupils: Any incidence of interfering with others so that they cannot complete their work

Cries: Any incidence of tears being shed as a result of frustration or anger. *This does not include tears shed as a result of pain.*

APPENDIX C

**GAINING THE CHILD'S PERSPECTIVE ON RELATIONSHIPS WITH
TEACHERS: A QUESTIONNAIRE**

Student I.D._____   Date_____

Circle: Pre-intervention   Post-intervention

Administrators should state the initial command, e.g., "This teacher
(point to one) makes kids feel good. This one (point to the other one)
makes them feel bad. Which one is like your teacher?" Then pause for
the child's reaction.

Introduction:

"I'd like to get some of your ideas about your teachers and things you do
with them."

1. Who are your teachers?

2. Who is the teacher you spend the most time with?

Introduction of the Puppets:

"Here are two puppets. You can hold them. (Give them to the student). We
are going to pretend they are teachers. I'm going to ask you some questions
about them."

3. This teacher (point to one) makes kids feel good. This one (point to
    the other one) makes them feel bad. Which one is like your teacher?

    Circle Response: Feel good teacher   Feel bad teacher

4. This teacher (point to one) is fun. This teacher (point to the other one) is not fun. Which teacher is like your teacher?

Circle Response:

Fun teacher   Not fun teacher

5. This teacher (point to one) helps kids feel better when they are upset. This teacher (point to the other one) does not help kids feel better when they are upset. Which teacher is like your teacher?

Circle Response:

Feel better teacher   Not feel better teacher

6. This teacher (point to one) makes kids feel upset. This teacher (point to the other one) does not make kids feel upset. Which teacher is like your teacher?

Circle Response:

Feel upset teacher   Not feel upset teacher

7. This teacher (point to one) gets mad a lot. This teacher (point to the other one) does not get mad a lot. Which teacher is like your teacher?

Circle Response:

Not mad teacher   Mad teacher

8. This teacher (point to one) punishes her class a lot. This teacher (point to the other one) does not punish her class a lot. Which teacher is like your teacher?

   Circle Response:

   Does not punish   Punish

9. This teacher (point to one) pays attention to her class. This teacher (point to the other one) ignores her class. Which teacher is like your teacher?

   Circle Response:

   Pays attention teacher   Ignores

10. This teacher (points to one) likes helping kids. This teacher (point to the other one) does not like helping kids. Which teacher is like your teacher?

    Circle Response:

    Helper teacher   Not helper teacher

Based on the interview designed by Robert Pianta and Bridget Hamre, as reported in their manual <u>Banking Time: Investing in Relationships between Children and Teachers.</u> (University of Virginia)

CLASSROOM LIFE MEASURE

Adapted from Johnson & Johnson (1983**)**

Student I.D._____   Date_____

Please circle "Yes", "No" or "Sometimes" to indicate how you feel about the statement. "Yes" indicates that you agree. "No" indicates that you disagree. "Sometimes" indicates that you sometimes agree and sometimes disagree with the statement.

Questionnaire

1. My teacher cares about how much I learn.   Yes   Sometimes   No

2. My teacher likes to help me learn.   Yes   Sometimes   No

3. My teacher wants to be my friend.   Yes   Sometimes   No

4. My teacher likes me.   Yes   Sometimes   No

5. My teacher cares about my feelings.   Yes   Sometimes   No

6. My teacher cares about me.   Yes   Sometimes   No

7. Other students want me to come to school.   Yes   Sometimes   No

8. Other students want to be my friend.   Yes   Sometimes   No

9. Other students like me.   Yes   Sometimes   No

10. Other students care about me.   Yes   Sometimes   No

11. I often get discouraged at school.   Yes   Sometimes   No

12. I often feel upset at school.   Yes   Sometimes   No

TEACHER BANKING TIME SURVEY

Teacher I.D._____   Date_____

Circle: pre-intervention   mid-intervention

The purpose of this brief survey is to determine your opinion of the Banking Time intervention. Honest and forthright answers are the most useful. The data will be used for informational purposes only. This is not a test.

Please complete all of the following questions. DO NOT write your name or other identifying information on this survey. This survey will take approximately five minutes to complete. Information provided on this survey will not be associated with you or your school. Thank you for your time.

In your own words, please describe the Banking Time intervention.

_____

_____

_____

_____

_____

Please think about your experiences with the Banking Time intervention. For each statement your task is to indicate the extent to which you agree or disagree. There are five possible responses: Strongly Disagree (SD), Disagree (D), Agree (A) and Strongly Agree (SA). Show your response to each statement by circling one of the five responses to the right. There are no correct responses to the statements-the <u>best</u> responses are those that truly reflect your opinions or feelings.

<u>Statements</u>   <u>Responses</u>

1. Banking Time sessions
have been helpful in
strengthening my relationship
with the intervention students.   SD   D   A   SA

2. Banking Time sessions
have been helpful in reducing
problem behaviors with the
intervention students.   SD   D   A   SA

3. Banking Time has had a
negative impact on student
behavior.   SD   D   A   SA

4. I "click" with the
Banking Time students.   SD   D   A   SA

5. Building relationships
with students is an important
part of teaching.   SD   D   A   SA

6. The Banking Time intervention
helps to strengthen my relationship
with students.   SD   D   A   SA

7. The Banking Time
intervention has no impact on

problem behaviors exhibited by
students.   SD   D   A   SA

8. Banking Time
has had no positive effect on the
students involved in the intervention.   SD   D   A   SA

9. Banking Time will/does help
students develop relationships
with their teachers.   SD   D   A   SA

10. I am **un**comfortable conducting
a Banking Time session with a child.   SD   D   A   SA

11. The time that was allocated
for Banking Time was adequate.   SD   D   A   SA

12. Banking Time was too time
consuming for me.   SD   D   A   SA

13. Other interventions are more
effective at reducing problem
behaviors in the classroom.   SD   D   A   SA

14. I felt that I received adequate
training necessary to conduct Banking
Time with students.   SD   D   A   SA

15. I encountered problems implementing
 the Banking Time intervention.   SD   D   A   SA

16. I am closer to the students who
conducted Banking Time with me.   SD   D   A   SA

17. I have a conflictual relationship
with the students who conducted
Banking Time with me.   SD   D   A   SA

Please use the space below to clarify any answers or to add any comments.

Comments:

_____

_____

_____

_____

_____

_____

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS SURVEY!

BANKING TIME TEACHER TRAINING CURRICULUM

Goals

The purpose of the Banking Time training is to learn how to conduct Banking Time
        intervention sessions with students.

Objectives

At the conclusion of the training on the Banking Time intervention, teachers will:
- Role play a Banking Time session that does not include commands, questions or criticisms.
- Role play a Banking Time session without giving attention to other students or other extraneous activities.
- Observe the "child" in a role-play situation for a few minutes before joining in.
- Narrate the "child's" play in a role-play situation through reflection or imitation at least five times in the session.
- Convey non-verbal interest to the "child" in a role-play situation through smiles, nods or gentle touches at least five times in the session.

Schedule

Session One: Monday, January 6, 2014

Session Two: Thursday, January 9, 2014

Session Three: Monday, January 13, 2014

Session Four: Thursday, January 16, 2014

Session One

Goal of Session One:

The purpose of the session one training is to introduce the Banking Time intervention to
        teachers.

Objectives of Session One:

At the conclusion of the session one Banking Time training, teachers will:

- Obtain a copy of the manual "Banking Time Basics for Teachers."
- Understand the major components of Banking Time.
- View a video tape of a teacher/student Banking Time session.

Outline of Session One:

_____Investigator gives teachers a copy of the manual "Banking Time Basics for Teachers"
_____Investigator orally reviews major components of Banking Time through Power Point presentation
    _____Why we are doing this and how it relates to RTI and PBIS
    _____How sessions will be scheduled
    _____How to introduce Banking Time to students
    _____Observation Time
    _____Narrating
    _____Labeling

_____View video tape
    _____Pause video and ask for teachers' thoughts or concerns
_____Investigator asks teachers if they have any questions or comments
_____Investigator encourages teachers to read the manual "Banking Time Basics for Teachers"
_____Set a date, time and location for session two

Session Two

Goal of Session Two:

The purpose of the session two training is to clarify any questions about Banking Time and to practice using it in a role play situation.

Objectives of Session Two:

At the conclusion of the session two Banking Time training, teachers will:

- Practice Banking Time through role-play.
- Receive feedback about their role-playing.
- Ask any questions that they have about Banking Time.

Outline of Session Two:

_____Investigator asks teachers if they had a chance to read through the manual "Banking Time Basics for Teachers" and if they have any questions or comments
_____Practice Banking Time through role-play: Investigator is "teacher"; Teacher is "student"
    _____provide feedback as necessary

_____Investigator asks teachers if they have any questions or comments
_____Set a date, time and location for session three

Session Three

Goal of Session Three:

The purpose of the session three training is to clarify any questions about Banking Time
and to practice using it in a role play situation.

Objectives of Session Three:

At the conclusion of the session three Banking Time training, teachers will:

- Practice Banking Time through role-play.
- Receive feedback about their role-playing.
- Ask any questions that they have about Banking Time.

Outline of Session Three:

_____Investigator asks teachers if they have any questions or comments about Banking
Time
_____Practice Banking Time through role-play: Teacher is "teacher"; Investigator is
"student"
_____Provide feedback as necessary
_____Investigator completes Banking Time Criterion Checklist
_____If teacher meets criteria; the teacher may begin implementing Banking Time OR
_____If teacher does not meet criteria
_____Investigator provides feedback as to why criteria were not met
_____Schedule date, time and location for session four

Session Four (if necessary)

Goal of Session Four:

The purpose of the session four training is to clarify any questions about Banking Time
and to practice using it in a role-play situation.
Objectives of Session Four:

At the conclusion of the session four Banking Time training, teachers will:

- Practice Banking Time through role-play.
- Receive feedback about their role-playing.
- Ask any questions that they have about Banking Time.

Outline of Session Four:

_____Investigator asks teachers if they have any questions or comments about Banking
    Time
_____Practice Banking Time through role-play: Teacher is "teacher"; Investigator is
    "student"
    _____Provide feedback as necessary
    _____Investigator completes Banking Time Criterion Checklist
_____If teacher meets criteria; the teacher may begin implementing Banking Time OR
_____If teacher does not meet criteria; teacher is excluded from the study

BANKING TIME TRAINING CRITERION CHECKLIST

Teacher I.D._____   Date_____

Session Number_____

Teachers must receive checkmarks for all criteria in order to conduct
Banking Time sessions with students.

During the student-teacher role-play, the teacher ***never:***

_____Gives commands

_____Questions

_____Criticizes

_____Gives obvious attention to other students or extraneous activities

During the 10-minute role-play, the teacher:

_____spends a few moments watching the child before joining in

_____narrates the child's play through reflection or imitation (at least 5
times)

_____Convey non-verbal interest (smile, nod, gentle touch) (at least 5 times)

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