

ASSOCIATIONS BETWEEN TEACHER-CHILD RELATIONSHIPS, CHILD
CHARACTERISTICS, AND CHILDREN'S WRITING QUALITY IN
KINDERGARTEN AND FIRST GRADE

Kelley Mayer

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Approved by:
Kathleen Cranley Gallagher, Ph.D.
Lynne Vernon-Feagans, Ph.D.
Jill Fitzgerald, Ph.D.
Harriet Boone, Ph.D.
Margaret Burchinal, Ph.D.
Kirsten Kainz, Ph.D.

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ABSTRACT

KELLEY MAYER: Associations between teacher-child relationships, child characteristics, and children's writing quality in kindergarten and first grade

(Under the direction of Kathleen Cranley Gallagher, Ph.D.)

When children have positive relationships with their teachers during early education, they perform better on measures of language development (Burchinal et al., 2000a; Peisner-Feinberg et al., 2001) and overall academic competence (Burchinal et al., 2002; Hamre & Pianta, 2001, 2005). A positive teacher-child relationship may also be important for children learning to write, given the complex and personal nature of writing. Yet, scholars have not examined associations between teacher-child relationship quality and children's early success in writing. The current study examined associations between quality of the teacher-child relationship (defined as teachers' perceptions of closeness and conflict and children's feelings about teachers), child characteristics (including gender and receptive language ability) and children's writing quality in kindergarten and first grade. Results indicated teacher-child conflict was significantly associated with children's writing quality, after accounting for grade level, initial reading status, and type of instruction. Children's receptive language was positively associated with writing quality in kindergarten and first grade. Teacher-child closeness, children's feelings about teachers, and child gender were not significantly associated with children's writing quality. Findings of the study have important implications for research and practice.

Attention to the importance of teacher-child relationship quality for children's successful learning and development should be considered in future research studies.

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CHAPTER ONE

Rationale

The early years of school are an important time in children's early literacy development. Early experiences with reading and writing in classrooms shape children's understanding of both the purpose and power of literacy. For years researchers have sought to better understand how children successfully acquire literacy skills. While much attention has been paid to children's early reading development, less attention has been paid to children's early writing development (Clay, 2001). Writing is a complex and demanding task for young children (Lienemann et al., 2006). It involves a great deal of cognitive effort, attentional control, and self-regulation (Graham & Harris, 2003) as children must use and integrate a variety of skills and processes, while also attempting to make their writing meaningful for the intended audience. Given this complexity, children need support to create coherent, well-written texts. The teacher is one source of support to young children when learning to write, yet little research exists on how teachers can best support young children learning to write.

This study investigated associations between teacher-child relationship quality, child characteristics, and children's writing quality in kindergarten and first grade. The rationale for the study is laid out in this first chapter followed by the theoretical framework and review of relevant literature in the second chapter. Chapter 3 provides a description of the study procedures, participants, and measures. Results are presented in

the fourth chapter and the study conclusions, limitations, and implications for research and practice are discussed in the fifth chapter.

Statement of the Problem

The academic demands of the kindergarten and first grade literacy curriculum can be challenging, particularly for children with few literacy experiences prior to entering school (Juel, 1988; Pianta et al., 1999; Teale & Sulzby, 1986). Children may feel insecure when confronted with literacy challenges (Koomen & Hoeksma, 2003). Previous developmental research explains that stressors activate a child's regulatory system (Davies & Cummings, 1994; Davies & Forman, 2002). If unable to regulate emotions and cope appropriately with the challenge, the child's ability to concentrate and learn from the classroom environment is affected (Cummings & Davies, 1996; Koomen & Hoeksma, 2003; Little & Kobak, 2003). For example, when feeling insecure in the context of a task the child may withdraw, and not ask for help. Subsequently, the child may fail to produce a response or produce one unrepresentative of their true understanding of the task.

Learning to write is one of the most challenging tasks of childhood, particularly for children with little experience with writing. Writing requires integrating a variety of skills (Graham & Harris, 2003). Children must learn to spell and construct sentences, use grammar appropriately, and express ideas coherently (Juel, 1988). Part of being a thoughtful writer includes considering audience and pertinent aspects of genre. Children must also learn to use the writing process, including being able to plan and revise their writing. Writing requires motivation and self-regulation skills (Lienemann et al., 2006). Children have to be able to hold their idea in memory, while trying to figure out how to

put the idea on paper, which requires a great deal of attentional control. Most children in the primary grades are just beginning to learn and master each of these skills individually, so having to integrate them becomes difficult (Edwards, 2003; Juel, 1988; Saddler et al., 2004). In many ways, writing is a problem-solving activity, where the writer tries to juggle a variety of demands on their attention (Hayes & Flower, 1980). As in other problem-solving contexts, children may benefit from others' support when encountering difficulty with writing.

When children are feeling insecure or stressed prior to school entry, they rely on the presence of a supportive parent or other caregiver to help them cope. Strategies children use to cope with stress may include approaching an adult for help or visually checking-in with them (Bowlby, 1988; Davies & Cummings, 1994). Research conducted from an attachment theory perspective refers to this as the "secure base" phenomenon. As a secure base a caregiver is there to encourage and assist the child when needed, but intervenes only when it is clearly necessary (Bowlby, 1988). When children begin school, they face new challenges, such as learning to write. In the absence of a caregiver, the child may rely on the support of the classroom teacher. In a previous study, preschool children who used teachers as a secure base explored the learning environment, engaged in play with peers, resolved conflicts, and completed academic tasks independently more than peers who did not use the teacher as a secure base. Furthermore, children who relied on the teacher as a secure base made greater social and academic progress across the school year (Coplan & Prakash, 2003).

Additional evidence of the teacher-child relationship's associations with children's social and emotional development has been well documented. Supportive

teacher-child relationships were associated with children's successful adjustment in the transition to school (Birch & Ladd, 1997; Birch & Ladd, 1998; Burchinal et al., 2000a; Burchinal et al., 2002; Hamre & Pianta, 2001, 2005; Ladd et al., 1999; Peisner-Feinberg et al., 2001). Children in high quality teacher-child relationships tended to exhibit better social skills and peer relationships (Birch & Ladd, 1997; Birch & Ladd, 1998; Ladd et al., 1999) and better work habits (Baker, 2006; Hamre & Pianta, 2001).

Previous research has shown associations between teacher-child relationship quality and children's outcomes differ when accounting for child characteristics, including gender (Baker, 2006; Hamre & Pianta, 2001), language, and behavior (Birch & Ladd, 1997; Howes, 2000; Howes et al., 2000; O'Connor & McCartney, 2006). Girls with supportive teacher-child relationships evidenced better academic outcomes than boys with supportive teacher-child relationships (Baker, 2006). Teacher-child closeness was strongly related to children's receptive language; children in close teacher-child relationships tended to have higher receptive language ability (Burchinal et al., 2002).

Research has begun to investigate associations between teacher-child relationship quality and children's academic development in early schooling. Children with high quality teacher-child relationships performed better on standardized language and literacy assessments (Burchinal et al., 2000a; Burchinal et al., 2002; Peisner-Feinberg et al., 2001). At-risk children given little instructional and emotional support from teachers performed significantly lower on standardized reading measures than peers who were not at-risk (Hamre & Pianta, 2005). However, when given support from teachers, at-risk children performed similarly to low-risk children in reading (Hamre & Pianta).

Specific associations between teacher-child relationships and children's success in reading have also been documented. Children in close teacher-child relationships had better reading grades and better work habits than children in conflictual teacher-child relationships. Yet, conflict in the relationship was more salient in predicting children's reading grades and work habits (Baker, 2006). It seems for young children learning to read, a high-quality teacher-child relationship is beneficial, but a low-quality relationship is especially harmful.

While previous studies have addressed associations between teacher-child relationship quality and children's reading, research has yet to address associations between teacher-child relationship quality and children's writing, yet this may be particularly important given the complexity of learning to write. Previous research on writing has identified supportive classroom environments and instructional strategies for writing. In fact, a majority of the research on writing in classrooms has generally focused on environmental supports for writing. Children in classrooms with abundant writing materials and environmental print made greater progress in using standard writing conventions (Clark & Kragler, 2005) than children in classrooms with few environmental supports. Taylor, Blum, and Logsdon (1986) compared children's literacy achievement in classrooms with high amounts of environmental print with classrooms with little to no environmental print. Children in classrooms with more accessible, better quality environmental print made greater progress than their peers on tests of written expression (Taylor et al., 1986).

Research has sought to identify interventions with the goal of improving children's writing. Most interventions in the early grades are designed to help improve

children's spelling or handwriting skills (Berninger et al., 1998; Craig, 2003; Jones & Christensen, 1999). More recent investigations have identified interventions for helping to improve children's ideation, planning, and written expression (Lienemann et al., 2006; Saddler et al., 2004). Common to these interventions is the instructional grouping context, in which children are generally taught in a small group or individual setting. These grouping contexts allow teachers to give support and scaffolding to children as needed (Graham et al., 2003). While research in this area has confirmed the importance of particular interventions for effective writing instruction, little research has sought to identify exactly what happens within these teacher-child interactions that might be important for children learning to write.

Several studies have looked at the presence of supportive parents for children's writing which inform the present study's investigation of the influence of supportive teacher-child relationships on children's writing. Research by Gutman and Sulzby (2000) has shown the importance of responding sensitively to children's instructional needs in writing. Adults who were found to be more controlling not only limited a child's ability to create texts, but also limit the child's ability to fluently and coherently express ideas (Gutman & Sulzby, 2000). Parents supported children's gradual progression from emergent to conventional writing by letting the child lead interactions (Aram & Levin, 2002; Burns & Casbergue, 1992; DeBaryshe et al., 1996). These children were better able to express their ideas. Parents who talked extensively with children about their writing, tended to have children who produced longer and more detailed writing (Schickedanz, 1999).

While some acknowledge that the teacher is the most influential non-familial adult in a child's life (Kesner, 2000) and may have greater influence on children's experiences in school than do parents (Wentzel, 2002), we have only just begun to understand how the teacher-child relationship is associated with children's learning. The findings on the importance of teacher-child relationship quality for children's reading outcomes, raise specific questions on how teacher-child relationships might be associated with children's writing. Furthermore, assuming teacher-child relationship quality is important for children's writing, the review of previous research on teacher-child relationships also raises questions on whether specific child characteristics might be important in further understanding these associations.

The purpose of the current study was to investigate associations between teacher-child relationship quality (including teacher-perceived closeness and conflict and children's feeling about teachers), child characteristics (receptive language and gender), and children's writing quality. Three research questions were addressed:

- 1) To what extent is teacher-child relationship quality (conflict, closeness, and children's feelings about teachers) associated with children's writing quality in kindergarten and first grade?
- 2) To what extent does children's receptive language account for differences in the associations between teacher-child relationship quality (conflict, closeness, and children's feelings about teachers) and children's writing quality in kindergarten and first grade?
- 3) To what extent does child gender account for differences in the associations between teacher-child relationship quality (conflict, closeness, and children's

feelings about teachers) and children's writing quality in kindergarten and first grade?

To account for classroom-level variance, four control variables were added into the models: grade level, initial reading status, interactive teaching, and didactic teaching. Children's writing quality was expected to vary considerably between kindergarten and first grade due to the rapid progress children make in the first years of school, so grade level was included as a control variable. The study also included children's initial reading status as a control variable because children who are identified as struggling readers also tend to struggle in writing (Juel, 1988). Struggling students would likely have difficulty performing as well on the writing measure as their non-struggling peers.

Although the goal of the present study was to better understand associations between teacher-child relationship quality and children's writing quality, it would be important to account for aspects of the teacher's literacy instruction. The present study included two instructional variables, the number of times the teacher was observed teaching interactively and the number of times the teacher was observed teaching didactically during the literacy block.

Definition of Constructs

For the present study, teacher-child relationship quality included teacher-perceived *conflict*, teacher-perceived *closeness*, and children's *feelings about teachers*. In a *close* (or high-quality) teacher-child relationship the teacher valued her relationship with the child and felt in tune with the child's feelings. The child sought comfort from the teacher when upset and was eager to share exciting news with the teacher. In a *conflictual* (or low-quality) relationship the teacher felt anxious or frustrated when interacting with the

child. The child in a *conflictual* (or low-quality) teacher-child relationship did not feel cared for or liked.

Writing quality for the present study included children's use of standard writing conventions, ability to clearly express ideas, and attention to genre. A high-quality writing sample was evidenced by attempts to appropriately use standard writing conventions (spelling, punctuation, and capitalization) in an attempt to express ideas clearly and with attention to detail. A low-quality writing sample was evidenced by few or no attempts to use standard writing conventions in which ideas made little to no sense to the reader and details were absent.

Children's *receptive language* ability for this study referred to children's receptive vocabulary knowledge. *Receptive language* was defined as the child's ability to understand the language used by others.

Gender for the present study was identified by the child's parents and was defined as male or female.

Interactive teaching was defined as instruction in which both the teacher and students(s) were actively participating. Examples included teachers asking questions, having conversations with students, reading aloud *along with* children, and asking students to act out a story.

Didactic teaching was defined as instruction in which the teacher was the only active participant. The child (or a group of children) was expected only to listen while the teacher talked about a topic, delivered directions or instruction on a particular skill, or read a story aloud without involving the children, for example.

A child's *initial reading status* was defined as either struggling or non-struggling in

reading. Children were given this distinction by their teachers who were asked to make these judgments based on literacy assessment data, in combination with their anecdotal observations of children's performance in reading at the beginning of the school year.

Grade level for the present study was reported by the child's teacher and was defined as kindergarten or first grade.

CHAPTER TWO

Review of the Literature

The current study was informed by two main theories, sociocultural theory and attachment theory. Sociocultural theory was used as a framework for understanding the importance of social relationships for children when learning. Attachment theory, specifically the emotional security hypothesis, was used as a framework for understanding the role of teachers in helping children to feel a sense of security when engaged in learning something new or challenging.

Sociocultural Theory

Through the lens of sociocultural theory the importance of children's interactions and relationships with other people in the learning environment can be understood. According to sociocultural theory, a child actively constructs knowledge with the help of more experienced (or competent) others during social interaction (Vygotsky, 1978). The idea of the "more competent other" comes from Vygotsky's notion that children learn how to perform a given task by listening and observing a more skilled adult or peer. When learning something new, a child needs information mediated. Language serves as a mediator for children's learning, in that the adult helps the child understand the steps involved in completing a task and gives assistance as needed to help the child complete the task, adjusting the demands of the task to match the needs of the student.

According to sociocultural theory, children learn best when instruction is provided within their zone of proximal development. The zone of proximal development

refers to a continuum of behaviors reflecting the distance between a child's independent level of functioning and the functioning achieved when they are provided with assistance (Bodrova & Leong, 2006; Vygotsky, 1978). When the teacher uses scaffolding, children can be challenged to complete an activity that lies just above their level of independent functioning (Bruner, 1966). Teachers provide support to children through questioning, discussion and observation of students' behavior when engaged in the task. After several interactions between the teacher and child, the child may require less and less support, eventually being able to carry out a task independently. For example, when children first begin writing often they know little about the act of composing. Teachers can help children move through the writing process by providing prompts and asking questions to help children plan and revise their pieces. The teacher can ask fewer questions, as the child begins to internalize the steps in the composing process and can compose more independently.

When interacting with adults while writing, children begin to understand how one makes decisions when writing. The responsibility of the teacher is to make these decisions explicit for children through modeling. When modeling, the teacher discusses with the child the thinking process used in completing a task. The language used by the teacher mediates what the child learns about writing and becomes the child's internal dialogue or private speech used when writing independently (Bodrova & Leong, 2006). Private speech is self-directed and not meant to be heard or interpreted by others (Bodrova & Leong, 2006). Children use private speech to think through and help themselves remember the steps involved in completing a task. Therefore, the instructional

feedback and language used in teacher-child interactions is very important in formulating a child's thought process during writing.

The current study addresses how teacher-child relationship quality is associated with children's ability to create well-written texts. While sociocultural theory informs the instructional support given to children when writing and how the teacher's language supports children when writing, attachment theory is used as a framework for understanding the role of emotional security in learning to write.

Attachment Theory

While attachment theory has informed a great deal of research on parent-child relationships, it also informs children's relationships with other adults. Researchers have debated whether or not teachers serve as attachment figures (Van IJzendoorn et al., 1992), however, children exhibit behaviors with teachers that are similar to behaviors exhibited in their relationships with parents (Birch & Ladd, 1997; Elicker & Fortner-Wood, 1995; Hamilton & Howes, 1992; Howes & Matheson, 1992; Pianta et al., 1997). Research has often described attachment in terms of the formation of attachment networks (Van IJzendoorn et al., 1992). These networks are comprised of several adults who serve various roles in the child's life. Each of these adults can serve as the secure base for the child in the absence of the primary attachment figure, which is usually the mother (Van IJzendoorn et al., 1992). The child's ability to successfully integrate attachment experiences with different caregivers determines success in development. Under this notion, a child's emotional development may be better classified on the basis of the quality of the attachment network rather than through attachment with the mother alone (Van IJzendoorn et al., 1992). Emotional support given by adults may be

particularly important when children are engaged in the complex task of writing to help them feel comfortable and confident in using their skills.

Emotional Security

The emotional security hypothesis extends attachment theory because it can be applied to relationships a child has with people outside the family (Koomen et al., 2004). Children's attachment behaviors change as caregivers and contexts change over time (Schneider-Rosen, 1990). So while children's relationships, with peers and teachers may not be identical to their early relationships with caregivers, attachment interactions and behaviors are an important part of these relationships (Cicchetti et al., 1990).

When stressed, a child's regulatory system is activated and strategies are employed to maintain the child's sense of security (Davies & Cummings, 1994). These strategies may include approaching an adult for help or visually checking-in. In the absence of the child's primary caregiver (most often the mother), provision of emotional security is most likely facilitated in the presence of a supportive and familiar caregiver, such as the child's teacher (Koomen, van Leeuwen, & van der Leij, 2004).

Feeling secure in one's environment is important for a child's direct interactions and relationship with the teacher, but is also important for the child's general functioning in the classroom (Davies et al., 2006). The emotional security felt by a child helps to organize experiences and actions in the child's environment, as well as to make appraisals of self and others (Davies et al., 2006). Also, maintaining a sense of security is important for the child's concentration in a task (Koomen et al., 2004).

A child who feels emotionally secure with his teacher may experience more comfort when facing the complex task of writing. For example, the child may be more

likely to ask questions about writing or bounce ideas off the teacher. The goal of the teacher-child relationship then is one of providing emotional security to children while learning to write. Therefore, it would be important to consider children's feelings of security with teachers and how it impacts their writing ability. The current study measured children's perceptions of security felt in relationships with teachers and its' associations with children's writing quality.

Review of the Literature

Based on the study questions, this literature review addresses research on: 1) writing quality, 2) writing instruction, 3) associations between teacher-child relationship quality and child outcomes, and 4) associations between teacher-child relationship quality, child characteristics, and child outcomes.

Research on Writing

This section includes a review of research on young children's writing, including how writing develops, supportive parent-child interactions for children's writing, and effective writing instruction in schools. Attention is given to aspects of the classroom environment and specific instructional strategies beneficial for children's success in writing.

How Writing Develops

Emergent writing is defined as the period of development during which children learn to write, generally between the ages of three and five, during the preschool years and into the kindergarten and first grade years (Clay, 2001). During this development children begin to understand that writing is a form of communication and that their marks

on paper convey a message. The development occurs in stages (or phases) and begins when children experiment with drawing and making marks on paper.

Teale and Sulzby (1986) are responsible for some of the earliest work on emergent literacy. They define emergent literacy as consisting of the skills, knowledge, and attitudes that are presumed to be developmental precursors to conventional forms of reading and writing (Teale & Sulzby, 1986). Children's writing development is classified in six broadly defined categories. These categories are not meant to be interpreted as occurring in a specific order, but rather give us a means by which we can talk about the characteristics of developmental stages involved in learning to write (Sulzby, 1985). The six stages involved are drawing, scribbling, letter-like forms, letter strings, invented spelling, and conventional writing.

In early stages, children can be observed scribbling from left to right and exhibiting behaviors associated with real writing, like moving the pencil in a fluid manner. Scribbles may resemble real writing, but have no representational meaning (Sulzby, 1985). Children may even attempt to write their name (or other words) by moving the pencil on the paper, using their hands and arms to make long, circular motions (Saracho, 1990).

Once children become aware of print, they combine letter writing and drawing to convey their ideas (Barnhart & Sulzby, 1986; Bus et al., 2001; Morrow & Sharkey, 1993). These behaviors are exhibited towards the end of preschool and into the kindergarten year. At the time, children do not distinguish between drawing and writing, often using both to express meaning (Morrow et al., 1999). Children may use or make shapes that resemble real letters or may actually begin to insert real letters in their

writing. Children often use letters they are familiar with, such as the letters in their first name, combining them into random strings of letters (Sulzby, 1985). The child's ideas are represented with a single word or drawing, but the child may elaborate verbally on the content of their work when asked about it.

Children soon begin to connect letters with the sounds they make in order to spell words and label their drawings. This often occurs during the kindergarten and first grade years. Children begin by using a single letter to spell an entire word, such as "C" for cat. Eventually they hear more than one sound in a word and label the middle and/or ending sounds in words (Read, 1986). For example, a child would label their drawing of a cat with "CT." This phenomenon of matching letters to their sounds to create words is often referred to as "creative" or "invented" spelling (Read, 1986). Children may also use an occasional sight word in their writing (Ferreiro & Teberoskey, 1982; Mayer, 2006), having learned the appropriate spelling for words like "the" and "to." Children also begin experimenting with punctuation at this point. For example, children may place a period at the end of each line, instead of at the end of each sentence or they may switch back and forth between using capital and lowercase letters.

Children begin to use more conventions in their writing towards the end of kindergarten and into the first grade year. They hear and write the beginning, middle, and/or ending sounds to spell a given word. Fueled by an increase in their knowledge of sounds and sound combinations, children begin to more closely approximate conventional spellings (Read, 1986). At this point children spell a number of sight words correctly (Ferreiro & Teberoskey, 1982; Mayer, 2006), such as "look" and "here." Children have a better grasp on when to use conventions such as spacing, punctuation,

and capitalization. They express ideas in writing more coherently, their sentences are constructed appropriately, and the order of the ideas presented becomes more logical. During this period, children begin to represent their ideas with multiple words or sentences and sometimes use drawing in addition to (rather than in place of) writing.

Writing Instruction

Research has shown most children learn to write with the help of a supportive environment (Burns & Casbergue, 1992; Chapman, 1996; DeBaryshe et al., 1996; Gutman & Sulzby, 2000; Saracho, 1990; Strickland & Morrow, 1991; Whitehurst & Lonigan, 1998). These supports include physical supports for writing, such as writing centers and materials (Tangel & Blachman, 1992; Yaden & Tardibuono, 2004), and supportive adult behaviors (Burns & Casbergue, 1992; Chapman, 1996; Saracho, 1990). Specific instructional strategies teachers use to support children's writing include scaffolding (Bodrova & Leong, 1998; Bruner, 1966) and modeling (Burns & Casbergue, 1992; Chapman, 1996; McGee & Purcell-Gates, 1997). Much of the research on children's writing in the early elementary grades has been conducted in the context of the classroom, but several studies investigating parent-child interactions during writing have been helpful in better understanding the specific behaviors and language associated with successful writing development.

Writing instruction in the home. Young children's writing develops in interactions with supportive adults. Parents who were supportive in writing with their children were more likely to support children's gradual progression from emergent to conventional writing (Aram & Levin, 2002; Burns & Casbergue, 1992; DeBaryshe et al., 1996). Children with supportive parents were better able to express their ideas (Burns &

Casbergue, 1992; DeBaryshe et al., 1996). More verbally elaborative parents had children who produced longer and more detailed texts (Schickedanz, 1999). These parents talked to children throughout the writing, commented on spelling and mechanics, brainstormed ideas, and discussed content of the writing. Parents verbalized the decision-making process used in deciding what to include in their texts. Parents who were more repetitive in their conversations with children had children who produced texts more repetitive in nature (Schickedanz, 1999). These parents focused on one aspect of the writing, for example, only helping children with spelling or letter formation.

DeBaryshe, Beull, and Binder (1996) examined how parents supported their children when completing a letter writing activity. Parents based the support they provided on the child's needs, such as moving the child's paper when needed, repeating questions, and guiding children's thinking about what to include in the letter (DeBaryshe et al., 1996). They carefully listened to their child's responses and modified their actions accordingly. When children became frustrated, parents were successful at modifying the request, providing support to help the child feel in control and successful (DeBaryshe et al., 1996).

Aram and Levin (2002) had children and parents complete two separate writing tasks and studied the behavior and language characteristic of these interactions. Parents who provided more support, such as questioning, scaffolding and modeling, had children who made greater progress in writing during the school year (Aram & Levin, 2002). Parents who exerted more control, telling children what to do, had children who made less progress (Aram & Levin, 2002).

Neuman and Roskos (1993) examined the effect of adult mediation of writing activities. They designed an intervention for preschool children in which the use of writing materials at a play center was mediated at three different levels. Writing materials and print tags were placed in the housekeeping center to encourage children's use of writing in their play (Neuman & Roskos, 1993). In the highest level of mediation, parent volunteers were asked to interact directly with the children and model how the writing materials could be used. Children receiving this level of mediation made the greatest progress on writing outcomes and were also found to use writing in their play at higher levels, even after the intervention ended (Neuman & Roskos, 1993). Children in both of the other groups made only slight progress and only occasionally used writing in their play. It was determined that adult mediation of the writing environment was most beneficial in supporting children's writing (Neuman & Roskos, 1993).

In an experimental study by Gutman and Sulzby (2000), researchers worked with children to compose a letter using either a controlling or supportive style of interaction. In the controlling context, the adult demonstrated how to complete steps, corrected the child's performance, limited the child's choices, and verbally commanded the child (Gutman & Sulzby, 2000). In the supportive context, adults let children make choices about the writing, indicated understanding and agreement of the child's choices when writing, responded to the child's questions, and let the child write autonomously without disruption. Texts produced by children with the help of the supportive adult included more drawings, attempts at spelling, and more words in general than did samples produced by children in the controlling context. Adults who were more controlling not

only limited their child's ability to create texts, but also limited their children's ability to fluently and coherently express ideas.

Writing instruction in school. Resources and instructional strategies in early elementary classrooms are associated with children's writing development. Resources in classroom environments that support children's writing include access to plentiful high-quality writing materials and environmental print. Sufficient access to resources is associated with greater use of standard writing conventions and higher overall literacy achievement (Clark & Kragler, 2005)

Numerous instructional strategies are associated with children's writing development, including teacher scaffolding, modeling, and providing choice and variety in writing assignments. When teachers used scaffolding to help children create a piece of writing in kindergarten, children made significant, accelerated progress in writing over the course of the school year, including the use of appropriate spelling and directionality in written texts (Bodrova & Leong, 1998). Effective teachers modeled the writing process for students and monitored student progress throughout writing lessons, and delivered support, such as questioning, only when needed (Wharton-McDonald et al., 1998). Effective writing instruction included attention to both the development of writing skills and processes. Greater benefit was found for children when exposed to writing instruction that combined work on writing skills, as well as instruction in using the writing process (Berninger, 1999; Edwards, 2003). Kindergarten children who were taught to plan and revise their pieces through teacher modeling produced texts of greater length and clarity (Brooks et al., 1999).

In summary, classroom resources and instruction support children's writing development. However these studies failed to recognize the transactional nature of writing development. This study expanded notions of classroom support to include teacher-child relationship quality. Children with high-quality teacher-child relationships (high closeness and/or positive feelings about teachers) were expected to produce higher quality written products. Specifically, they were expected to attempt using more standard conventions, greater detail, and more coherently express ideas. Children in conflictual relationships with teachers were expected to write using fewer standard conventions and less coherent ideas, with little use of detail or description.

Research on Teacher-Child Relationships

Research on high quality teacher-child relationships has shown a variety of benefits for children's social, behavioral, cognitive, and academic development. The following review is focused on benefits to children's academic development as those are most pertinent in informing the present study. First, a review of research on teacher-child relationships and children's school outcomes is presented, followed by research on teacher-child relationships and children's literacy outcomes. Finally, studies investigating the influence of child characteristics on associations between teacher-child relationship quality and child outcomes are discussed.

Researchers have conceptualized teacher-child relationships to function in multiple ways and have used a variety of terms to discuss what the relationship provides for children. Constructs used in previous research include closeness, conflict, dependency, relatedness, felt security, comfort, and instructional and emotional support.

While these constructs may differ slightly from one to the next, they share a common focus on the teacher's ability to provide comfort and security to the child.

Teacher-Child Relationships and Children's School Outcomes

High quality teacher-child relationships may be associated with higher academic achievement via achievement related attitudes and behaviors. Children who reported higher levels of support from teachers were more engaged in their work (Furrer & Skinner, 2003; Klem & Connell, 2004). Children in close teacher-child relationships participated in classroom activities at higher rates (Ladd et al., 1999), exhibited better work habits (Baker, 2006; Hamre & Pianta, 2001) and liked school more (Birch & Ladd, 1997). Children in conflictual teacher-child relationships liked school less (Birch & Ladd) and experienced more frustration and less tolerance (Pianta et al., 1997). Children in dependent teacher-child relationships avoided school more (Birch & Ladd).

Child engagement mediated effects of the teacher-child relationship on children's academic outcomes. A study of over 600 intermediate grade students investigated associations between children's engagement, sense of relatedness, and student's report card grades. Grounded in attachment theory, relatedness was defined as a view of oneself as loveable and of the world as trustworthy. This sense of relatedness developed in the context of interactions with significant social partners, which can include parents, peers, and teachers (Furrer & Skinner, 2003). Children who reported higher relatedness to teachers were more engaged in school and had better grades. However, children who reported lower relatedness to teachers were less engaged in school and had poorer grades. Most notably, teacher relatedness was the strongest predictor of children's engagement and success in school, over and above parent and peer relatedness.

Teacher-Child Relationships and Children's Literacy Outcomes

Children in high quality teacher-child relationships perform better on standardized language and literacy assessments. At-risk children given little instructional and emotional support from teachers performed significantly lower on standardized reading measures than peers who were not at-risk (Hamre & Pianta, 2005). However, when given support from teachers, at-risk children performed similarly to low-risk children in reading (Hamre & Pianta). In another study, higher reports of teacher-child closeness were strongly related to higher receptive vocabulary among African American children (Burchinal et al., 2002). In the current study, associations between teacher-child closeness and children's writing quality were examined. It is hypothesized that children in close teacher-child relationships will receive higher scores on the writing quality measure.

Links between high-quality teacher-child relationships and children's reading grades have been established. Using a diverse sample of over 1,300 kindergarten through fifth graders, Baker (2006) investigated associations between teacher-child relationship quality and children's performance in reading. While closeness in the teacher-child relationship was moderately associated with children's reading grades and work habits, conflict was more robustly associated with children's reading grades and work habits (Baker, 2006). These associations were sustained over time, such that the teacher-child relationship's association with reading development was just as strong in fifth grade as it was in kindergarten (Baker, 2006).

While associations have been found between teacher-child relationship quality and children's reading outcomes, no studies have addressed specific associations between

teacher-child relationship quality and children's writing outcomes. This study addressed this gap in the research, uniquely incorporating both teachers' and children's perspectives of relationship quality. Teacher and child reports of relationship quality were expected to be positively associated with children's writing quality.

Child Characteristics, Teacher-Child Relationships, and Children's Development

While teacher-child relationship quality is associated with children's academic achievement, the strength of this association may not be the same for all children (Baker, 2006; Hamre & Pianta, 2001; Peisner-Feinberg et al., 2001; Rudasill et al., 2006).

Gender and language ability are two characteristics frequently associated with variation in children's development. This study examined whether the associations between teacher-child relationship quality and children's writing might differ among children of varying language ability and between boys and girls.

Language. Because writing and speaking are interconnected processes (Gee, 2001; Teale & Sulzby, 1986), children's ability to create written texts is associated with their oral language ability. Oral language development precedes written language development and may serve as a valuable foundation for written language development (Shanahan, 2006). Children rely on their knowledge of oral language to help them create texts, such as how to construct sentences or how to select appropriate words to convey ideas in writing, and their reliance on oral language makes writing development proceed faster and more efficiently (Shanahan, 2006). Children with higher verbal IQ scores in fourth and fifth grade produced better quality writing than children with lower verbal IQ scores (Berninger et al., 1994). Writing may also be supported by verbal memory, and

young children may lack sufficient working memory to create a fluent, coherent text (Shanahan, 2006).

Children in high-quality teacher-child relationships perform better than peers in low quality teacher-child relationships on standardized measures of receptive language ability. Peisner-Feinberg and colleagues (2001) examined associations between child care quality, children's receptive language, and developmental outcomes with a large sample of children. Teacher-child closeness was associated with children's receptive language ability after accounting for child and family characteristics. Children in higher-quality relationships continued to be more advanced in their receptive language ability over a period of five years (Peisner-Feinberg et al., 2001). Language complexity has also been associated with teacher-child relationship quality. Children with lower language complexity (MLU) generally had teacher-child relationships higher in conflict (Rudasill et al., 2006).

To date no studies have examined associations between children's relationships with teachers, children's language and writing ability in kindergarten and first grade. To address this gap in the literature this study examined the moderating effect of receptive language on associations between teacher-child relationship quality (in terms of closeness, conflict, and children's feelings about teachers) and children's writing. Language ability was expected to moderate the association between teacher-child relationships and writing quality. Specifically children with lower language ability were expected to benefit more from a close teacher-child relationship than children with high language ability in developing writing skills.

Gender. Studies have shown differential associations of the teacher-child relationship by gender. Girls typically have higher quality relationships than boys (Birch & Ladd, 1997; Furrer & Skinner, 2003; Howes et al., 2000; Hughes et al., 2001; Ladd et al., 1999; O'Connor & McCartney, 2006). Relatedness was more strongly associated with boys' engagement in school than girls (Furrer & Skinner, 2003). Relationships higher in conflict and dependency led to poorer outcomes for boys both academically and behaviorally (Hamre & Pianta, 2001). In another study, gender moderated the effect of teacher-child relationship quality on children's school outcomes (Baker, 2006), such that the association between relationship quality and school outcomes was stronger for girls than boys. Girls with close teacher-child relationships had better grades in social development and more positive work habits than boys with close teacher-child relationships (Baker, 2006).

Gender may moderate the association between teacher-child relationships and children's writing. Based on previous research on gender and teacher-child relationships girls with close teacher-child relationships were expected to perform better on the writing measure than boys regardless of the teacher-child relationship. Furthermore, teacher-child conflict was expected to be more strongly associated with boys' performance on the writing measure than with girls' performance.

Hypotheses

The present study examined associations between teacher-child relationship quality (in terms of closeness, conflict, and children's feelings about teachers), child characteristics (receptive language and gender), and children's writing quality in kindergarten and first grade when accounting for grade level, child's initial reading

status, and type of instruction. Based on the above review, the main hypotheses addressed in this study included:

- 1) Teacher-child relationship quality was expected to be associated with children's writing quality.
 - a) Conflict in the teacher-child relationship was expected to be associated with poorer performance on the writing quality measure.
 - b) Closeness in the teacher-child relationship was expected to be associated with better performance on the writing quality measure.
 - c) Children reporting more positive relationships with teachers were expected to perform better on the writing quality measure, whereas children reporting more negative relationships with teachers were expected to perform poorer on the writing measure.
- 2) Children's receptive language was expected to moderate associations between teacher-child relationship quality and children's writing quality.
 - a) Associations between close teacher-child relationship quality (and/or positive feelings about teachers) and children's writing were expected to be stronger for children with higher receptive language ability than for children with lower receptive language ability.
 - b) Associations between conflictual teacher-child relationship quality (and/or negative feelings about teachers) and children's writing were expected to be stronger for children with lower receptive language ability than for children with higher receptive language ability.

- 3) Children's gender was expected to moderate the association between teacher-child relationship quality and children's writing quality.
- a) Associations between close teacher-child relationship quality (and/or positive feelings about teachers) and children's writing were expected to be stronger for girls than for boys.
 - b) Associations between conflictual teacher-child relationship quality (and/or negative feelings about teachers) and children's writing were expected to be stronger for boys than for girls.

CHAPTER THREE

Method

Overview of Procedure

This study examined associations between teacher-child relationship quality (in terms of closeness, conflict and children's feelings about teachers), child characteristics, and children's writing quality in kindergarten and first grade. The analytic sample included a diverse group of 127 kindergarten and first grade students nested within 20 classrooms from three rural schools in a southeastern state. The data was collected in the spring of the 2006-2007 school year by the author, with the help of additional assessors. Teacher-child relationship quality measures and child assessments were collected in April and May of 2007. Writing samples were collected from each child participant by the author of the present study within a three-week period in May 2007. Writing samples were analyzed by the author and a trained graduate assistant in the summer and fall of 2007. Table 1 provides information on each of the study variables and their corresponding data source. This chapter begins with a detailed description of the context and study participants. This is followed by descriptions of each of the measures used in the study.

Context of the Study

The sample included kindergarten and first grade teachers and students participating as control subjects in a large, federally funded study. The Targeted Reading Intervention (TRI) project is designed to provide professional development and

consultation to teachers in rural schools to help them better meet the needs of struggling readers. Schools were randomly selected to participate as experimental or control sites in the study. Schools in both groups were matched within their districts on several factors including school poverty and percent of minority students enrolled. Teachers in experimental schools received the professional development and consultation, but teachers in control schools did not. A majority of the measures used in the present study were collected as part of the larger study's battery of teacher questionnaires and child assessments collected in both experimental and control schools.

Teachers and children from the three control schools participated in the present study. School A had a total enrollment of a little over 300 students and was located in a county with widespread rural poverty. The average class sizes for kindergarten and first grade at this school were 21 and 19, respectively. Approximately 60% of students received free and reduced lunch. Roughly 40% of economically disadvantaged intermediate-grade students attending School A received passing scores on state assessments. School B had a total enrollment of over 400 students and was located within the same rural district as School A. The average class sizes for kindergarten and first grade at this school were 22 and 20, respectively. Approximately 80% of students received free and reduced lunch at School B and around 55% of economically disadvantaged intermediate-grade students received passing scores on state assessments. School C was a Reading First school located in a different district in the same southeastern state. School C had a total enrollment of a little over 300 students with average class sizes for kindergarten and first grade of 16 and 17, respectively. Over 80% of students received free and reduced lunch and approximately 56% of economically

disadvantaged intermediate-grade students received passing scores on state assessments at this school.

Participants

The sample for the present study included a diverse group of children and teachers in three rural schools. This section includes background characteristics for the teachers and students in the study.

Teachers

The analytic sample for the current study included a total of 20 teachers (8 kindergarten and 12 first grade). Background characteristics of the teachers are provided in Table 2. The sample included 1 male and 19 female teachers. 30% of the teachers were Black and 65% were White. The average level of prior teaching experience was over ten years. Education levels of teachers varied, with 80% of teachers holding a bachelor's degree and 20% of teachers holding a master's degree or higher.

Children

The analytic sample for the study included a diverse group of 127 students (65 kindergartners and 62 first graders), nested within the 20 kindergarten and first grade classrooms. Teachers ranked all students in their class as struggling or non-struggling readers and the TRI research team then randomly selected 3-5 students from each of these two groups (struggling and non-struggling readers) to participate. Therefore, within each classroom, the sample included 3-5 struggling readers and 3-5 non-struggling readers. Table 3 provides background characteristics of the students, including information on child gender, ethnicity, and maternal education.

Measures

Predictor Variables

The five predictor variables used in the present study were drawn from two measures of teacher-child relationship quality, a receptive language assessment, and a family questionnaire. In the following sections, the four measures will be described in detail with attention to issues of internal consistency and validity.

Teacher-child relationship quality: Closeness and conflict. The Student Teacher Relationship Scale, Short Form (Pianta, 2001) is a teacher-report measure of the perceived relationship quality with a given child. Teachers completed this measure for each participating child in the spring of 2007. The measure included 15-items yielding an eight-point scale for closeness and a seven-point scale for conflict. The lowest total score possible on the measure was 15 and the highest possible score was 75. Sample items from the closeness scale included: “I share an affectionate, warm relationship with this child” and “It is easy to be in tune with what this child is feeling.” Sample items from the conflict scale included: “This child and I always seem to be struggling with each other” and “This child remains angry or is resistant after being disciplined.” The measure included a Likert scale response format with a response of 1 indicating the statement “definitely does not apply” and a response of 5 indicating the statement “definitely applies.” Internal consistency between the two scales was calculated at .51 for the present study. Construct validity of the measure was established during design of the STRS in a study by Pianta and Steinberg (1992), with STRS scores and observed behavior correlating from .40 to .67.

Teacher-child relationship quality: Feelings about teachers. The Feelings About School Scale (Valeski & Stipek, 2001) is a 16-item measure of children's feelings about their teachers, their general attitude toward school, and their perceptions of their own competence in both reading and math. The measure was administered by trained assessors in the spring of 2007. The measure yields four scales: children's perceived competence in math, perceived competence in literacy, children's feelings about their relationship with their teacher, and children's general attitudes towards school. For the present study, only the scale for children's feelings about teachers was used. Children responded to items using a five-point Likert-type scale, with bars of increasing sizes to represent how little or how much the statement read represented their feelings. The lowest possible score was 3 and the highest possible score was 15. Sample items include "My teacher likes me" and "My teacher cares about me." Internal consistency of the scales ranged from .46 to .61. To assess validity of the FAS measure, associations between FAS and STRS items were calculated. Total scores on the STRS and FAS measures were not significantly correlated in the present study as they have been in past studies. Correlations between items ranged from -.52 to .76.

Receptive language. The Peabody Picture Vocabulary Test (Dunn & Dunn, 1997) is a nationally normed standardized test of receptive vocabulary. An age based standard score for each child which was used in the present study's analyses. The lowest possible total score was 40 and the highest score was 160. Test-retest reliability ranged from .91 to .94 (Dunn & Dunn, 1997). Validity was achieved with the original sample by comparing PPVT results with other common measures of children's language

development. Correlations between these measures ranged from .69 to .91 (Dunn & Dunn, 1997).

Gender. Child gender was collected as part of a family questionnaire completed in the fall of 2006. Gender was hypothesized to moderate associations between teacher-child relationship quality and children's writing quality. From this questionnaire, one variable was used in analyses: Gender.

Control Variables

Four control variables were incorporated in models predicting children's writing quality: child's Grade Level, Initial Reading Status, Interactive Teaching, and Didactic Teaching. The four control variables were drawn from the TRI Screener and a classroom observation and are described in detail in the following sections.

Initial reading status and grade level. Teachers completed the TRI Child Screener (see Appendix A) to report each child's Grade Level and Initial Reading Status. Participating teachers were asked to indicate whether all students in their class were performing at, above, or below grade level in reading using school assessment data. School assessment data included state literacy assessments, kindergarten readiness assessments, and/or standardized literacy assessments used by the district, such as results from the Texas Primary Reading Inventory (TPRI). Teachers were also asked to make this distinction when referring to language and literacy expectations associated with adequate progress in reading. The expectations for kindergarten were listed at the top of the screener and included: writes first name, communicates needs appropriately, demonstrates early print awareness, exhibits beginning alphabet knowledge, retells simple stories, uses drawing/writing to communicate a message, enjoys listening to

stories, follows one and two-step directions, stays on task, and seeks help when needed. The expectations for first grade included: demonstrates effective listening and speaking skills, exhibits letter-sound knowledge, recognizes high-frequency words, uses decoding strategies, uses writing to communicate meaning, spells three and four letter words, demonstrates appropriate letter formation, follows directions, participates in class discussions, exhibits self-control, works independently, and seeks help when needed. Students who were reported to speak little to no English, who received special education services, and/or students who were expected to make rapid progress in reading as a result of the general classroom instruction were removed from the list. From the resulting list of students, the research team created two groups of students within each teacher's class, one group for children below grade level (struggling readers) and one for children at or above grade level (non-struggling readers). The research team then randomly selected 3-5 children in each of the two groups (struggling and non-struggling readers). This resulted in 6-10 total child participants within each classroom, 3-5 of which were struggling readers and 3-5 of which were non-struggling readers.

Interactive and didactic teaching. Interactive and Didactic Teaching were collected as part of a whole-class observation of each teacher's literacy instruction collected in the spring of 2007. The whole-class observation is an observation of teacher behaviors and teaching practices conducted during the teacher's regularly scheduled literacy instructional block. The total observation is conducted over 20 minutes and is divided into four 5-minute passes. Each 5-minute pass is further divided into 30-second blocks in which teacher behaviors and practices are recorded on a presence/absence basis. The lowest total number of times possible for each of the variables was 0 and the highest

was 40. The variable for the amount of times a teacher was observed to be teaching interactively and didactically during the literacy block was used in the present study.

Teachers were observed as interactive when children were actively engaged in the lesson. For example, the teacher may have had a discussion with the children, encouraged the children's physical or written participation in a lesson, or asked questions of the students about a book or topic under discussion. Teachers were recorded as didactic when the teacher was observed doing a majority of the talking, with no active participation on the part of the student in the lesson or activity. Didactic instruction is defined as "top down", where the teacher is telling and the students are expected only to be paying attention and listening. For example, the teacher may have read aloud from a book or teacher's manual or given a lecture on a specific topic without any input from or discussion with the students. Inter-rater reliability coefficients for the interactive and didactic teaching variables ranged from .96 to .98.

Dependent Variable

To assess Writing Quality children were asked to produce a descriptive writing sample in response to a picture prompt (see Appendix A). Picture prompts have been used to elicit descriptive writing in other studies of young children's writing development (Calkins, 1986; Coker, 2006; DeTemple et al., 1991; Feldgus & Cardonick, 1999; Hemphill et al., 1994; McGee & Morrow, 2005; McGee & Richgels, 2004; Snow et al., 1995; Spandel, 1996). These tasks are flexible and allow children to respond in a variety of ways allowing the researcher to capture a variety of writing skills and processes. The pictures used in this study were chosen for their appeal and familiarity and allowed children to rely on background knowledge to produce a response. The pictures were

piloted to assess their ability to elicit descriptive text from kindergarten and first grade children living in rural communities. Participants produced adequate descriptive text in response to both picture prompts.

Students completed writing samples twice within a three-week period in a small group setting (2-3 children at the most), with the author present. Students were given as much time as needed to write a description of the picture so “someone who had not seen the picture could understand the scene.” The same pictures were used for both kindergarten and first grade children and presentation of the pictures was counter-balanced. Students occasionally asked for help spelling words, but they were told to try their best to sound it out on their own.

Scoring of the samples. Writing samples were scored using a rubric created by the author (see Appendix B) based on current state standards for children’s writing in kindergarten and first grade and on rubrics previously used in research and classroom settings (Calkins, 1986; Coker, 2006; DeTemple et al., 1991; Feldgus & Cardonick, 1999; Hemphill et al., 1994; McGee & Morrow, 2005; McGee & Richgels, 2004; Snow et al., 1995; Spandel, 1996). The rubric consisted of six items measuring children’s writing quality. Each item was rated on a scale of 1 to 6. These six items were then separated into three sub-scales, with two items per sub-scale: use of standard writing conventions, expression of ideas, and aspects of the descriptive genre. Scoring of the samples was completed by the author with the help of a trained graduate assistant. Prior to scoring, the author and graduate assistant anchored the rubric with samples at each score point for all six items (see Appendix C).

Pilot testing of the rating system was conducted prior to the task's administration with the use of kindergarten and first grade writing samples to evaluate effectiveness of the rubric. Participants for the pilot study comprised children from the TRI study's experimental schools. During pilot work inter-rater reliability of scores on 44 samples ranged from .82 to .92 on each of the sub-scales, with an inter-rater reliability coefficient of .91 achieved when comparing the Total Writing Quality scores.

Conventions. Items in the conventions sub-scale captured children's spelling attempts and use of appropriate punctuation and capitalization. Samples were scored for spelling on a scale of 1 to 6, with a 1 given to samples in which children made no attempt to use real letters to represent words and a 6 given to children who spelled all words conventionally. Examples of spelling at each level are included within the writing rubric (see Appendix B) and can also be seen in the examples used to anchor the rubric (see Appendix C). Samples were also scored on a scale of 1 to 6 for punctuation and capitalization, with a 1 representing no attempts to use punctuation or capitalization and a 6 given to children who used both punctuation and capitalization appropriately throughout the entire text. This included using correct punctuation in other ways, such as the use of commas, quotation marks, or question marks.

Ideas. Scores in the ideas sub-scale captured children's ability to clearly express ideas in writing and to appropriately identify a writing topic. When first learning to write, children often lack the ability to use words to express their ideas (Temple, 1993). The rubric accounted for this by awarding points to children who clearly expressed ideas through drawing instead of through written text. Samples were scored for clarity of ideas on a scale of 1 to 6. A score of 1 was given if the child responded by drawing only, but

the ideas expressed in the child's drawing were not clear and a score of 6 if the ideas were extremely clear and well written. For topic, samples were given a score of 1 to 6, with a 1 given if the child did not identify the topic in his/her drawing(s) and a score of 6 if the topic identified in writing was very clear and well written.

Genre. Scores in the genre sub-scale captured children's attempts to use writing characteristic of text classified under the descriptive genre. Two key objectives associated with descriptive writing include a description of the setting and the use of descriptive words and/or phrases to describe a scene. Samples were scored on a scale of 1 to 6 with a 1 given to children who did not articulate any aspects of the setting in their drawing or writing and a 6 given to children who included multiple aspects of the setting that were articulated very well in writing. For use of descriptive phrases, samples were scored on a scale of 1 to 6, with a score of 1 given if no descriptive words or phrases were used and a score of 6 given when 5 or more descriptive words or phrases were used.

Total writing quality. Points were totaled for each of the three subscales and combined to create a writing quality score in response to each prompt. Internal consistency coefficients for the three scales ranged from .80 to .89. Coefficients are presented in Table 4. Inter-rater reliability was established by the author and graduate assistant through scoring and consensus of 25% of the samples. Inter-rater reliability coefficients for the six items ranged from .81 to .94. Inter-rater reliability for the children's total writing quality scores was achieved at .94. Children's scores on both samples were combined to create a Total Writing Quality score, which was used as the dependent variable in study analyses. The lowest possible total score was 12 and the highest was 72.

CHAPTER FOUR

Results

Analysis of the data was addressed in several steps. First, descriptive statistics and correlations for all variables were examined. Second, an unconditional multilevel model was run without predictors to confirm differences across classrooms (or teachers). Third, associations between teacher-child relationship quality, child characteristics, and children's writing quality in kindergarten and first grade were tested using a series of random-effects regression models. Resulting coefficients indicated how much of the children's Writing Quality scores could be predicted by each variable. As a final step, effect sizes were computed as Cohen's *d* values for each of the predictor and control variables.

Preliminary Results

Descriptive Statistics

Means, standard deviations, and range of scores for variables are reported in Table 5. Descriptive statistics for initial reading status, grade level, and gender can be found in Table 3. Teachers reported a wider range of Conflict than Closeness in relationships with children. Students' reports of their relationships with teachers were generally positive. In classroom observations, frequency of interactive teaching was about twice as common as didactic teaching. Children's total Writing Quality scores, a composite of each child's score across scales and samples, were highly variable. To account for variability across kindergarten and first grade samples, grade level was

controlled for in subsequent analyses. Examples of writing samples that received low, average, and high Writing Quality scores can be found in Appendix D. In the low quality writing sample, the child did not use standard conventions and ideas were not written coherently. In the average quality writing sample, the child used invented spelling to write their sentence, expressed ideas fairly coherently, and used some descriptive words. In the high quality writing sample, the child used conventional spellings, appropriate capitalization and punctuation, and the ideas were well presented. This sample also included a good amount of descriptive words and gives description of the setting.

Bivariate Correlations

Pearson correlations were calculated to analyze associations between teacher-child relationship quality (Closeness, Conflict, and Feelings About Teachers), Receptive Language, and Writing Quality variables. Spearman's rho coefficients were calculated to assess associations between the dichotomous variables (Grade Level, Gender, and Initial Reading Status), teacher-child relationship quality, Receptive Language, and Writing Quality variables. Coefficients are presented in Table 6.

Teacher-child Conflict and Closeness were positively associated: high scores on Conflict reflected LESS conflict in this dataset. Therefore, higher Closeness was associated with lower amounts of Conflict. Higher conflict in teacher-child relationships was associated with lower Receptive Language scores, more episodes of Interactive Teaching, and increased likelihood of being identified as a struggling reader. Higher teacher-child Closeness was associated with higher Receptive Language scores and kindergarten grade level status.

Receptive Language and Writing Quality were positively associated, such that higher language scores were associated with better Writing Quality scores. Higher Receptive Language scores were also associated with non-struggling initial reading status, and being a first grade student and a non-struggling reader was associated with higher Writing Quality scores. Frequency of Didactic Teaching was negatively associated with frequency of Interactive Teaching. Greater frequency of Interactive Teaching was associated with lower Writing Quality scores. Interactive Teaching was more common among kindergarten teachers, while Didactic Teaching was more common among 1st grade teachers.

Partial Correlations

To further investigate associations between all variables while accounting for differences in Grade Level and Initial Reading Status, partial correlations were computed, controlling for these two variables. In a partial correlation, the contribution of selected independent variables is taken out of all variables in the correlation matrix (Tabachnik & Fidell, 2001).

First, to confirm differences by grade level and initial reading status, ANOVA tests comparing group means were conducted. The ANOVA for differences between grades on the writing outcome resulted in an F value of 159.41 ($p < .001$). The ANOVA for differences between struggling and non-struggling readers on the writing measure resulted in an F value of 14.02 ($p < .001$). Therefore, in the partial correlations, the contribution of Grade Level and Initial Reading Status was taken out of the remaining predictor, control, and dependent variables. Partial correlation coefficients are presented in Table 7. After controlling for Grade Level and Initial Reading Status, all of the

original associations remained significant, with the exception of the association between Conflict and Receptive Language. In addition, two new associations emerged. Conflict and Writing Quality were negatively associated, such that higher conflict was associated with lower scores on the Writing Quality measure. Additionally, higher Didactic Teaching was associated with lower Writing Quality scores.

Multilevel Models

A series of random effects regression models were analyzed using SAS PROC MIXED. SAS codes are presented in Appendix E. Two-level models were specified, with one level for teachers and one for children. The random-effects regression model allows for the nested nature of the data, given multiple children are rated by a given teacher (Raudenbush & Bryk, 2002). An initial model was run to confirm differences by teacher. Subsequent models included teacher as a random intercept. Predictor variables were grand mean-centered for ease of interpretation of the intercepts (Raudenbush & Bryk).

Null model

Investigation of the means for total writing quality indicated differences in groups. Group means are presented in Table 8. A random effects regression model with teacher as random intercept was run without predictors to confirm differences between classrooms. The level two residual variance was calculated at 104.38, with a minimum of 57.67 and maximum of 243.67 and a standard error of 37.19 ($p < .01$). The level one residual variance was calculated to be 64.96 with a minimum of 50.25 and a maximum of 87.25 and a standard error of 9.10 ($p < .0001$). An ICC (intra-class correlation) was calculated at .62. This indicated 62% of the variance in Writing Quality scores was

estimated to be due to between class differences and 38% of the variance was due to differences among students within classrooms. The average Writing Quality score (the average group mean) across teachers was calculated at 37.71 ($p < .0001$) with a 95% confidence interval of 32.64 to 42.78. The average group mean was slightly different than the value for the grand mean (36.66) due to the differences in group size. This step of the analysis justified the use of multilevel modeling as an appropriate method of analysis and also justified using teacher as a random intercept in the models.

Models addressing Question One: To what extent is teacher-child relationship quality (conflict, closeness, and children's feelings about teachers) associated with children's writing quality in kindergarten and first grade?

Initially, each of the teacher-child relationship quality (Conflict, Closeness, and Feelings About Teachers) variables were analyzed using separate models. The next step added control variables to each of the models, including Grade Level, Initial Reading Status, Didactic Teaching, and Interactive Teaching. Children's (Total) Writing Quality was the dependent variable in all models. Coefficients for each model indicated how well children's Writing Quality scores were predicted by each measure of teacher-child relationship quality, accounting for Grade Level, Initial Reading Status, Interactive Teaching, and Didactic Teaching. This step of the analysis yielded one significant model explaining variance in children's Writing Quality, the "Conflict + Controls" model, which will be explained in greater detail in the following section.

In the first model, Conflict was entered individually as a predictor. With the addition of Conflict, the level one residual variance decreased from to 65 (in the null model) to 53. This indicated Conflict accounted for a significant amount of variance in

total Writing Quality scores. The average Writing Quality score for a child with an average amount of Conflict reported in the teacher-child relationship was 38.16. With every one unit increase in Conflict (which in this sample means a decrease in Conflict), the child's total Writing Quality score increased by .65 units.

The next step included adding control variables (Grade Level, Initial Reading Status, Interactive Teaching, and Didactic Teaching) into the Conflict model. The results of this model are presented in the first set of columns in Table 9 labeled "Conflict + Controls." Both Initial Reading Status and Grade Level accounted for a significant amount of variance in children's Writing Quality scores. Didactic teaching was a significant predictor, but Interactive teaching was not and was therefore dropped from subsequent Conflict models. With the addition of the control variables, Conflict remained a significant predictor of children's Writing Quality scores. The effect size for Conflict was calculated at .06, indicating a relatively small effect. With each one unit increase in Conflict (which is actually a decrease in perceived conflict), children's Writing Quality scores increased by .64 points. The average Writing Quality score for a kindergarten, struggling reader whose teacher was observed teaching didactically an average amount of times was 23.67. The score increased by 21 points with a change in Grade Level (from kindergarten to first grade) and by 6 points with a change in Initial Reading Status (from struggling to non-struggling reader). The effect sizes for Grade Level and Initial Reading Status were 3.09 and .81, respectively. This indicated strong effects for Grade Level and Initial Reading Status on children's Writing Quality. The Writing Quality score decreased by .60 points with a one unit increase in Didactic

Teaching. The effect size for Didactic Teaching was .08, which indicated Didactic Teaching had a small effect on children's Writing Quality.

In the second set of models, teacher-child Closeness was entered individually as a predictor. The results of this model, the "Closeness" model, are presented in Table 10. With the addition of Closeness, the level one residual variance decreased from 65 in the null model to 62 in the "Closeness" model. This result showed Closeness accounted for variance in total Writing Quality scores. The average Writing Quality score for a child with an average amount of Closeness reported in the teacher-child relationship was 37.80. With every one unit increase in Closeness, the child's total Writing Quality score increased by .40 units. In the next step, control variables (Grade Level, Initial Reading Status, Didactic Teaching, and Interactive Teaching) were added into the "Closeness" model. With the addition of the control variables to the model, Closeness was no longer a significant predictor of children's Writing Quality. Teacher-child Closeness did not explain variance in children's total Writing Quality. For this reason, the "Closeness + Controls" model was not included in further analyses addressing the second and third hypotheses, investigating the presence of Receptive Language and Gender as moderators.

In the third set of models, children's Feelings About Teachers was entered individually as a predictor of children's Writing Quality scores. Results are presented in Table 11. Feelings About Teachers was not a significant predictor of Writing Quality in this model. The results of this model indicated children's perceptions of teachers did not explain variance in children's total Writing Quality scores within this sample of kindergarten and first grade children. The Feelings About Teachers model was not

included in further analyses addressing the second and third hypotheses, investigating the presence of child language and gender as moderators.

Models addressing Question Two: To what extent does children's receptive language account for differences in the associations between teacher-child relationship quality (conflict, closeness, and children's feelings about teachers) and children's writing quality in kindergarten and first grade?

To address the second question, whether children's receptive language affected associations between teacher-child relationship quality and children's writing quality, Receptive Language and a Receptive Language times Conflict interaction were added to the "Conflict + Controls" model. This model was named the "Conflict + Controls + Language" model. Results of this model can be found in the second set of columns labeled "Conflict + Controls + Language" in Table 9.

Receptive Language had a significant main effect on Writing Quality and decreased the level 2 residual variance from 46 (in the "Conflict + Controls" model) to 42. The average Writing Quality score for a struggling reader in kindergarten with average receptive language ability and a teacher who taught didactically an average amount of times was 25.86. The effect of Receptive Language was calculated to be .19, indicating a child's Writing Quality score increased by .19 units for every one unit increase in the Receptive Language score. The effect of Conflict remained a significant predictor and was valued to be .42. The average Writing Quality score for a struggling reader in kindergarten with average Receptive Language ability increased by .42 units with every one unit increase in Conflict (which again means less Conflict). The effect size for Conflict was .06 and the effect size for Receptive Language was .03 in this

model, which indicated small effects for both. The Conflict by Receptive Language interaction was not significant. The hypothesis stating teacher-child relationship quality would be moderated by children's receptive language was not confirmed by this analysis. The Conflict by Receptive Language interaction was dropped as a predictor from subsequent conflict models.

Models addressing Question Three: To what extent does child gender account for differences in the associations between teacher-child relationship quality (conflict, closeness, and children's feelings about teachers) and children's writing quality in kindergarten and first grade?

To address the third question, whether gender affected associations between teacher-child relationship quality and children's writing quality, Gender and a Gender times Conflict interaction were added to the "Conflict + Controls + Language" model. The results of this model are presented in the third set of columns labeled "Conflict + Controls + Language + Gender" in Table 9. Gender did not have a significant main effect and the Conflict by Gender interaction was also not significant. The hypothesis stating teacher-child relationship quality would be moderated by child gender was not confirmed by this analysis.

Final Model

In conclusion, the analyses revealed the model that most appropriately represents the data was the "Conflict + Controls + Language" model. In this model, Grade Level and Initial Reading Status had large effects on children's Writing Quality, confirming the decision to include them in the model as control variables. After accounting for Grade Level, Initial Reading Status, Didactic Teaching and Receptive Language, Teacher-Child

Relationship Quality: Conflict remained a significant predictor of children's Writing Quality in kindergarten and first grade. These results have important implications for research and practice, which will be addressed in the next chapter.

CHAPTER FIVE

Discussion

Previous research confirms the significance of teacher-child relationship quality for children's developmental and learning outcomes (Baker, 2006; Burchinal et al., 2000a; Burchinal et al., 2000b; Mantzicopoulos, 2005; Peisner-Feinberg et al., 2001). However, this study broadens understandings of the importance of the teacher-child relationship specifically for children's writing. These findings have important implications for both research and teaching. In this final chapter, general findings from the study are interpreted and discussed in the first section. Next, future directions for research are identified. Then, limitations of the study are presented. Last, implications of the study for both research and practice are suggested.

Three research questions were addressed in the present study. In addressing the first research question, the study results indicated teacher-child relationship quality, specifically teacher-child conflict, was negatively associated with children's writing quality when accounting for grade level, initial reading status, and didactic teaching. Upon investigating the second research question on the impact of child language on associations between teacher-child relationship quality and children's writing quality, results indicated child language did not moderate associations. However, results did indicate child language had a significant independent effect on children's writing quality. The third research question addressed the presence of gender as a moderator of teacher-child relationship quality on children's writing quality. Results indicated gender did not

moderate nor was it associated with teacher-child relationship quality or children's writing quality.

The results, in general, do confirm the importance of social relationships for children's learning as outlined in the theoretical framework. Children who lacked the support of a positive teacher-child relationship likely felt less secure in relationships with teachers and thus weren't able to take full advantage of the learning opportunities available, which likely led to lower writing quality scores. Although the direction of the associations between teacher-child relationship quality and children's writing is unclear. Perhaps, high-quality teacher-child relationships lead to better writing performance, but it could also be that higher writing performance leads to higher quality relationships. This should be addressed in future research.

In the present study, teacher-child relationship quality was associated with children's initial reading status. Being identified as a struggling reader by the teacher in the fall was associated with higher conflict in teacher-child relationships in the spring. Perhaps, struggling readers become frustrated early on by the literacy demands of the elementary school classroom. This frustration may be exhibited as anger or withdrawal when interacting with teachers, thus making it difficult for teachers to connect with these children. On the other hand, children who struggle to connect with teachers may feel less motivated and engaged in the instructional opportunities provided by the teacher, leading to lower literacy learning. Perhaps, children's motivation and/or engagement serves as a mediator to associations between teacher-child relationship quality and children's learning. Future research should address the causal direction of associations between

relationship quality and children's learning difficulties, as well as the possibility of motivation and engagement as mediators of the associations.

Teacher-child conflict was associated with children's writing quality beyond the effects of grade level, initial reading status, and type of instruction. Children who experienced conflict in relationships with teachers were likely to have lower writing quality scores. Previous studies report similar associations, with higher teacher-child relationship conflict associated with poorer academic success, including success in reading (Baker, 2006; Mantzicopoulos, 2005). The current study is the first known to report associations between teacher-child conflict and children's writing quality. Perhaps, children who experience conflict in relationships with teachers feel less secure in their environments and do not take full advantage of learning opportunities provided. The stress of interacting with the teacher (or from being in school in general) may prohibit the child from concentrating on academic tasks, including writing. Alternatively, the child characteristics associated with conflict (e.g. behavior problems, attentional problems, etc.) could also be associated with poorer approaches to learning in school, and thus poorer achievement. Future studies should examine specific behaviors and language used in teacher-child interactions to better understand how conflict is expressed and perceived by both teacher and child. Measuring relationship quality from the teacher's perspective, the child's perspective, and from observation of their interactions, would provide multiple sources of information and would enable researchers to better capture all that is happening within these relationships.

This study also addressed differences in associations between teacher-child relationship quality and children's writing quality when accounting for children's

receptive language ability. Receptive language was associated with variance in children's writing quality. This finding supports previous research linking children's language and literacy development (Clay, 2001; Dickinson et al., 2003; Juel, 1988; Pellegrini et al., 1998; Snow, 1983; Teale & Sulzby, 1986). The more developed a child's oral language ability is, the more likely their success as readers and writers.

Receptive language did not moderate associations between teacher-child relationship quality and children's writing in the present study. A larger sample size may be required to detect interactions, if they exist. However, language may mediate the effects of teacher-child relationship quality on writing. Children in close teacher-child relationships may have higher receptive language which may lead to better performance on writing measures. Children who have teacher-child relationships high in conflict may have poorer language skills leading to poorer writing. Future studies might address the presence of language as a mediating variable in an attempt to better understand how child language is associated with teacher-child relationship quality.

Gender was not associated with children's writing quality when accounting for grade level, initial reading status, and type of instruction, nor was gender found to be a moderator of associations between teacher-child relationship quality and children's writing quality. Gender and conflict are generally highly correlated which may contribute to the inability to detect gender as a moderator. Previous studies have reported direct (Furrer & Skinner, 2003; Hamre & Pianta, 2001; Hughes et al., 2001; Kennedy, 1997; Ladd et al., 1999; Ryan et al., 1998), conditional (Baker, 2006; Kienbaum et al., 2001), and indirect (Gallagher et al., under review) effects of gender on teacher-child relationships, indicating the complex context of gender in the classroom. Though similar

findings (including correlations between gender and teacher-child relationships) for gender were not found in the present study, future studies should investigate the specific impact of child gender on teacher-child relationships and children's learning.

Previous research has identified additional child characteristics that influence teacher-child relationship quality, including child behavior. Previous studies have shown children with both externalizing and internalizing behavior problems in the classroom had difficulty forming high-quality teacher-child relationships (Birch & Ladd, 1998; Howes, 2000; Howes et al., 2000; O'Connor & McCartney, 2006). In a study by Baker (2006), child behavior moderated associations between teacher-child relationship quality and children's reading grades. Children with externalizing behavior problems and close teacher-child relationships had better reading grades than did similar children with conflictual teacher-child relationships. Similar results were found for children with internalizing behavior problems (Baker, 2006). Child behavior was not examined in the present study but serves as an important avenue for future research. Perhaps, children with externalizing behavior problems and close teacher-child relationships would perform better on writing measures than similar children with conflictual teacher-child relationships.

Teacher-child closeness was not associated with children's scores on the writing quality measure, but was associated with higher receptive language scores. Some studies have suggested teacher-child closeness may serve as a protective factor to children who struggle in school (Burchinal et al., 2002; Silver et al., 2005). Silver and colleagues (2005) examined the effect of teacher-child relationship quality on the developmental trajectory of children's behavior problems. For children with higher levels of

externalizing behaviors, teacher-child closeness decreased the expression of externalizing behaviors over time. Other studies have found closeness less associated with child outcomes than conflict (Baker, 2006; Gallagher, et al, under review). Closeness may be harder to capture on a teacher questionnaire. It may be a construct that must be observed in order to be understood. Future studies of teacher-child closeness should include observational measures of teacher-child interactions. These studies could better identify the language and behaviors exhibited in close teacher-child relationships, which might help to identify stronger and more specific connections between these behaviors and their effects on children's learning.

Previous studies have documented associations among children's reports of relationship quality with academic achievement (Mantzicopoulos, 2005). However in this study, children's feelings about teachers were not associated with their writing scores or with teacher's reports of relationship quality. This latter finding contrasts with previous studies reporting positive associations between these two measures of relationship quality (Valeski & Stipek, 2001). However, in this study almost all children reported positive feelings toward their teachers, despite the teachers more frequent reports of conflict. The two scales (FAS and STRS) may not have captured the same construct in this sample. For example, the items used from the Feelings About School (FAS) scale may measure how much students like their teacher rather than the quality of the relationship. Future research should more thoroughly examine ways to effectively measure teacher-child relationship quality from the child's perspective.

Results suggested large differences between classrooms (or children nested within teachers) in children's writing quality. Previous studies have confirmed the importance

of teacher characteristics in influencing child outcomes. For example, in one study teachers' working models of relationships was associated with the quality of their relationship closeness with their students (Kesner, 2000). In other studies, teachers' ability to manage their classroom and engage students in learning to read and write was associated with children's success in reading and writing (Morrow et al., 1999; Wharton-McDonald et al., 1998). Teachers who effectively manage the classroom likely provide a secure environment in which children are better able to build positive relationships with other children and with teachers (Baker, 2006). It may also be possible that classroom (versus teacher) characteristics contribute to differences in children's writing. For example, the way students are placed into classrooms may impact the grouping of children within those classrooms. There may also be characteristics associated with school-level factors that might have contributed to the detection of differences in classrooms. For example, the schools may have had different levels of administrative support for learning or the classrooms may have been different in terms of the materials provided. The present study investigated teacher and classroom characteristics via two instructional variables, interactive and didactic teaching. Future studies should include consideration of additional teacher (or classroom-level) effects. The present study's use of multilevel modeling to account for differences between teachers served as an important analytic method for investigation of classroom and teacher effects on children's learning. Future studies should investigate additional classroom- or teacher-level variables using multilevel models to their assess associations with children's writing quality.

Limitations

Writing Quality

The writing rubric served as an effective measure of writing quality in the present study and captured a variety of skills associated with beginning writing. However, the measure may not have captured enough variability in children's early writing development. Future work on the measure might include finding a way to better account for children who seem to understand and are enthusiastic about writing, but who are not yet capable of using appropriate spelling or other standard writing conventions to communicate their ideas.

It may have been easier to establish significant associations between teacher-child relationship quality and children's writing if the writing quality measure had been administered by the child's teacher instead of the author. The administration by a non-teacher may have had a different effect than the teacher's presence on children's writing quality. For example, had the task been administered within a dyad experiencing high conflict, the child may have had difficulty concentrating on the task and therefore not produced up to potential. Future studies should address associations between teacher-child relationship quality and children's writing by observing interactions between children and teachers during authentic writing instruction.

Another limitation associated with the writing measure may have been the decision to ask children to submit a descriptive writing sample. The focus on writing instruction in these schools was minimal, and children had little experience writing in the descriptive genre. Though children generally understood the directions when presented

with the task and most seemed able to describe the scene in detail, they may have been less confident than they would have been writing a narrative, for example.

Another way to have captured the teacher-child relationship's influence on writing may have been to use a picture prompt or even a story starter, requiring children to write about relationships. Children could have responded to a problem-solution type of prompt. For example, a typical classroom problem might involve children breaking a rule or having a disagreement with peers. Future studies might address how teacher-child relationship quality would influence children's ideas and writing in response to these types of prompts.

Teacher-Child Relationship Quality

The current study assessed the teacher-child relationship from both the teacher and child's perspectives. Given relationships are complex, using multiple sources to identify important aspects of those relationships would be most effective in understanding the value of the teacher-child relationship for children's learning. Furthermore, reports of relationship quality from the child's perspective were not correlated with teacher reports of relationship quality in the present study. A future study might benefit from adding the perspective of an outside observer.

Furthermore, the child measure, Feelings About School (Valeski & Stipek, 2001) reflected little variability and was positively skewed. Capturing the child's perspective is difficult. While most children understood the directions, and sample questions were built into the measure to guide children's understanding of the response format, there is no way to be sure children were accurately reporting how they felt about teachers. Additionally, the FAS was administered by strangers so children may have been

uncomfortable expressing negative feelings about teachers for fear that these responses would get them into trouble. The age of the children may have also been a factor. The children in this study ranged in age from 5 to 7 years old and perhaps may have been at a developmental stage in which reporting their feelings is more difficult.

Future studies might try measuring the quality of the teacher-child relationship from the child's perspective in additional ways. Perhaps, a story completion task might better capture children's feelings about teachers. In these measures, which are typically used in the study of parent-child relationships, children use dolls or puppets to respond to a problematic scenario (Laible et al., 2004; Oppenheim, 1997; Page, 2001; Page & Bretherton, 2001; Verschueren et al., 1996; Waters et al., 1998). For example, children were asked to act out what would happen if they accidentally spilled juice when interacting with parents at the dinner table. The child generally bases their response on their own experience with similar scenarios in the past. In this way, the child then reveals how the adult is relied upon or what the adult's reactions to the child might be in times of distress. Designing similar story completion tasks to capture children's feelings about school and about teachers could be an important avenue for future research.

Implications

Implications for Research

The present study expands on writing research by beginning to look at contextual factors associated with children's success in writing. While many studies have addressed environmental aspects associated with children's progress in writing, as well as effective instructional strategies associated with success in writing, few studies have investigated the effect of children's relationships with teachers and its influence on their writing

quality. The classroom environment and instruction largely influence what children learn about writing, but the present study has shown there are additional factors we must consider when deciding how to help children become successful in writing. Results support including teacher-child relationship quality in future models investigating children's writing ability.

This study introduced a new measure of writing for use with children in early elementary school classrooms. Created by the author, it captured variability in children's writing performance including convention use, coherence, and understanding of genre. Furthermore, it differentiated among children on written production quality. Providing evidence of external validity, scores on the writing measure correlated with children's independently assessed receptive language ability. This tool shows promise for examining children's writing development in research and instructional contexts. For example, the writing measure could be used to differentiate children's writing skills across genres and with other prompts, (i.e. not illustrations).

The present study also confirms connections between individual child characteristics and children's learning. Future studies should consider individual child characteristics that are important for determining children's success in school. Children's language ability, as well as their initial reading status, were both associated with children's writing quality. Future studies of young children's writing (and literacy in general) would benefit from consideration of both.

The present study supports the need for intervention research. Interventions designed to improve teacher-child relationships have shown benefits for children's learning. One such intervention studied by Denham and Burton (1996) used "floor time"

as a way for preschool children and teachers to spend quality time together. “Floor time” facilitated teachers and children getting to know each other better. Results indicated decreased displays of negative emotion, increased skill interacting with peers, and greater productive involvement in the classroom (Denham & Burton, 1996). Future studies should seek to evaluate interventions aimed at improving children’s relationships with teachers and its effects on children’s literacy outcomes.

Time spent individually between teachers and children while writing is likely to improve children’s writing ability, but also may impact how children and teachers relate to one another. Gallagher and colleagues (2006) investigated the impact of 1:1 storybook reading on teacher-child relationships and children’s literacy progress. Results indicated teachers felt the time spent with these children helped improve the children’s reading skills but also helped to improve children’s general comfort with teachers (Gallagher et al., 2006). Future interventions could be designed in which teachers and children could engage in 1:1 writing activities, with the hope of increasing both teacher-child closeness and children’s writing quality.

Implications for Practice

Results of the present study have important implications for schools and teachers. First, the results confirm the importance of the teacher-child relationship to children’s learning. Specifically, the results confirm the salience of teacher-child conflict for children’s performance in writing. Teachers are often the first to say how important relationships are to the success of their classroom. However, delivering instruction in multiple content areas to a diverse group of students leaves little time for relationship building. Schools must learn how to better support teachers in building positive

relationships by reducing the conflict experienced with students. Perhaps, smaller class sizes or smaller adult:child ratios would be one way do to this. Teachers would then have more opportunities to spend time getting to know children personally. It would also enable them to observe and respond to children's instructional needs more readily.

Similarly, schools are putting more and more pressure on teachers to cover an enormous amount of instructional content across the school year. This leads to classroom schedules where children (and their teachers) are constantly busy, moving quickly from one activity to the next with few opportunities to connect with one another through rich, extended discussion of topics or to connect children's learning with their personal lives. The stress teachers feel in this climate, may also contribute to the development of conflict in teacher-child relationships. When stressed it would be difficult for anyone to build and maintain positive relationships, particularly with children who require a lot of attention or energy. Therefore, school systems and administrative staff should work to alleviate teacher stress. One way to do this might be to give more breaks to teachers and children during the school day. Giving teachers a small break during the day might allow them to take a breath and reflect on their practice, enabling them to return to classrooms with a healthier, positive perspective on things.

The study's results connect teacher-child relationship quality and children's writing outcomes. In thinking about assessment in the area of writing it may be important for teachers to consider children's comfort in the classroom. Children who feel insecure in their relationships with teachers may also have difficulty expressing themselves in writing or may have difficulty concentrating while writing. This could lead to inaccurate assessments of children's true potential in writing. Assessments might be

created in which children can write about familiar, comfortable topics. Teachers should also be explicit about expectations in the early grades, helping children understand coherent expression of ideas is often more important than perfect spelling or grammar.

Understanding a child's relationship history with parents can help teachers better understand how to interact and bond with the child. Previous research has shown teacher-child relationship quality is consistent with the quality of parent-child relationships (Howes & Matheson, 1992; Page & Bretherton, 2001; Stuhlman & Pianta, 2001). Understanding how the child responds in times of stress can help teachers better understand the child's feelings and enables teachers to provide support when needed, which may be particularly important for children who respond to distress through withdrawal. Understanding when a child needs assistance and how the child's parents have provided support in previous interactions can help teachers better understand the type of support needed by the child in the classroom.

This study contributes to research on the importance of the teacher-child relationship for children's learning in kindergarten and first grade by addressing specific associations between teacher-child relationship quality and children's writing quality. As in other literature, teacher-child relationship quality was significantly associated with children's school outcomes. However, this is the first study to link teacher-child relationships with children's writing. Children in relationships regarded as higher in conflict performed poorly on measures of writing quality. Schools must find ways to better support teachers to build positive classroom environments, where children and teachers feel comfortable with one another while learning to write. These should be classrooms where writing is valued and appreciated, where children are encouraged to

explore, ask questions, and experiment with writing under the guidance of sensitive teachers who provide thoughtful feedback and encouragement when children are feeling challenged.

Table 1

Variables and data sources

Data Source	Variable
Predictor Variables	
Student-Teacher Relationship Scale (STRS; (Pianta, 2001))	Teacher-child Relationship Quality: Closeness
Student-Teacher Relationship Scale (STRS; (Pianta, 2001))	Teacher-child Relationship Quality: Conflict
Feelings About School Scale (Valeski & Stipek, 2001)	Teacher-child Relationship Quality: Feelings about Teachers
TRI Family Questionnaire	Gender
Peabody Picture Vocabulary Test–III (Dunn & Dunn, 1997)	Receptive Language
Control Variables	
TRI Child Screener	Initial Reading Status
TRI Child Screener	Grade Level
TRI Classroom Observation	Interactive Teaching
TRI Classroom Observation	Didactic Teaching
Dependent Variables	
Writing Rubric	Writing Quality

Table 2

Background characteristics of the teachers (N=20)

		N	%
Gender	Male	1	5.0
	Female	19	95.0
Ethnicity	African American	6	30.0
	White	13	65.0
	Native American	1	5.0
	Asian	0	0
	Other	0	0
Years of Teaching	0-3	1	5.0
	4-9	7	35.0
	10+	12	60.0
Education	Bachelor's degree	12	60.0
	Bach degree in other field	4	20.0
	Master's degree or higher	4	20.0
TOTAL		20	

Table 3

Background characteristics of the students (N=127)

		N	% of sample
Gender	Male	67	52.8
	Female	60	47.2
Ethnicity	African American	48	37.8
	White	50	39.4
	Native American	16	12.6
	Asian	1	0.8
	Other	12	9.4
Maternal Education	Completed 8 th grade or less	4	3.1
	Completed some high school	14	11.0
	Graduated from HS, GED	36	28.3
	Some college or Associate's	59	46.5
	Bachelor's degree	8	6.3
	Graduate degree	3	2.4
Reading Status	Struggling reader	62	48.8
	Non-struggling reader	65	51.2
Grade Level	Kindergarten	65	51.2
	First Grade	62	48.8
TOTAL		127	

Table 4

Internal consistency of the writing quality sub-scale scores

Subscale	1	2	3
Conventions	-	.89	.80
Ideas	.89	-	.83
Genre	.80	.83	-

Table 5

Descriptive statistics

		N	Min	Max	Mean	Std Dev
Predictor Variables	T-C Relat Quality: Conflict	127	10.00	35.00	29.61	5.97
	T-C Relat Quality: Closeness	126	19.00	40.00	35.80	4.66
	T-C Relat Quality: Feel Abt Tchr	125	3.00	15.00	13.31	2.75
	Receptive Language	124	58.00	127.00	93.46	12.55
Control Variables	Didactic Teaching	20	5.00	26.00	14.01	5.29
	Interactive Teaching	20	16.00	37.00	27.90	5.18
Dependent Variable	Writing Quality	121	12.00	62.00	36.66	13.32

Table 6

Correlations

Variable	1	2	3	4	5	6	7	8	9
1 T-C Relat Quality: Conflict	-								
2 T-C Relat Quality: Closeness	.351***	-							
3 T-C Relat Quality: Feel Abt Tchr	.010	.068	-						
4 Receptive Language	.207**	.312***	.024	-					
5 Didactic Teaching	.158	.038	-.008	.008	-				
6 Interactive Teaching	-.178**	.089	.061	-.034	-.701***	-			
7 Writing Quality	.098	-.084	.021	.264***	.014	-.231**	-		
8 Grade Level	-.109	-.264***	-.052	-.046	.310***	-.362***	.759***	-	
9 Initial Reading Status	.229**	.104	.071	.395***	-.043	.063	.306***	.040	-
10 Gender	-.125	.024	-.130	-.002	.093	-.117	-.109	.072	-.199**

*p < .10, **p < .05, ***p < .01

Table 7

Partial correlations

Variable		1	2	3	4	5	6	7
1	T-C Relat Quality: Conflict	-						
2	T-C Relat Quality: Closeness	.302***	-					
3	T-C Relat Quality: Feel Abt Tchr	-.011	.040	-				
4	Receptive Language	.092	.256***	-.026	-			
5	Didactic Teaching	.172	.060	.032	.024	-		
6	Interactive Teaching	-.237**	.055	-.083	.025	-.642***	-	
7	Writing Quality	.174*	-.040	.021	.274***	-.274***	.113	-
8	Gender	-.089	-.070	-.048	.081	.163	-.102	-.151

*p < .10, **p < .05, ***p < .01

Table 8

Group means

Teacher #	Grade	N	Mean	Std Dev	Min	Max
1	K	3	35.67	8.08	31	45
2	K	7	26.57	7.28	15	36
3	K	5	36.80	12.74	15	47
4	1	5	49.40	7.09	40	57
5	1	8	43.25	4.77	39	50
6	K	9	24.50	8.86	17	44
7	K	8	16.86	2.73	12	20
8	1	10	21.90	7.80	15	35
9	1	9	51.44	7.73	38	62
12	K	6	30.67	9.41	20	42
13	K	9	28.33	9.79	16	44
14	K	6	30.00	6.51	21	41
15	1	6	47.67	6.19	39	54
16	1	6	48.00	6.23	41	58
17	1	7	45.00	7.59	36	53
18	1	5	43.20	6.57	36	48
20	1	5	49.00	6.82	41	56

Table 9

Multilevel models for conflict

	Conflict + Controls			Conflict + Controls + Language			Conflict + Controls + Language + Gender		
	Coefficient	Std Error	P Value	Coefficient	Std Error	P Value	Coefficient	Std Error	P Value
Intercept	23.6698	1.6989	<.0001	32.7375	3.0955	<.0001	24.9239	1.6378	<.0001
Conflict	0.4445	1.6989	<.0001	0.4182	0.1189	0.0007	0.3598	0.1226	0.0042
Grade Level	21.0765	0.1235	.0005	21.2886	2.2156	<.0001	21.1925	2.1433	<.0001
Status	5.5708	1.3059	<.0001	3.7043	1.3594	0.0076	0.3598	1.3697	0.0129
Interactive	-0.03921	0.2864	0.8928	-	-	-	-	-	-
Didactic	-0.5995	0.2712	0.0420	-0.5755	0.2129	0.0151	-0.5674	0.2085	0.0145
Language				0.1923	0.05580	0.0008	0.1954	0.05572	0.0007
Lang*Conflict				-0.00268	0.008974	0.7657	-	-	-
Gender							-0.7858	0.6593	0.2363
Gender*Conflict							0.1238	0.1093	0.2603

Table 10

Multilevel models for closeness

	Closeness		
	Coefficient	Std Error	P Value
Closeness	0.1827	0.1636	0.2667
Grade Level	19.8306	2.2967	<.0001
Status	6.8030	1.3410	<.0001
Interactive	-0.2270	0.2784	0.4268
Didactic	-0.5775	0.2659	0.0452
Language	-	-	-
Gender	-	-	-

Table 11

Multilevel models for feelings about teachers

Feelings about Teachers			
	Standard		
	Coefficient	Error	P Value
Feel abt Tchr	0.08347	0.07277	0.2542
Grade Level	19.8180	2.1798	<.0001
Status	6.1821	1.3528	<.0001
Interactive	-0.1452	0.2665	0.5933
Didactic	-0.5804	0.2543	0.0365
Language	-	-	-
Gender	-	-	-

Appendix A:

TRI Child Screener

Participant Screening for Kindergarten

Below are some of the expectations that are typically listed as appropriate for students entering kindergarten. In thinking about the students in your class, please classify all students in your class that are performing **above** these expectations, those who **meet** these expectations and those who are performing **below** these expectations.

- Writes first name.
- Communicates needs appropriately.
- Demonstrates early print awareness.
- Exhibits beginning alphabet knowledge.
- Retells simple stories with the beginning, middle, and end.
- Uses drawing/writing to communicate a message.
- Enjoys listening to stories.
- Follows one and two-step directions.
- Stays on task.
- Seeks help when needed.

Instructions for completing the Participant Screening for Kindergarten:

1. From your class list, please copy the first and last names of **ALL** of the students in your class from lowest performing to highest performing (lowest =1, etc.).
2. In the Kindergarten Skills column, please mark an X to indicate whether that child performs **BELOW** expectations, the child **MEETS** expectations, or the child performs **ABOVE** expectations.
3. In the column to the right of the child's name please circle as many of the following options that may apply to the particular child:
 - “Ch” if you find the child to be particularly challenging to engage and instruct.
 - “NE” if the child does not speak ANY English.
 - “S” if the child receives special education services that prevent him/her from participating in classroom assessments.

How many students are in your class? _____ In this column, please list the <u>first and last names</u> of ALL students in your class.	Kindergarten Skills			Ch = This child is challenging . NE = This child does not speak any English. R = This child will make rapid progress . M = This child will move during the school year. S = This child does not participate in assessments.
	Below expectations	Meets expectations	Exceeds expectations	
1.				Ch NE R M S
2.				Ch NE R M S
3.				Ch NE R M S
4.				Ch NE R M S

Participant Screening for First Grade

Below are some of the expectations typically listed as appropriate for students in first grade. In thinking about the students in your class, please classify all students in your class that are performing **above** these expectations, those who **meet** these expectations and those performing **below** these expectations.

- Demonstrates effective listening and speaking skills.
- Exhibits letter-sound knowledge.
- Recognizes high-frequency words.
- Uses decoding strategies.
- Uses writing to communicate meaning.
- Spells three and four letter words.
- Demonstrates appropriate letter formation.
- Follows directions.
- Participates in class discussions.
- Exhibits self-control.
- Works independently.
- Seeks help when needed.

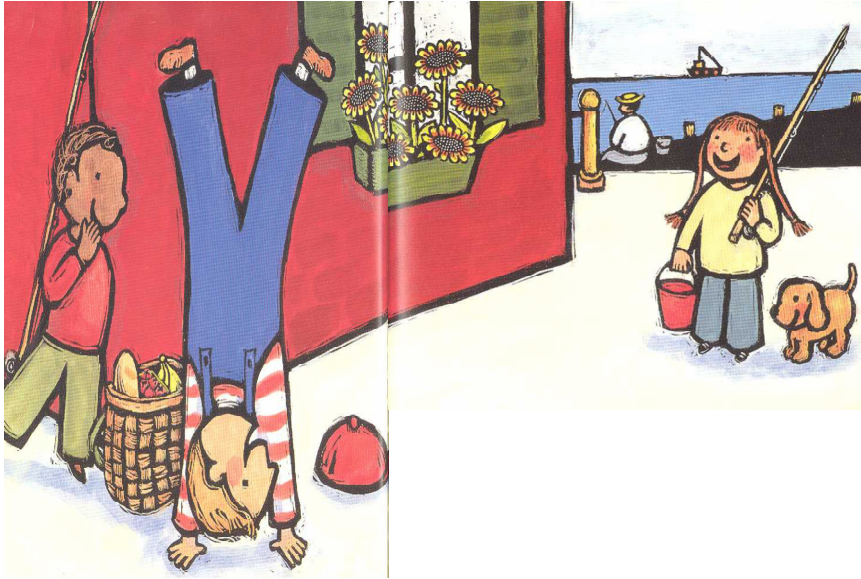
Instructions for completing the Participant Screening for First Grade:

1. From your class list, please copy the first and last names of ALL of the students in your class from lowest performing to highest performing (lowest =1, etc.).
2. In the Kindergarten Skills column, please mark an X to indicate whether that child performs BELOW expectations, the child MEETS expectations, or the child performs ABOVE expectations.
3. In the column to the right of the child's name please circle as many of the following options that may apply to the particular child:
 "Ch" if you find the child to be particularly challenging to engage and instruct.
 "NE" if the child does not speak ANY English.
 "S" if the child receives special education services that prevent him/her from participating in classroom assessments.

How many students are in your class? _____ In this column, please list the <u>first and last names</u> of ALL students in your class.	First Grade Skills			Ch = This child is challenging . NE = This child does not speak any English. R = This child will make rapid progress . M = This child will move during the school year. S = This child does not participate in assessments.
	Below expectations	Meets expectations	Exceeds expectations	
1.				Ch NE R M S
2.				Ch NE R M S
3.				Ch NE R M S
4.				Ch NE R M S
5.				Ch NE R M S

Appendix B:

Picture prompts



Appendix C:

Writing Rubric

Use of Conventions	1	2	3	4	5	6
Spelling	<p>Makes no attempt to use letters to represent words.</p> <p>OR</p> <p>Uses scribbles or letter-like figures.</p>	<p>Exhibits pre-communicative spelling behaviors.</p> <p>Pre-communicative: Demonstrates some knowledge that letters are used to make words, but makes no connection between letters and their sounds.</p> <p>Example: SHRUUBRT = oven</p>	<p>Exhibits semi-phonetic spelling behaviors.</p> <p>Semi-phonetic: Letters used to represent words provide partial mapping of phonetic representation for the word being spelled.</p> <p>Example: DP = dump</p>	<p>Exhibits phonetic spelling behaviors.</p> <p>Phonetic: Provides a total mapping of letter-sound correspondence; all of the surface sound features of the words being spelled are represented in the spelling.</p> <p>Example: I WEL KOM TO YOR HAWS = I will come to your house.</p>	<p>Exhibits transitional spelling behaviors.</p> <p>Transitional: Adheres to basic spelling conventions, vowels appear in each syllable, etc.</p> <p>Example: IT'S GOING TO BE FAIR TOMORO = It's going to be fair tomorrow.</p>	<p>Uses conventional spellings.</p>

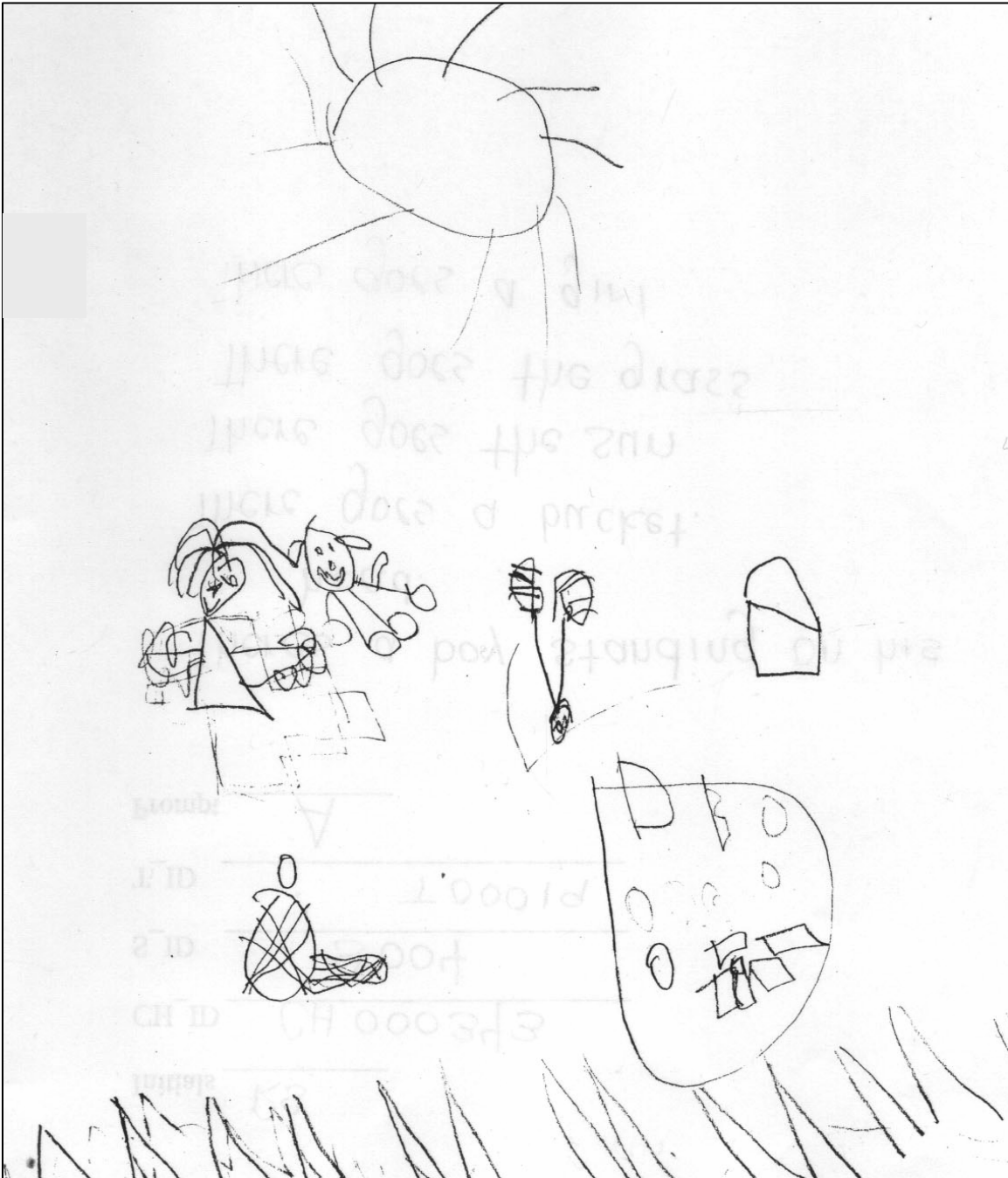
Punc/ Capital	<p>Did not use any end punctuation.</p> <p>Did not use appropriate capitalization.</p>	<p>Does not use correct punctuation at the end of any sentences.</p> <p>AND</p> <p>Uses capital letters to begin some sentences, but may insert multiple misplaced capital letters within words or sentences.</p> <p>OR</p> <p>Uses correct punctuation at the end of some sentences.</p> <p>AND</p> <p>Does not use appropriate capitalization at the beginning of any sentences.</p>	<p>Uses correct punctuation at the end of some sentences.</p> <p>Uses capital letters to begin some sentences, but may occasionally insert misplaced capital letters within words or sentences.</p>	<p>Uses correct punctuation at the end of most sentences.</p> <p>Uses capital letters to begin some sentences. Misplaced capital letters within words or sentences are minimal</p>	<p>Uses correct punctuation at the end of all sentences.</p> <p>Uses capital letters to begin most sentences.</p> <p>May attempt to use punctuation in other ways but does not always use these marks appropriately.</p>	<p>Uses correct punctuation at the end of all sentences.</p> <p>AND</p> <p>Uses correct punctuation in other ways.</p> <p>AND</p> <p>Uses capital letters to begin all sentences.</p> <p>Uses capital letters to begin most proper nouns.</p>
--------------------------	--	--	---	--	--	---

Ideas						
All ideas are clearly expressed	Idea(s) expressed in drawings are not clear.	No ideas are expressed in writing, but ideas expressed in drawings are clear.	Ideas expressed in writing are not clear.	Ideas expressed in writing are somewhat clear.	Ideas expressed in writing are clear.	Ideas expressed in writing are very clear and well written.
Topic and use of detail	<p>Topic expressed in drawing/writing is not clear.</p> <p>No major details are included in drawings.</p>	<p>Topic expressed in drawing is somewhat clear.</p> <p>Sample only includes 1-2 major details in drawing, but no supporting details.</p>	<p>Topic expressed in drawing is very clear and includes detail.</p> <p>OR</p> <p>Attempts to express topic in writing, but topic is not clear.</p> <p>Sample includes minimal details in writing,.</p>	<p>Topic expressed in writing is somewhat clear.</p> <p>Major details are given in writing which support the topic, with no supporting details.</p> <p>Order of details presented is somewhat logical.</p>	<p>Topic expressed in writing is clear.</p> <p>Topic is identified towards the beginning of the text.</p> <p>All major details are given clearly and strongly supporting the topic.</p> <p>Text includes some supporting details and is presented in a logical order.</p>	<p>Topic expressed in writing is very clear and well written.</p> <p>Includes clearly written general opening statement describing the topic of the scene.</p> <p>All major details are present in clear support of the topic. Text includes all important secondary details as well.</p> <p>All details are presented in a logical order.</p>

Aspects of genre						
Setting (or background) is well articulated	Aspects of the setting are not articulated in drawing or writing.	Important aspects of the setting are included in drawing(s).	Aspects of the setting are expressed in writing but are not articulated well.	Important aspects of the setting are somewhat well articulated in writing.	Important aspects of the setting are well articulated in writing.	Multiple important aspects of the setting are very well articulated in writing.
Uses descriptive words or phrases	Does not use descriptive words or phrases.	Uses 1-2 descriptive words, but word choice was poor or not appropriate.	Uses 1-2 descriptive words, with moderate appropriateness.	Uses 2-3 descriptive words or phrases that help describe the scene.	Uses 3-4 descriptive words or phrases that help describe the scene.	Uses 5 or more descriptive words or phrases that accurately and effectively describe all major aspects of the scene.

Appendix D:

Anchored writing samples



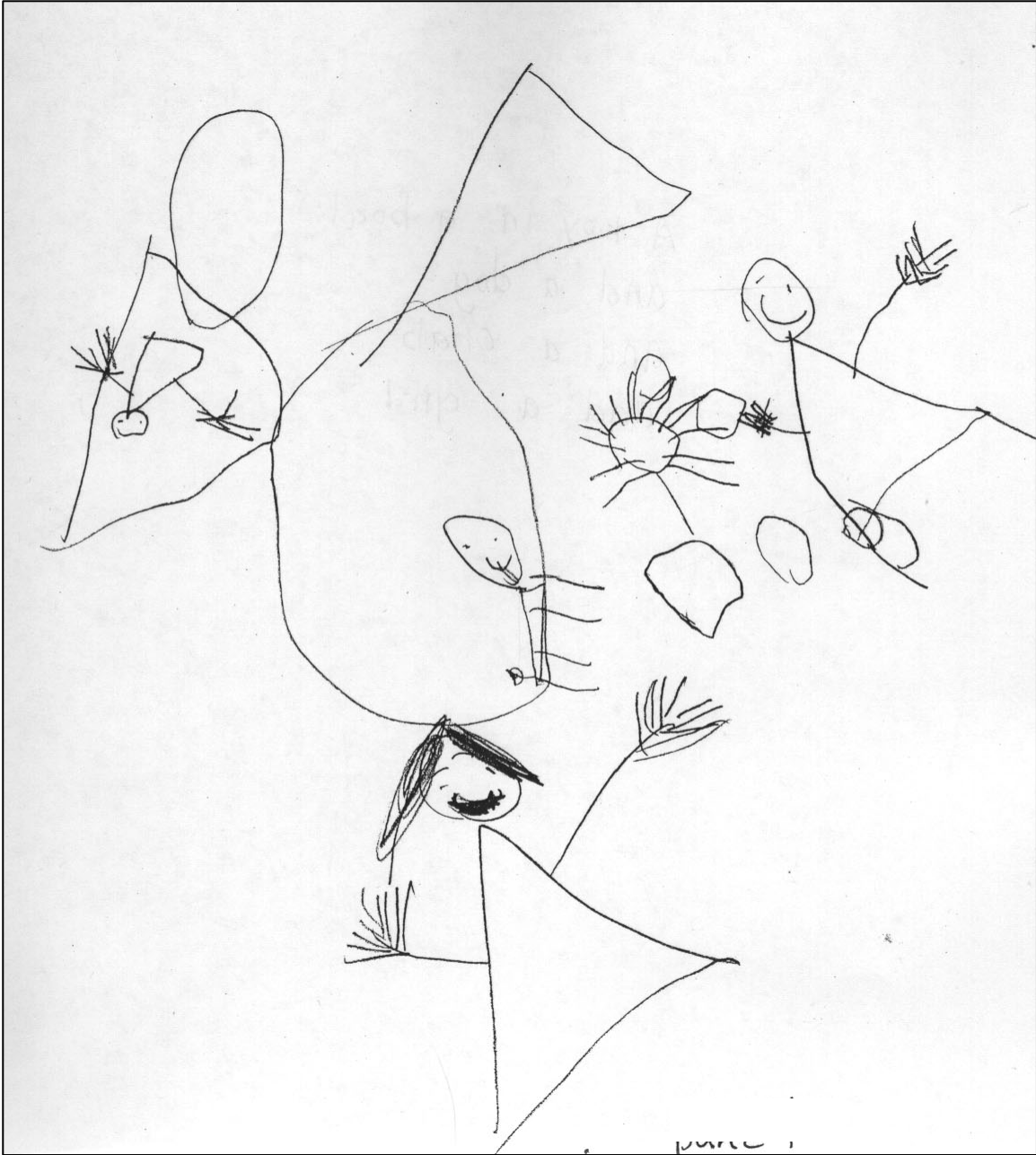
Spelling 1

“There’s a boy standing on his head.
There goes a bucket.
There goes the grass.
There goes a girl.”

A boy is upside down,
The boy's hat is on the ground.
A man is fishing.
A girl is holding a fishing pole.
A boy is smiling.
The girl is smiling.
A fishing pole is beside the boy.
A basket is beside the boy.
I see a boat.
I see a dog.

Spelling 6

"A boy is upside down.
The boy's hat is on the ground.
A man is fishing.
A girl is holding a fishing pole.
A boy is smiling.
A fishing pole is beside the boy.
A basket is beside the boy.
I see a boat.
I see a dog."



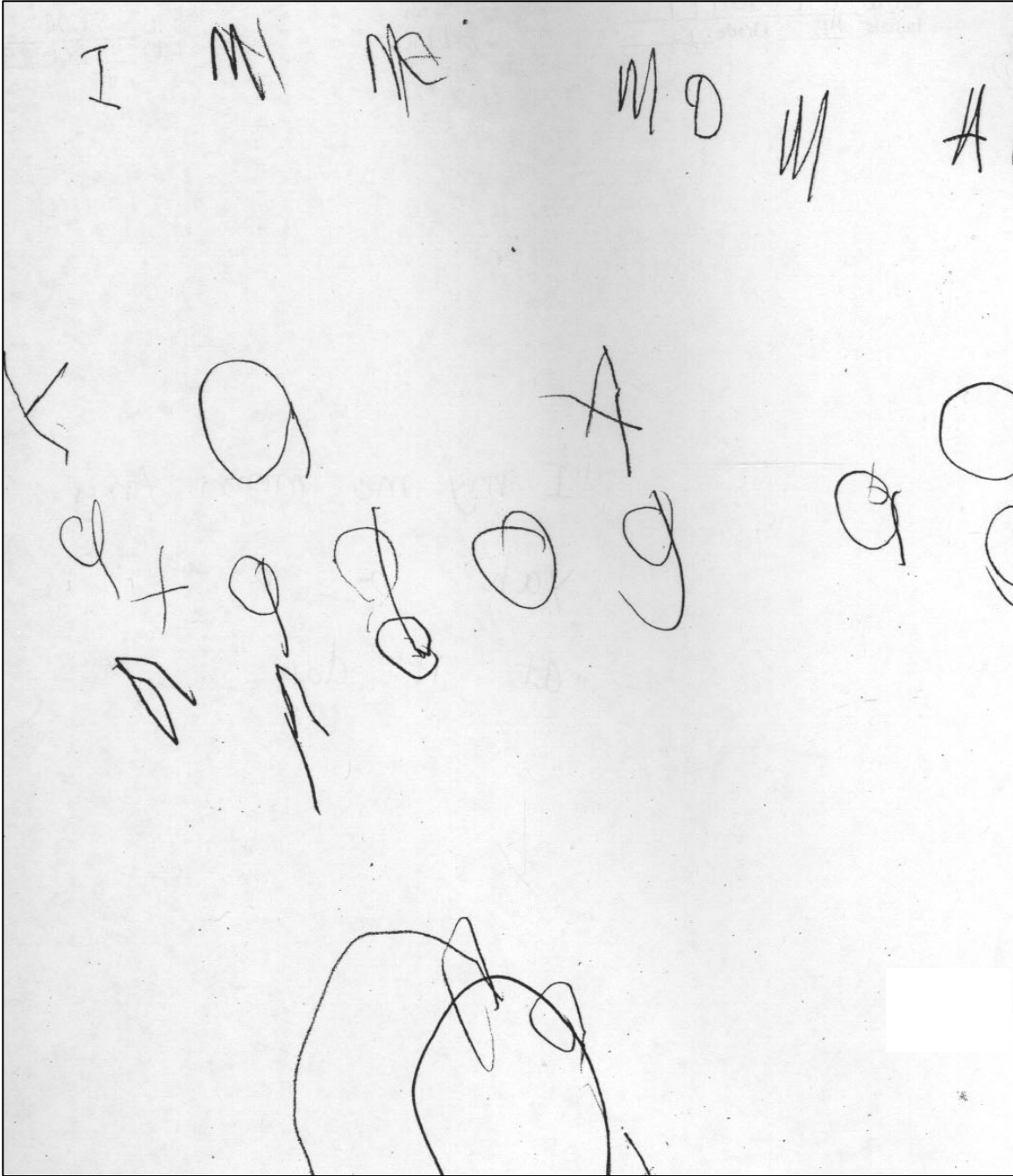
Punctuation 1

“A boy in a boat
and a dog
and a crab
and a girl.”

He is up side down!
He feet are in the air.
The boy is laughing.
The girl is laughing too.
She has a puppie and a fish pole.

Punctuation 6

"He is upside down.
His feet are in the air.
The boy is laughing.
The girl is laughing too.
She has a puppy and a fishing pole."

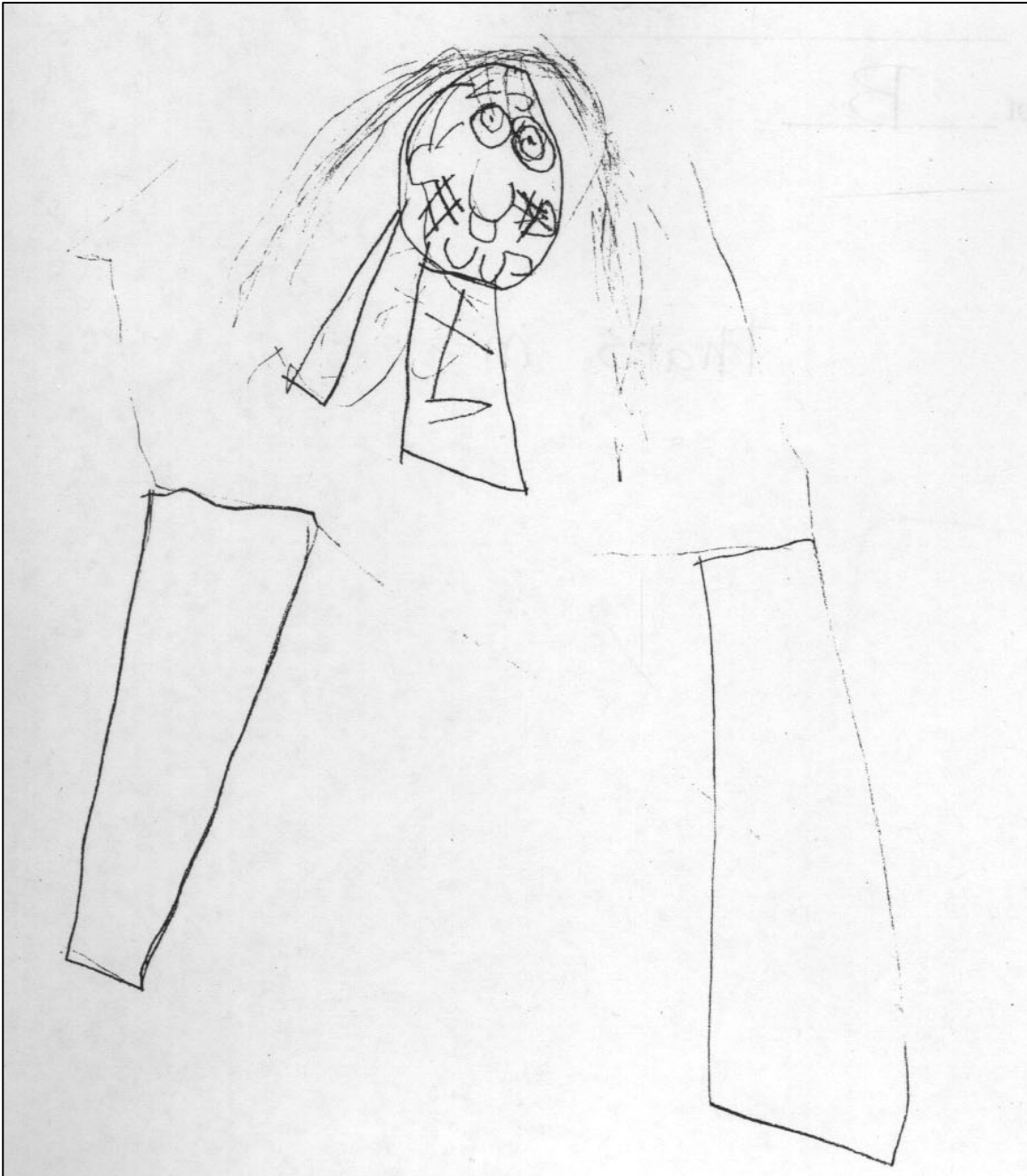


Ideas 1
“Me and my Mom.”

The girl and the puppy went
fishing. When they got back. The boy
was doing cartwheels. The boy was
funny. They laughed and laughed.

Ideas 6

"The girls and the puppy went
fishing. When they got back the boy
was doing cartwheels. The boy was
funny. They laughed and laughed."

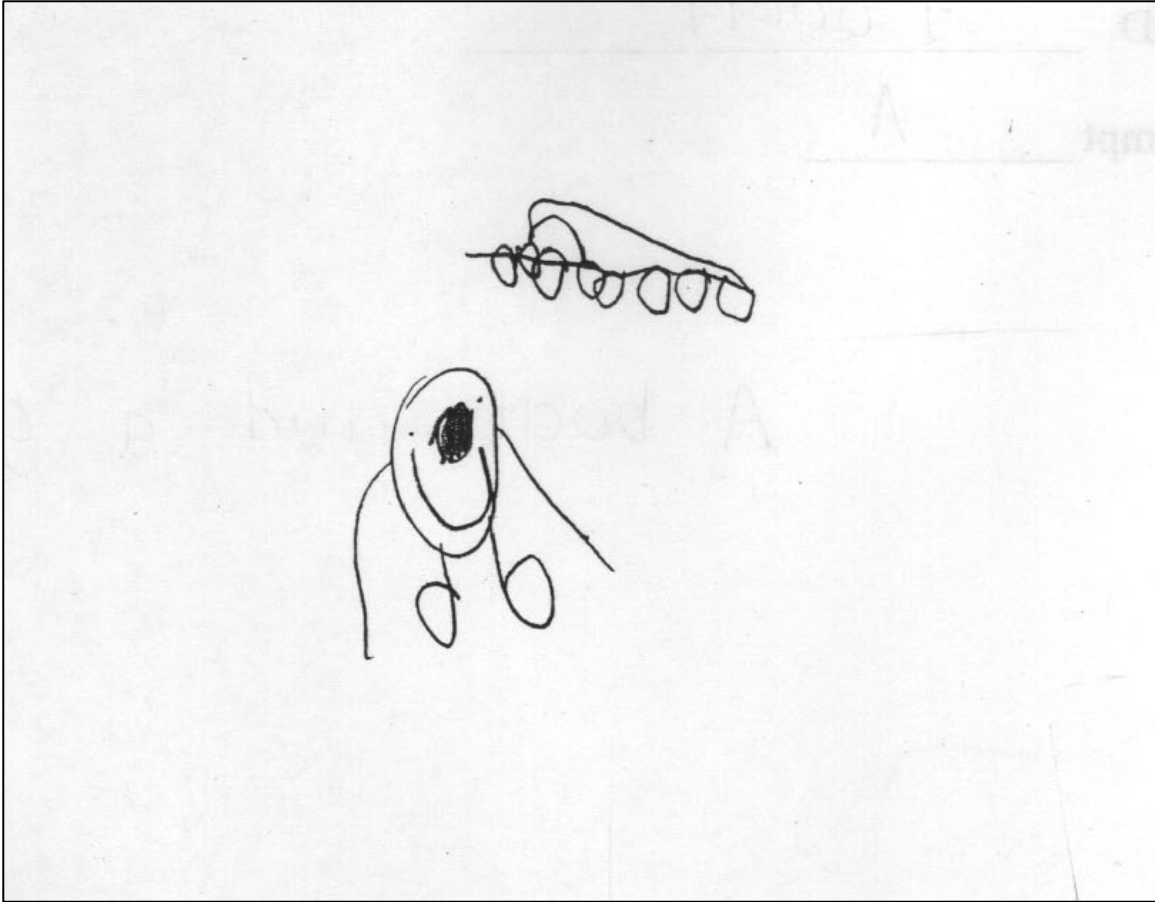


Topic 1
"That's me."

pepale are going to get a boat ready
so they can go to some rocks
so they can go fishing. A little
boy got a crab. Other people
were fishing too. They took
two pails and one basket.

Topic 6

“People are going to get a boat ready
so they can go to some rocks
so they can go fishing. A little
boy got a crab. Other people
were fishing too. They took
two pails and one basket.”

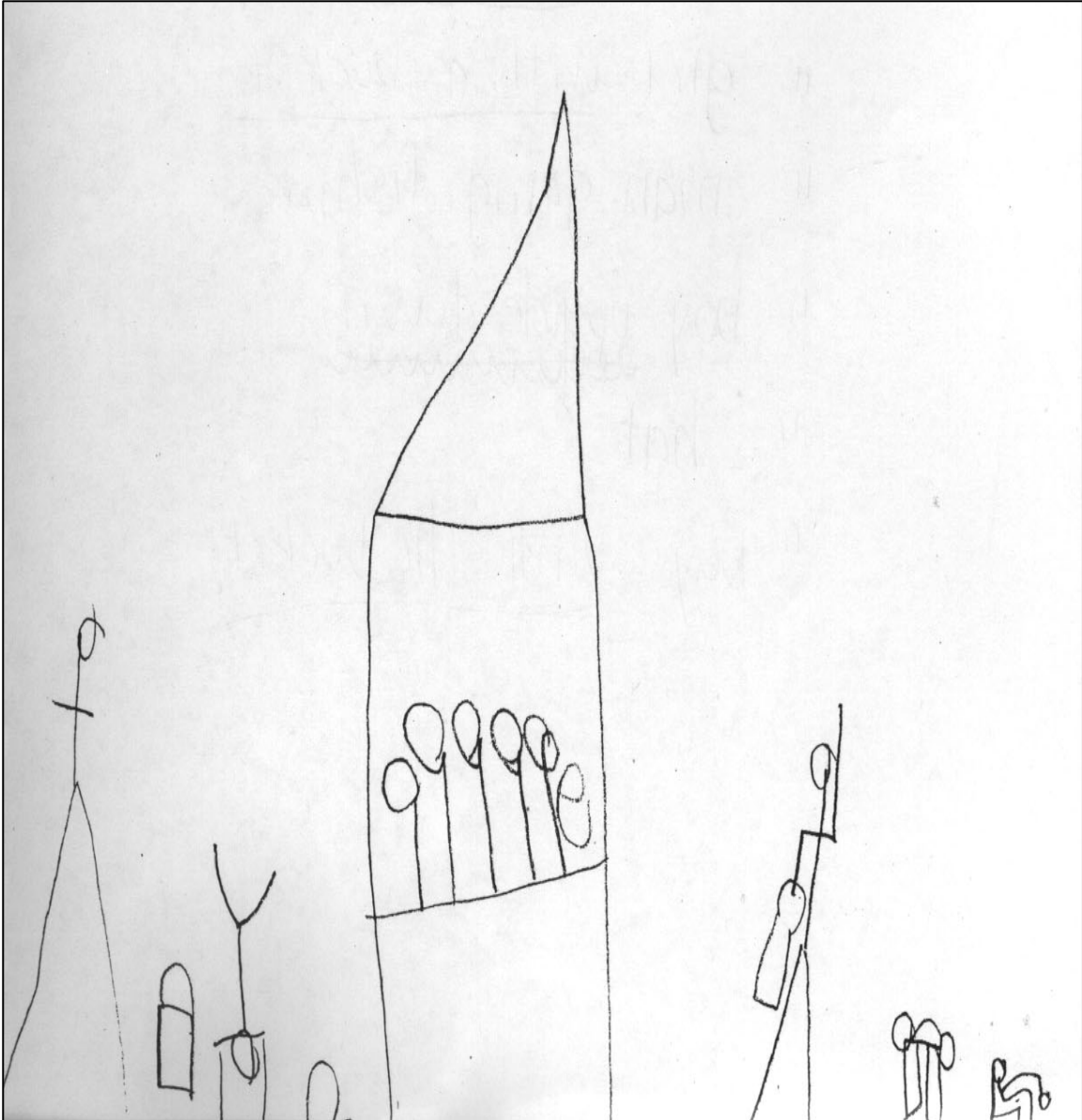


Setting 1
“A girl and a boat.”

I see six peop at the beach.
 I see one puppy. Ther is two boats.
 A green crab and a brown basket.
 The ocn is dark blue. All six peop and
 boy are smiling. I see three rocks.
 one is wearing a red shirt and green pants.
 And the girl is wearing green pants and a yellow
 shirt. I see a home it's red.

Setting 6

"I see six people at the beach.
 I see one puppy. There is two boats.
 A green crab and a brown basket.
 The ocean is dark blue. All six people and
 boy are smiling. I see three rocks.
 One is wearing a red shirt and green pants.
 And the girl is wearing green pants and a yellow
 shirt. I see a home. It is red."



Descriptive 1
“There’s a boat and a man fishing.”

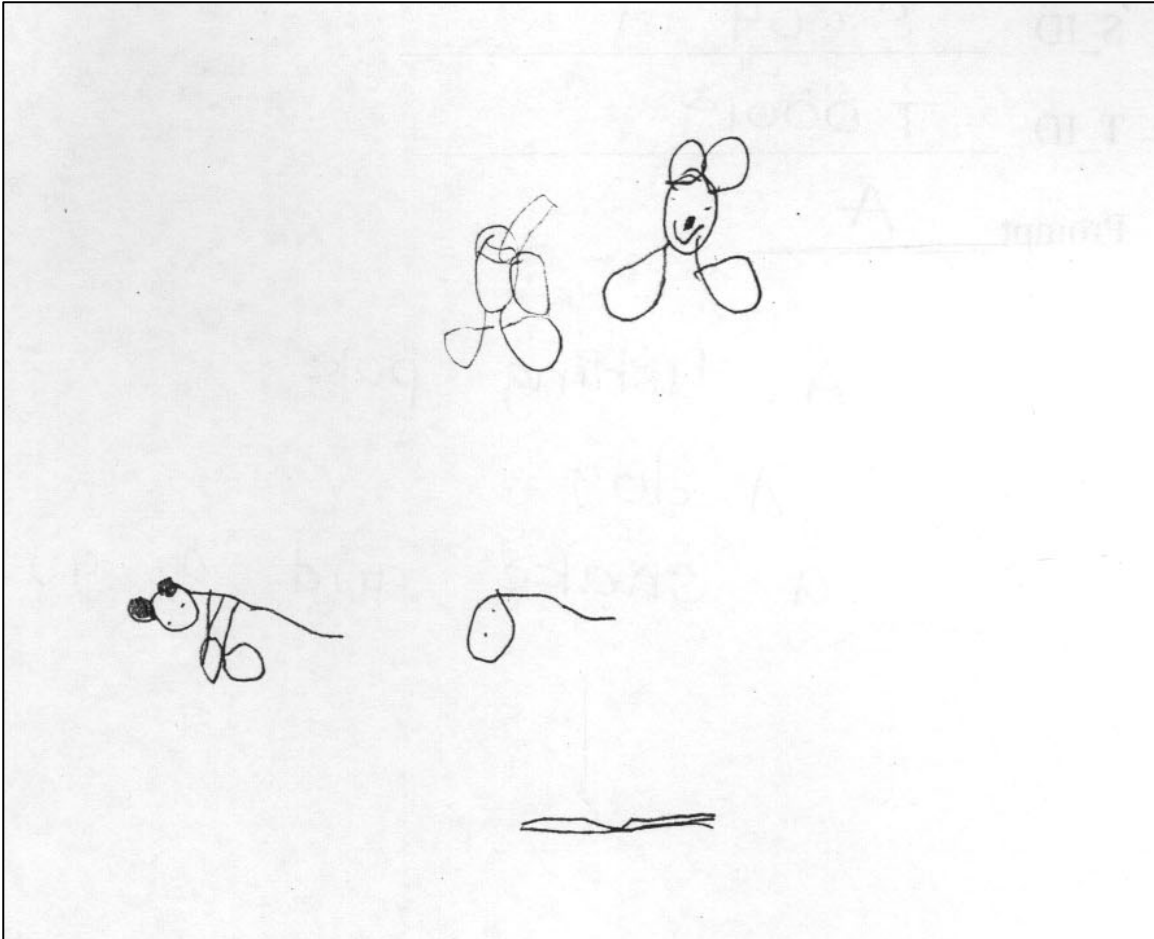
A dog is in a sailboat,
A boy picked up a crab,
Two boys are fishing on
rocks. A boy is sailing
to the ocean. A girl is
pushing a boat.

Descriptive 6

"A dog is in a sailboat.
A boy picked up a crab.
Two boys are fishing on
rocks. A boy is sailing
to the ocean. A girl is
pushing a boat."

Appendix E:

Low, Average, and High Quality Writing Samples



Low
“A fishing pole, a
dog, a snake, and a
girl.”

There is a dog,
There is some rocks
There is alot of wordn
There is some peypool
That are fistin
And that is a girl that is pushin a boat

Average

“There is a dog.
There is some rocks.
There is a lot of water.
There is some people.
that are fishing. And that is a
girl that is pushing a boat.”

The girl was going to the sea,
And her puppy. Two boys was going
fishing and one boy was getting
crabs. The boy got a green
crab. But the boys did not get
no fish.

High

"The girl was going to the sea.
And her puppy. Two boys was going
fishing and one boy was getting
crabs. The boy got a green
crab. But the boys did not get
no fish."

Appendix F:

SAS Codes

Null Model

```
proc mixed data=foo.KELDISS method=reml cl covtest;  
class tid;  
model Writ_TotSUM = / solution alpha=.05 ddfm=bw;  
random intercept/subject=tid v vcorr;  
run;
```

Hypothesis One

Conflict Model

```
proc mixed data=foo.KELDISS method=reml cl covtest;  
class tid;  
model Writ_TotSUM = Con_MeanCent / solution alpha=.05 ddfm=bw;  
random intercept/subject=tid;  
run;
```

Conflict + Controls Model

```
proc mixed data=foo.KELDISS method=reml cl covtest;  
class tid;  
model Writ_TotSUM = Con_MeanCent grade status Didac_MeanCent  
Interac_MeanCent / solution alpha=.05 ddfm=bw;  
random intercept/subject=tid;  
run;
```

Closeness Model

```
proc mixed data=foo.KELDISS method=reml cl covtest;  
class tid;  
model Writ_TotSUM = Close_MeanCent / solution alpha=.05 ddfm=bw;  
random intercept/subject=tid;  
run;
```

Closeness + Controls Model

```
proc mixed data=foo.KELDISS method=reml cl covtest;  
class tid;  
model Writ_TotSUM = Close_MeanCent grade status TALL_Interac TALL_Didacti /  
solution alpha=.05 ddfm=bw;  
random intercept/subject=tid;  
run;
```

Feelings About Teacher Model

```
proc mixed data=foo.KELDISS method=reml cl covtest;
class tid;
model Writ_TotSUM = FASRaw_MnCent / solution alpha=.05 ddfm=bw;
random intercept/subject=tid;
run;
```

Feelings About Teacher + Controls Model

```
proc mixed data=foo.KELDISS method=reml cl covtest;
class tid;
model Writ_TotSUM = FASRaw_MnCent grade status TALL_Interac TALL_Didacti /
solution alpha=.05 ddfm=bw;
random intercept/subject=tid;
run;
```

Hypothesis Two

Conflict + Controls + Language Model

```
proc mixed data=foo.KELDISS method=reml cl covtest;
class tid;
model Writ_TotSUM = Con_MeanCent status grade TALL_Didacti PPVTstd_MeanCent
PPVTstd_MeanCent*Con_MeanCent / solution alpha=.05 ddfm=bw;
random intercept/subject=tid;
run;
```

Hypothesis Three

Conflict + Controls + Language + Gender Model

```
proc mixed data=foo.KELDISS method=reml cl covtest;
class tid;
model Writ_TotSUM = Con_MeanCent status grade TALL_Didacti PPVTstd_MeanCent
gender gender*Con_MeanCent / solution alpha=.05 ddfm=bw;
random intercept/subject=tid;
run;
```

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