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Evaluating the Correlations Between Teacher–Student Relationships, Friendship, and Reading and Writing Achievement

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**EVALUATING THE CORRELATIONS BETWEEN TEACHER-STUDENT
RELATIONSHIPS, FRIENDSHIP, AND READING AND WRITING ACHIEVEMENT**

A Master's Thesis

Presented to

The Graduate College of
Missouri State University

In Partial Fulfillment

Of the Requirements for the Degree

Master of Science, Early Childhood and Family Development

By

Jessica Megan Ridder

December 2018

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EVALUATING THE CORRELATIONS BETWEEN TEACHER–STUDENT RELATIONSHIPS, FRIENDSHIP, AND READING AND WRITING ACHIEVEMENT

Childhood Education and Family Studies

Missouri State University, December 2018

Master of Science

Jessica Megan Ridder

ABSTRACT

The purpose of this correlational study is to assess the extent to which teacher–student relationships, children’s friendship, writing scores and reading scores are related to one another among young children. Understanding the correlations between these variables could further assist teachers and students when working towards successful school experiences. Measures used with kindergarten and first grade teachers and students ($n=83$) include the validated short form of the Student–Teacher Relationship Scale, a whole group oral survey adapted from the Friendship Features Interview for Young Children, and reading and writing scores. Relationship areas studied include teacher–student closeness and conflict, as well as friendship aid, conflict and satisfaction. There was a non-significant correlation of .22 ($p=.052$) between reading and teacher–student closeness, but reading and teacher–student conflict were significantly correlated, $r=-.30$, $p=.006$. Writing and teacher–student closeness were significantly correlated at .36 ($p<.001$) as well as writing and teacher–student conflict at $-.42$ ($p<.001$). Reading and each of the three friendship subscales were not significantly correlated ($r<.2$, $p>.05$). Neither were writing and friendship aid ($r=.11$, $p>.3$). However, writing was significantly correlated to both friendship conflict ($r=-.37$, $p<.001$) and friendship satisfaction ($r=.25$, $p=.03$). The findings of this study indicate that some facets of classroom relationships and academic achievement in reading and writing are related to one another.

KEYWORDS: teacher–student relationships, friendship, academic achievement, reading achievement, writing achievement, elementary school

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Approved:

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In the interest of academic freedom and the principle of free speech, approval of this thesis indicates the format is acceptable and meets the academic criteria for the discipline as determined by the faculty that constitute the thesis committee. The content and views expressed in this thesis are those of the student-scholar and are not endorsed by Missouri State University, its Graduate College, or its employees.

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INTRODUCTION

It is often assumed that teachers choose to follow a teaching path due to their passion of the content and/or their passion for helping children. Although elementary school teachers teach a wide variety of content that is constantly being reevaluated, one aspect of the profession that remains unchanging is that children enter and leave the classroom each day with a need for feeling cared for. For elementary school teachers, the overall goal is to produce students that meet the grade level standards and for the students to enjoy learning and coming to school. An issue is that many school districts focus on the academic aspect of school, leaving relationships to be set to the side. What if the relationships between the teacher and the students or the students and their peers affect their academic outcomes? This is a question of importance because knowing the correlation between teacher–student relationships, children’s relationships and academics could impact teaching practices that are evaluated, among districts in the future. Additionally, understanding these correlations can impact student learning and growth.

In researching the association between teacher–student relationships and a student’s academic achievement, teachers will have the chance to better the education of their students through gaining an understanding of the importance of improved teacher–student interactions. Additionally, finding the connection between a teacher–student relationship and children’s friendship and also the connection between friendship and students’ academic achievement will help teachers to understand what areas of relationships should be focused on in the classroom to support student growth. Understanding these variables could further assist students in having more positive relationships with their teachers and peers, which could lead to better student academic achievement. As a first grade teacher, it is my responsibility to assist my students in

their academic achievement. Unfortunately, there is little information in the reviewed literature that studies the correlations between the four variables of teacher–student relationship, friendship quality, writing achievement and reading achievement in kindergarten and first grade students. It is my hope that if this study finds relations between these variables, that those relations can be studied further to explore causality and hopefully assist teachers in finding the areas of relationships to focus on in order to better students’ academic achievement.

Rationale for the Study

Problematic behaviors (i.e. challenging behaviors) from children can cause difficulty for teachers when building classroom relationships. It is easy to view these behaviors (e.g. aggression, hyperactivity, and attention/distraction behavior problems) as a student’s way of expressing their wish to not participate in what the teacher has planned. However, when a teacher makes this assumption, their reaction to the behavior may not be beneficial to the teacher–student relationship. When challenging behaviors occur in the classroom, the teacher can choose how they react to those behaviors. Research suggests that the way problematic behaviors are handled by the teacher does contribute to the type of relationship that a teacher and student will have (Valiente, Swanson, & Lemery-Chalfant, 2012). Awareness of the importance of classroom relationships is crucial for the success of students.

As a first grade teacher, I have found that disconnected students tend to underperform academically. Hosan and Hoglund (2017) found that students who have negative relationships with their teachers will connect those feelings with their attitude towards school and learning. Additionally, the more positive (i.e. close and trusting) that the relationship is between a student and their teacher, the more comfortable the student feels in learning environments. This increases

their willingness to attempt solving problems they are unsure of and their willingness to work in groups, which makes them valued members of the learning community (Hosan & Hoglund, 2017). The aforementioned information shows the importance of understanding the relationships between teachers and students and the effects of those relationships.

In addition to the teacher–student relationship, another important set of relationships in a school setting is the peer to peer relationships among students (i.e. children’s friendships). Ladd, Kochenderfer, and Coleman (1996) found that students who had peer relationships that were positive (e.g. close, trusting, non-conflictual, and helpful) also had a more positive attitude towards school. Furrer and Skinner (2003) noted that children who had positive relationships with their peers also had higher security in school settings as well as higher self-esteem. Although the related literature regarding children’s friendships mostly studies work with children in second grade and above, information examining children’s friendships in relationship to their academic performance is needed regarding kindergarten and first grade students.

Although there is limited material describing relationships between teachers and students as well as friendships between peers, there is a need for more clarification of the correlations between teacher–student relationships, friendship, and students’ academic achievement in both reading and writing, particularly among young students. Understanding these possible correlations can assist teachers when promoting learning and friendships in the classroom.

Purpose of the Study

The purpose of this quantitative correlational study is to evaluate the extent to which teacher–student relationships, children’s friendship, writing scores and reading scores are related to one another.

Prior research shows insufficient information on the impacts of these relationships on students' academic success. In regards to teacher–student relationships, teachers and students interact throughout an entire school day. I believe that this relationship could relate to the friendships that students form as well as the achievement that students have academically. Although there are teachers who care deeply about creating close relationships with their students, as well as curating positive peer relationships, relationships are not often included in school districts' assessments of teachers. However, teachers are evaluated on their implementation of lessons and grade level standards, as well as the achievement and growth that students make. For this reason, this study could encourage further research for causality of any relations found, which could benefit teachers and school districts in examining ways to increase students' academic success.

In order to fully understand the connection between these variables, it is important to survey the teachers and students regarding these relationships as well as gather reading and writing achievement scores. It is important to understand and find the connections in these variables in order to create classrooms where students are set up to succeed academically.

LITERATURE REVIEW

To best teach today's students, it is crucial to understand relationships that students hold and the academic successes that they have. The purpose of this correlational study is to assess the extent to which teacher–student relationships, children's friendship, writing scores and reading scores are related to one another among young children.

To begin this review of the related literature, teacher–student relationships will be examined. Following this, information regarding friendships in young children from prior studies will be described. Next, the academic achievements resulting from negative and positive teacher–student relationships and friendships will be discussed. In finalizing this chapter, the material mentioned throughout, along with the purpose of this study, will be summarized, and the research questions will be listed.

Teacher–Student Relationships

The teacher–student relationship is the camaraderie between teachers and students. Like any relationship, the behaviors and actions of those involved determine the overall feeling (e.g. positive or negative) of the relationship. Behaviors that children demonstrate, both positive and negative or challenging, are strongly correlated to the relationship that they develop with their teachers (Demirkaya & Bakkaloglu, 2015; Stipek, & Miles, 2008; Valiente et al., 2012). The negatively associated child-demonstrated behaviors discussed in this section include physical aggression, verbal aggression, hyperactivity, attention/distraction behavior problems, poor social skills, and low effortful control (such as difficulty in managing one's own behavior). Although further into this review, the impact of teacher–child relationships on student academic success

will be examined, academic achievement will also be explored in this section with its relation to child behaviors that are displayed in the classroom.

Stipek and Miles (2008) described aggressive behaviors in children, both physical and verbal, as the cause and/or the result of conflict with teachers and low academic achievement. For instance, when a student is experiencing conflict with a teacher, the behaviors that come from that conflict are less cooperative participation in the classroom (Stipek & Miles, 2008) and acting out in the classroom as well as feelings of alienation (Valiente et al., 2012). Additionally, hyperactivity and attention/distraction behavior problems tend to result in poor student academic achievement (Stipek & Miles, 2008). When changes in student achievement occur, it is likely to be related to changes in aggression (Hudley, 1993; Stipek & Miles, 2008) and the teacher–student relationship may become negative (i.e. conflictual) (Demirkaya & Bakkaloglu, 2015). Reversing these behaviors, and changing the way that teachers respond to these behaviors, could break the cycle of negative teacher–student relationships as well as low student achievement. Although aggressive behaviors as well as hyperactivity and attention/distraction behavior problems can be critical reasons for why negative teacher–student relationships occur (Hudley, 1993), they are not the only behaviors that result in conflict with teachers.

Valiente et al. (2012) explained that children with effortful control display feelings of comfort in the school environment and in turn have more positive teacher–student relationships than those who do not display effortful control. Children who display low effortful control show difficulty managing behaviors and feelings which result in negative teacher–student relationships (Valiente et al., 2012). Likewise, Demirkaya and Bakkaloglu (2015) examined student–teacher relationships with children and found that students with low social skills not only displayed problematic behaviors but were also viewed by the teachers as difficult to teach. This not only

resulted in poor student–teacher relationships (Valiente et al., 2012), but also occasionally resulted in the students receiving low levels of positive feedback from teachers (Demirkaya & Bakkaloglu, 2015).

Research suggests that positive teacher behaviors (e.g. caring and accepting) encourage academic success of students (Spilt, Hughes, Wu, & Kwok, 2012). Additionally, from findings by Elledge, Elledge, Newgent, and Cavell (2016), it is suggested that protective behaviors of teachers for their students minimize the actions of peer-victimization among students.

It is apparent that children’s negatively perceived behaviors are related to their relationship with teachers, as negative behaviors equal conflict with teachers, disrupting the teacher–student relationship. Likewise, it is clear that there is an importance of teachers being mindful of their own behaviors and interactions with children, in regards to the formation of a positive teacher–student relationship. Given the association between teacher–student relationships and student achievement, looking at other school relationships, including friendships, is a logical next step.

Friendships in Young Children

In school, students build relationships not only with their teachers, but also with their peers. Hosan and Hoglund (2017) argued that children who experience a greater closeness with their peers and their teachers, in turn have higher school engagement and feel more positively about school. A study completed by Ladd, Kochenderfer, and Coleman (1996) in an effort to validate the Friendship Features Interview for Young Children (FFIYC), found that young children could accurately depict their relationships with their peers. In the study, kindergarten children who had more positively rated friendships with their peers also felt more comfortable in

school and during learning activities (Ladd et al., 1996). This suggests that it is important to understand and explore the friendships of young children and what impacts those friendships have on other aspects of a child's school experience.

Furrer and Skinner (2003) argued that academic engagement relies heavily on children feeling a sense of relatedness among their peers. For children in grades three through six, it was found that relatedness among peers created an ongoing motivation in children (Furrer & Skinner, 2003). On the other hand, Parker and Asher (1993) discovered that children with low acceptance by their peers had little to no motivation in school, and linked school with feelings of dissatisfaction.

Children with high levels of school engagement and school satisfaction are often the students who have friendships with high levels of validation and exclusivity (Ladd et al., 1996). These students also feel that their friendships offer them freedom within the friendship and self-worth (Ladd et al., 1996). When friendships coincide with dominating behaviors or rejection, children in these friendships then link negative feelings with their friendship and in turn, with school and learning activities as well (Furrer & Skinner, 2003; Ladd et al., 1996).

Bakadorova and Raufelder (2017) link motivational peer relationships with positive teacher-student relationships and higher school engagement. Relationships among students can vary in closeness and conflict. Additionally, positive (e.g. helpful and motivational) and negative (e.g. conflictual) relationships among children have been seen to yield different connections to achievement in school and relationships with teachers.

Effects of Teacher–Student Relationships and Children’s Friendships on Academic Success

Each of the factors that are put together to make a teacher–student relationship are linked to children’s academic success. Positive teacher–student relationships link to positive learning outcomes for children, whereas negative teacher–student relationships are related to detrimental educational experiences for children (Howes, Hamilton, & Matheson, 1994). Likewise, children with close friendships link to positive school engagement and children with conflictual friendships link to more negative school engagement (Howes et al., 1994).

Blankenmeyer, Flannery, and Vazsonyi (2002) explained both short-term and long-term effects for children stemming from negative teacher–child relationships. Students who experienced negative teacher–student relationships in kindergarten demonstrated dependent behaviors as well as a lack of self-directed behaviors (Blankenmeyer et al., 2002). This can be a problem for the students as they continue through school.

As students are beginning elementary school, the ability to work independently and demonstrate self-directed learning are crucial for students’ academic success. Cultivating a negative teacher–student relationship hinders a young child’s learning and success in education. In kindergarten and first grade, these children demonstrate difficulty in controlling their emotions and behaviors (Blankenmeyer et al., 2002). As with adults, it is difficult for children to focus on important school content when they are having difficulty controlling their feelings and focusing their attention. Upon entering second grade, the students then have higher conflict with their teachers (Birch & Ladd, 1998) and demonstrate higher dependency on their teachers during learning activities (Blankenmeyer et al., 2002). Throughout elementary school, these qualities may evolve into a general dislike of school (Birch & Ladd, 1998), a risk of engaging in delinquent behavior (Blankenmeyer et al., 2002), and an increased likeliness to avoid

participating in learning activities (Pianta & Stuhlman, 2004). Clearly, there is an importance for working to avoid negative teacher–student relationships.

Unlike negative teacher–student relationships, positive relationships between children and their teachers and children with their peers are related to positive academic achievement. Students who have positive relationships with their teachers in kindergarten move on through the next two years of their schooling with independent worker qualities (Valiente et al., 2012). Students who have positive relationships with their peers feel a sense of relatedness in school, and in turn perform better academically (Furrer & Skinner, 2003). In a study completed by Pianta and Stuhlman (2004), students with higher teacher-rated, teacher–student relationships scored higher achievement scores than the students who had low teacher-rated, teacher–student relationships. In a study of peer relationships by Ladd, Kochenderfer and Coleman (1996), children adjusted to school better when they had more positively rated friendships.

Teachers who promote positive teacher–student relationships with children engage the students in more positive learning experiences (Howes et al., 1994). Research suggests that these positive behaviors promoted by teachers include motivation of students, praise, affiliation with students, and less reprimanding in the classroom (Spilt, et al., 2012). Likewise, students who do not receive positive teacher–student relationships have difficulty with achieving academic success. As with positive teacher–student relationships, children who engage in more positive friendships with their peers have the opportunity for higher achievement scores due to their higher levels of engagement in school.

Summary

Positive teacher–student relationships and positive children’s friendships are crucial for students to achieve success academically. The literature suggests that there is a strong importance for teachers to work on creating and curating these positive relationships with students, due to the negative academic outcomes that are associated with negative teacher–student relationships and children’s friendships.

The impact of teacher–student relationships on academic success does show to be correlated throughout a child’s education. Likewise, children’s friendships yield an importance on their educational outcomes as well. Additionally, although the impact of teacher–student relationships on student academic achievement has been studied, there needs to be a focused description of which areas of learning are correlated with the teacher–student relationship and children’s friendships. This would give educators a more defined view as to what components of students’ academic achievement are most detrimental in relation to the teacher–child relationship and children’s friendships. Additionally, in order to support teachers and students, it is important to research these variables in young children at the beginning of their school careers. This study will aim to support this need in the literature, by analyzing data about teacher–student relationships, children’s friendship, reading scores and writing scores, in kindergarten and first grade students.

Research Questions

The following research questions will guide this study:

- To what extent are reading scores related to teacher–student relationships and children’s friendships?
- To what extent are writing scores related to teacher–student relationships and children’s friendships?

- To what extent are teacher–student relationships related to children’s friendships?
- To what extent are reading scores related to writing scores?

The existing literature suggests that positive teacher–student relationships yield higher academic achievement, and that positive peer to peer relationships encourage higher school engagement. Based on the previous literature, my hypothesis is that all of the variables will be positively related to one another.

METHODOLOGY

The purpose of this study was to evaluate the extent to which teacher–student relationships, children’s friendship, writing scores and reading scores are related to one another. Presented in this section of the methodology will be: (a) research design, (b) research site, (c) participants, (d) data collection procedures, (e) measures, and (f) data analysis.

Research Design

This study was a correlational research design. Mills and Gay (2016) explain that “correlational research involves collecting data to determine whether, and to what degree, a relationship exists between two or more quantifiable variables” (p. 215). In this study, the variables studied include teacher–student relationships from the teacher’s perspective, children’s friendships, reading scores and writing scores. Multiple instruments were used for determining the possible relations between teacher–student relationships, children’s friendship, reading and writing scores in young children. Teacher–student relationships were assessed via teachers completing the short form of the Student Teacher Relationships Scale (STRS) that reports on their perception of their relationship with each student in their classroom (see appendix A) (Pianta, 1992). Children’s perceptions of friendship were collected from the adapted version of the Friendship Features Interview for Young Children (FFIYC) (see Appendix B) (Ladd et al., 1996). Students’ reading scores were determined by using the Developmental Reading Assessment, 2nd Edition PLUS (DRA2) (Beaver & Carter, 2018). Lastly, students’ writing scores were found by using the district required Writing Prompt assessment and accompanying scoring guides. All measures are further described below.

This study was completed at an elementary school in a small Midwestern city. The participants of the study include participating teachers and their participating kindergarten or first grade students. Students in the class of a non-participating teacher were not participants in the study. For this reason, consent from teachers was gained (see Appendix C) before requesting consent from any parents/guardians (see Appendix D) or student assent (see Appendix E).

Research Site

The study took place at an elementary school in a small Midwestern City. The elementary school in this study is part of the largest school district in the state. In the 2017-2018 school year, 347 students were enrolled at the elementary school, including 67 kindergarteners and 64 first graders. According to state data, in 2017 the site was made up of 88% White students. In 2017, 26% of the students enrolled at the site were on free and reduced lunch.

Participants

The participants came from a convenience sample located at the researcher's place of work as a first grade teacher. The participants included four female teachers and their participating kindergarten and first grade students, which yielded 83 students as participants in the study. This study focused on the relationship between teacher-student relationships, friendship and achievement among young children, which required a large population of students in younger elementary grades. In an effort to reduce the work requested by the teachers for this study, the school counselor was asked to be a part of the research team and to help with data collection.

Data Collection Procedures

Prior to completing the study, permission was obtained from the Missouri State University Institutional Review Board (see Appendix F) and the school district. Data in this study were collected in multiple ways. Each participating teacher was given a unique ID number and each participating student used their classroom-given ID number in order to ensure all data collected were tied to the individual and appropriate teacher.

Each participating teacher filled out the adapted short form STRS on each participating student in their class one time at the end of the school year (Pianta, 1992). The students were not involved in participating in the completion of this scale. Each participating teacher placed their personal code, provided by the study, on each of the STRS forms, as well as each student's classroom-given number ID. The scales were delivered to each teacher and the teachers were given one week in time to return the results to the researcher. Upon receiving the completed scales from the teachers, the researcher then scored the seven closeness and eight conflict items of the teacher–student relationship, on the 1-5 scale.

The children's friendship was assessed by the adapted oral survey version of the FFIYC (Ladd et al., 1996). The FFIYC was completed during one counselor session for each participating class, administered by the school counselor in an effort to relieve the classroom teachers from more tasks during the study. The counselor instructed the students to write a classroom specific numerical code on their paper along with their individual classroom-given number ID. The counselor then read each of the survey items aloud. Upon completion of the surveys in each class, the school counselor gave the surveys to the classroom teacher, to combine with the other artifacts specific to their class. Upon receiving the completed scales from the teachers, the researcher then scored each of the subscales to determine the children's friendship.

Students' reading achievement was scored by using the DRA2, at the end of the fourth quarter of school as required by the school district. Participating teachers administered the DRA2 to students and then made a list of their participating students' DRA2 scores. The participating students were listed by their individual classroom-given number IDs.

Lastly, students' writing achievement was determined by administering a district-required Writing Prompt assessment at the end of the fourth quarter of school. Teachers scored their students' writing using the district-provided writing rubric.

Measures

Teacher–student relationships were assessed via teacher-report, using the STRS short form (Pianta, 1992). Children’s perceptions of friendship were collected from the FFIYC (Ladd et al., 1996). Students’ reading scores were determined by using the DRA2 (Beaver & Carter, 2018). Lastly, students’ writing scores were found by using the district required Writing Prompt assessment and accompanying scoring guides.

STRS-Short Form. During the study, teachers completed the STRS on each student in their classroom, showing their “closeness” and “conflict” scale scores of their relationship with their students (Pianta, 1992). The STRS is comprised of fifteen items that the teachers scored on a number scale of “1” through “5,” one meaning “Definitely does not apply” and five meaning “Definitely applies.” Questions asked include “closeness” statements such as “I share an affectionate, warm relationship with this child” and “conflict” statements such as “Dealing with this child drains my energy” (Pianta, 1992). The researcher used the STRS-Short Form scoring guide to determine the “closeness” and “conflict” scores for each student, with a possible maximum “closeness” score of 35 and a possible maximum “conflict” score of 40 (Pianta, 1992).

In a validity study, this instrument, with each of its subscales of “closeness” and “conflict” were correlated to the long version (closeness, $r = 0.94$; conflict, $r = 0.98$) and found as valid and reliable for use on students in elementary school (Settanni, Longobardi, Sclavo, Fraire, & Prino, 2015).

FFIYC. Students completed an adapted form of the FFIYC to indicate their perceived friendship with their peers (Ladd et al., 1996). The FFIYC is designed to be administered in a one on one setting with young children (Ladd et al., 1996). This instrument was studied in the use with young children and was found to provide reliable information in regards to students’ feelings of friendship (Ladd et al., 1996). For this study, the FFIYC was administered in a whole group survey manner. The students answered statements on three subscales with the answers “yes,” “no” and “sometimes.” The three subscales of the FFIYC used in this study include friendship satisfaction, aid, and conflict. Although the FFIYC was adjusted from a one on one interview model to a whole class survey model, questions were adjusted to better fit the “yes,” “no” and “sometimes” answer choices as well as the whole class survey model. For example, the question “How much do you like being friends with (friend's name)?” was changed to “Do you like being friends with your closest friends?” (Ladd et al., 1996). Students answered the survey by listening to the counselor read aloud each item as they circled their answer. The counselor circulated the room to assure understanding.

As instructed by the developers of the FFIYC, the researcher used the FFIYC scoring procedures to determine the score of each subscale on each completed survey (Ladd et al., 1996). When scoring the survey, “yes”=2, “sometimes”=1 and “no”=0. However, the sixth question on the FFIYC survey, “Do your friends say nice things to you?” was scored with a reversed score due to the wording of the question. Each subscale could be scored on a range of “0” through “8.”

The Friendship Conflict subscale is read in a reversed direction from the other subscales, therefore a low friendship conflict score would read as a positive result.

DRA2. The DRA2 is the research-based reading assessment used in many school districts, to assess students' independent reading levels (Beaver & Carter, 2018). DRA2 scores are listed on a scale of levels in way of progression that is not easily known without knowledge of the DRA2 assessment. The scale of levels progresses in the following way: Level A, 1, 2, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20, 24, 28, 30, 34, 38, 40, and so on to levels much higher than kindergarten or first grade achievement. In an effort to relay the information of students' reading achievement as scored by the DRA2 assessment, the researcher recoded the DRA2 levels in a way that is more easily understood by those not familiar with DRA2 reading levels. End of the year kindergarten DRA2 scores should be a level 4 or above. End of the year first grade DRA2 scores should be a level 16 or above. Therefore, students scoring level 4 in kindergarten and level 16 in first grade had their score set to "0". Each level below level 4 for kindergarten or level 16 for first grade was set as "-1," "-2," "-3" and so on, indicating that many levels below grade level. Likewise, each level above level 4 for kindergarten or level 16 for first grade was set as "1," "2," "3" and so on, indicating that many levels above grade level. This threshold allows for data to be categorized at certain levels below, at grade level, and above.

Writing. On the writing rubrics each student received a proficiency score of a 1, 2 or 3 for a number of different criteria, as well as overall. A score of a 3 means that the student is "on grade level," a score of a 2 means the student is "approaching grade level" and a score of a 1 means that the student is "below grade level." The researcher calculated a percentage score for each student based on the number of points received out of the total number possible on that grade level writing rubric. Although each grade level had different total raw scores, the

percentage scores allowed for the data from each grade level to be reported on a more common and specific basis.

Data were combined into a single de-identified electronic data file. The data were analyzed at the classroom level, grade level and school level. Individual data were not reported.

Data Analysis

As a correlational study, the strength of the association was measured between two variables at a time. The correlations were separately explored between the variables reported on the FFIYC and the teacher reports of teacher–student relationships. The variables reported from the subscales used from the FFIYC included friendship satisfaction, aid and conflict. The correlations between teacher–student relationships and writing scores as well as reading scores were also explored. Additionally, the correlations between the variables reported from the FFIYC and writing scores and reading scores were examined. Regression models were used to analyze multiple factors at once, such as the effect of teacher-student relationships and friendship quality together on reading or writing scores. Finally, the correlations between reading and writing achievement were studied. The data were analyzed at the classroom level, grade level and school level, using Microsoft Excel 2013.

RESULTS

The purpose of this correlational study was to evaluate the extent to which teacher–student relationships, children’s friendship, writing scores and reading scores are related to one another. The results of this study are presented below.

Descriptive Statistics

Table 1 shows the ranges, means and standard deviations for each of the variables. DRA2 scores were entered by setting a threshold level with “0” meaning “on grade level.” “-1” would be read as one level below grade level, whereas “1” would read as one level above grade level. Writing scores were graded by a rubric, ending in a percentage score. Teacher–student relationship reports and children’s friendship scores were entered by scales starting at “0.” The data in the table below will be explained thoroughly in the sections pertaining to each variable.

The descriptive results show that the 83 participating kindergarten and first grade students had a mean DRA2 score of 1.94, showing that on average, the students’ end of the year reading scores were almost two levels above grade level. Participating students’ end of the year writing scores were averaged at 84.41%, with 80% and above categorized as “on grade level”.

From the results of the FFIYC survey, the participating students had an average reported score of 5.45 for friendship aid (i.e. nearing high feelings of friendship aid). The average reported score for friendship conflict was 3.43 (i.e. nearing low feelings of friendship conflict). The average reported score for friendship satisfaction was 6.42 (i.e. high feelings of friendship satisfaction). On the FFIYC survey, friendship conflict statements were written in a reversed

approach. For this reason, on eight point scales, although higher friendship aid and friendship satisfaction scores were read as positive, a lower friendship conflict score was read as positive.

Table 1. Descriptive Statistics of Relationship and Academic Variables. Data are divided by minimum scores, maximum scores, mean scores, and the standard deviations for all participants, kindergarten only and first grade only.

Variables	Minimum	Maximum	Mean	S.D.
All Participants (n=83)				
DRA2	-8	8	1.94	2.74
Writing	23	100	84.41	17.74
FFIYC Aid	1	8	5.45	2.00
FFIYC Conflict	0	8	3.43	2.33
FFIYC Friendship Satisfaction	2	8	6.42	1.70
STRS Closeness	18	35	31.01	4.56
STRS Conflict	8	36	13.48	7.45
Kindergarten Participants (n=32)				
DRA2	-4	9	3.19	2.71
Writing	44	100	91.44	12.18
FFIYC Aid	1	8	5.13	1.83
FFIYC Conflict	1	8	3.06	2.51
FFIYC Friendship Satisfaction	3	8	6.44	1.41
STRS Closeness	21	35	31.66	3.72
STRS Conflict	8	30	11.25	6.43
First Grade Participants only (n=51)				
DRA2	-8	5	1.16	2.52
Writing	23	100	80	19.31
FFIYC Aid	1	8	5.65	2.09
FFIYC Conflict	0	8	3.67	2.20
FFIYC Friendship Satisfaction	2	8	6.41	1.87
STRS Closeness	18	35	30.61	5.01
STRS Conflict	8	36	14.88	7.76

From the results of the STRS short form, there was an average reported score of 31.01 for teacher–student closeness on a 35-point scale. An average score of 13.48 was reported for teacher–student conflict on a 40-point scale.

The range of DRA2 scores was 16 with a minimum score of eight levels below grade level and the maximum score of eight levels above grade level. Writing scores began at a

minimum score of 23% and came to a maximum score of 100%. FFIYC Aid had a minimum score of one and a maximum score of eight. FFIYC Conflict had a minimum score of zero and a maximum score of eight. FFIYC Friendship Satisfaction had a minimum score of two and a maximum score of eight. Teachers scoring their closeness with students had a minimum score of 18 and a maximum score of 35. Lastly, a minimum STRS conflict score of eight and a maximum score of 36 were reported.

Across Grade Levels, Kindergarten and First Grade Correlations

Correlations from the data across grade levels, as well as from kindergarten and first grade participants separately will be discussed below. Table 2 shows bivariate correlations relating to all of the data reported from this study. Regression models were used to analyze multiple factors at once, such as the effect of teacher–student relationships and friendship quality together on reading or writing scores. However, regression models did not show any significant interactions.

Reading Related to Teacher–Student Relationships and Children’s Friendships

Reading and teacher–student conflict resulted in a weak negative correlation ($r=-.30$, $p=.006$). However, when looking at the data separated by grade level, these correlations diverge.

A weak negative correlation was shown between reading and teacher–student conflict ($r=-.38$, $p=.03$). In contrast, a weak positive correlation between reading scores and teacher–student closeness was shown from first grade data ($r=.31$, $p=.03$), and no significant correlation was shown across the areas of reading and teacher–student conflict ($p=.3$).

Table 2. Correlations of Each Variable with All Participants. Data are divided by all participants, kindergarten only, and first grade only.

Variables	All n=83	K n=32	First n=51
DRA2 and Writing	0.62*	0.69*	0.55*
DRA2 and FFIYC Aid	0.06	-0.12	0.26*
DRA2 and FFIYC Conflict	-0.19	-0.26*	-0.08
DRA2 and FFIYC Friendship Satisfaction	0.16	0.09	0.21
DRA2 and STRS Closeness	0.22	-0.02	0.31*
DRA2 and STRS Conflict	-0.30*	-0.38*	-0.15
Writing and FFIYC Aid	0.11	-0.05	0.23
Writing and FFIYC Conflict	-0.37*	-0.58*	-0.26*
Writing and FFIYC Friendship Satisfaction	0.25*	0.23	0.26*
Writing and STRS Closeness	0.36*	0.24	0.38*
Writing and STRS Conflict	-0.42*	-0.77*	-0.25*
FFIYC Aid and STRS Closeness	0.26*	-0.08	0.43*
FFIYC Aid and STRS Conflict	-0.24	0.08	-0.44*
FFIYC Conflict and STRS Closeness	-0.46*	-0.54*	-0.42*
FFIYC Conflict and STRS Conflict	0.73*	0.79*	0.70*
FFIYC Friendship Satisfaction and STRS Closeness	0.32*	-0.04	0.44*
FFIYC Friendship Satisfaction and STRS Conflict	-0.43*	-0.11	-0.57*

Note. All = All participants in the study. K = Kindergarten participants only. First = First grade only.

* $p < .05$.

From this correlational data, it can be noted that there are slight correlations between both reading scores and teacher–student relationships. With the kindergarten participants, the data shows that when teacher–student conflict increases, reading scores decrease. With the first grade participants, the data shows that when reading scores increase, teacher–student closeness also increases. However, these correlations are not strong, and not consistent among all of the classrooms studied.

The correlations between reading scores and each of the three friendship subscales yield similar results to one another. When looking at the data from the participants as a whole, there were insignificant findings between reading scores and each of the three friendship subscales. However, the kindergarten and first grade participants’ data yielded one difference in the

relationships among the reading scores and two of the FFIYC subscales. A weak significant negative correlation between reading scores and friendship conflict was found when looking at the kindergarten participant's data ($r=-.26$, $p=.04$). Due to the reversed scored subscale, this data suggests that when kindergarten students' feelings of friendship conflict decrease, their reading scores increase. A weak positive correlation was also found between reading scores and friendship aid when looking at the first grade participant's data ($r=.26$, $p=.04$). This data suggests that when first grade students' feelings of friendship aid increase, their reading scores also increase. From the participants as a whole, reading scores and children's friendships do not have significant correlations to one another.

Writing Related to Teacher–Student Relationships and Children's Friendships

Overall, the data with writing scores do not yield many strong correlations to the relationship and friendship variables. However, there are more significant correlations between these variables than the reading scores showed.

Writing scores and teacher–student closeness show an overall weak positive correlation when looking at the data collected from all of the participants ($r=.36$, $p<.001$). When breaking the data down by grade level, there were insignificant findings between writing scores and teacher–student relationships in kindergarten ($p>.05$). However, a weak positive correlation was shown in first grade across the areas of writing and teacher–student closeness ($r=.38$, $p=.006$). When looking at the data, it can be seen that when teacher–student closeness increases, writing scores also increase.

Writing scores and teacher–conflict show an overall weak negative correlation ($r=-.42$, $p<.001$), explaining that when teacher–student conflict increases, writing scores decrease. Data

from the first grade participants show an agreement with this result, and data from kindergarten participants yield a strong negative correlation between writing scores and teacher–student conflict ($r=-.77, p<.001$).

When analyzing writing scores and children’s friendships, scores differ across the three subscales. Data from writing scores and friendship conflict show a negative correlation between the two variables overall ($p<.001$), and with kindergarten ($p<.001$) and first grade ($p<.05$) separately. Overall and first grade data show that these variables have a weak negative correlation ($r>-.25$). A moderate negative correlation between these variables of writing scores and friendship conflict was a result of the kindergarten data ($r=-.58$). From this correlational data, it can be noted that students who reported feelings of high conflict with their friends also had lower writing scores.

Finally, the overall correlation between writing scores and children’s friendship satisfaction was positive, but weak ($r=.25, p=.03$). First grade participants’ results agree with these findings. As a whole, it can be noted that when students’ feelings of friendship satisfaction were higher, their writing scores were also higher, only for first grade students.

Teacher–Student Relationships Related to Children’s Friendships

Teacher–student relationships and children’s friendships were analyzed to find possible relations between each of the subscales. Overall, many of these variable combinations showed significant correlations.

Friendship aid showed an overall significant weak positive correlation to teacher–student closeness ($r=.26, p=.02$). Correlational results from first grade participants mirrored the overall

results. Friendship aid and teacher–student conflict resulted in a significant weak negative correlation in first grade ($r=-.44$, $p=.001$).

Data on students' feelings of friendship conflict indicated a negative correlation with teacher–student closeness ($r=-.46$, $p<.001$). Interestingly, high reported cases of friendship conflict also resulted in high reported cases of teacher–student conflict. Strong positive correlations between children's friendship conflict and teacher–student conflict occurred with the overall, kindergarten and first grade data ($r>.70$, $p<.001$).

Overall, children's friendship satisfaction and teacher–student closeness resulted in a weak positive correlation ($r=.32$, $p=.004$), in agreement with the results from the first grade participants' data ($r=.44$, $p=.001$). Children's friendship satisfaction and teacher–student conflict resulted in an overall weak negative correlation ($r=-.43$, $p<.001$), and a moderately weak correlation from the first grade participants' data ($r=-.57$, $p<.001$).

Reading Related to Writing

From analyzing the data from reading scores and writing scores, it became evident that reading scores and writing scores are positively correlated to one another. Overall, reading scores were moderately positively correlated to writing scores ($r=.62$, $p<.001$).

This result was consistent when looking at the first grade scores ($r=.55$, $p<.001$), and kindergarten actually showed strong positive correlations between reading and writing ($r=.69$, $p<.001$). From this analysis, it can be noted that as reading scores increase, writing scores also increase.

DISCUSSION

The purpose of this study was to evaluate the extent to which teacher–student relationships, children’s friendship, writing scores and reading scores are related to one another. From the correlational data analyses, areas of relationships and academic achievement were studied. When analyzing data between teacher–student relationships and writing scores, significant correlations were found both with teacher–student closeness and conflict. Children’s friendship and academic achievement did not have many significant correlations, but did result in some. Overall, children’s friendship and writing achievement did relate significantly in regards to friendship conflict and friendship satisfaction. When looking at the relationship areas studied, the data showed that teacher–student relationships showed many significant correlations to children’s friendships. Lastly, the academic areas of reading and writing were positively and significantly correlated to one another.

When considering the correlational differences between grade levels, and understanding that academic achievement overall averaged at or above grade level, it is important to also understand that the relationship variables had a smaller range in kindergarten than they did in first grade. This information reveals that the relationship data in kindergarten are less varied than the data in first grade. This condensed distribution of data suggests that relationships in kindergarten are not developing in the same way that they are in first grade. This suggests that kindergarten students may developmentally take longer to build these relationships with their peers and teachers than students in first grade.

Although the correlational data differed among the grade levels, the mean scores of teacher–student relationships and children’s friendships from both grade levels were similar to

one another. Teacher–student closeness mean scores showed overall closeness between teachers and students. Teacher–student conflict mean scores showed overall low conflict. Although teacher–student relationship mean scores were relatively close to one another, children’s friendship scores were also close, but slightly more widespread. Children’s friendship aid was overall above neutral, nearing high feelings of friendship aid among children. Children’s friendship conflict was low to neutral, showing some feelings of conflict among children. Lastly, children’s friendship satisfaction was high with mean scores very close to one another, revealing high feelings of friendship satisfaction among children.

Another point of interest came from comparing this study to previous studies completed with the short form of the STRS. Many studies used the short form version looking at both teacher–student closeness and conflict as separate subscales. From the many studies considered, teacher–student closeness tends to be scored relatively high, as with the participants in this study. Likewise, teacher–student conflict tends to be scored relatively low. This suggests that teachers tend to view relationships with their students positively, which is confirmed in this data.

From the analyses of the data, answers to the research questions emerged. These answers are described in the following paragraphs.

To what extent are teacher–student relationships related to children’s friendships?

The correlational analyses showed that teacher–student relationships and children’s friendships are correlated significantly. Friendship aid showed an overall weak positive correlation to teacher–student closeness. Therefore, as feelings of friendship aid increase in students, teacher–student closeness also increases. Feelings of children’s friendship conflict negatively and significantly correlated to teacher–student closeness, and had higher conflict scores associated with lower teacher–student closeness scores. Likewise, friendship conflict associated positively

to teacher–student conflict. Correlations between friendship satisfaction and teacher–student relationships were weak. Students with high friendship satisfaction characteristically had high teacher–student closeness, and students who had low friendship satisfaction typically had high teacher–student conflict.

These outcomes from the study align with the findings from previous literature, linking positive peer relationships to positive teacher–student relationships and higher school engagement (Hosan & Hoglund, 2017). The relationships between teachers and students and students’ relationships with their peers are noticeably related to one another. However, it is interesting to see the difference between the results in the kindergarten and first grade levels. Out of the six pairs of correlational analyses relating to relationships in the classroom, all six correlations were significant in first grade, although only two of the correlations were significant in kindergarten. Both of the significant correlations in kindergarten regarding relationships included the friendship conflict subscale along with both teacher–student closeness and teacher–student conflict. This information continues the assumption that kindergarten students’ relationship may develop at a different rate than in higher grade levels, due to the inconsistency of the correlations regarding relationships in kindergarten.

To what extent are reading scores related to teacher–student relationships and children’s friendships? Reading scores were found to have few significant correlations to both teacher–student relationships and children’s friendships, all of which were weak. Reading and teacher–student closeness only resulted in a weak positive correlation in first grade, although reading and teacher–student conflict only resulted in weak negative correlations overall and in kindergarten. Reading and friendship conflict had a weak negative correlation in kindergarten,

although reading and friendship aid had a weak positive correlation in first grade. From the results, it appears that reading is not related to teacher–student relationships or friendships.

This is where a limitation of the study seems to come into effect. The site of the study predominately yields high achievement scores. In this study, it was found that the mean reading score was two levels above grade level. The correlational data in this area may differ at schools where reading scores are more varied, or predominately low. Due to this limitation in the current study, the data are not representative across all schools.

To what extent are writing scores related to teacher–student relationships and children’s friendships? Writing scores are related significantly to teacher–student relationships. Additionally, writing scores are related significantly to children’s friendship conflict, and children’s friendship satisfaction.

When analyzing teacher–student relationships and writing scores, it was evident that these relationships are related to writing achievement, although the correlations were weak. As the closeness factor of the teacher–student relationship increased, so did students’ writing scores, both overall and in first grade. Likewise, as the conflict factor of the teacher–student relationship increased, students’ writing scores decreased. This finding was consistent across each grade level. Surprisingly, only the conflict factor of the teacher–student relationship was only significantly correlated, negatively and strongly, to writing achievement in kindergarten.

As children’s friendship conflict increased, it was seen that their writing scores decreased, and vice versa. Additionally, as children’s friendship satisfaction increased, their writing scores also increased. In the literature, it was found that children who engage in more positive friendships with their peers also have higher achievement scores (Bakadorova & Raufelder, 2017). This is a result of more positive friendships relating to higher levels of

engagement in school (Hosan & Hoglund, 2017). From this data relating to writing achievement and the reviewed literature, it is clear that friendships do correlate to higher writing scores.

To what extent are reading scores related to writing scores? Across each grade level, and when looking at overall correlations, reading scores were significantly and positively correlated to writing scores. In the data, it was seen that high reading scores were typically correlated to high writing scores, and low reading scores were typically correlated to low writing scores.

Moderately positive correlations were found from the overall and first grade data, which does show that these correlations were not always positive. However, strong positive correlations were found from the kindergarten data.

Conclusions

The findings of this study, along with previous literature, open up the possibility of future research of relationships in the classroom and their impacts on younger elementary students. From the results and the reviewed literature, it is clear that positive relationships, both with teachers and peers, are typically related to higher academic scores. Nevertheless, rising from the correlational analyses came the conclusion that the grade levels of kindergarten and first grade do not equate in regards to relationships in the classroom correlating to the academic areas of reading and writing, as well the relationship variables to each other. Additionally, reading scores were not significantly correlated with relationships, which was the opposite of the researcher's predictions. Lastly, correlational analyses including the conflict subscales yielded results supportive of the reviewed literature. These conclusions listed will be described in the following paragraphs.

When analyzing each of the correlations in the study, it was found that first grade had 13 significant correlations among the 17 pairs of variables, although kindergarten had only seven. With first grade almost doubling the significant correlations that kindergarten had, this brings to attention that developmentally, it may take longer for kindergarten students to build relationships with their teachers and their peers. The reviewed literature suggests that both teacher–student relationships and children’s friendships are strongly correlated and impactful to students’ academic achievements (Furrer & Skinner, 2003; Valiente et al., 2012). However, as stated in the reviewed literature, it is important to remember that most of the previous studies were completed on grades above kindergarten.

The reviewed literature also suggests that dependent behaviors and lack of self-directed behaviors are the result of students who experience negative teacher–student relationships in the beginning of their school careers in kindergarten (Blankenmeyer et al., 2002). Although this study only found few correlational data between academics and relationships in kindergarten, the reviewed literature expresses the need for building these relationships starting in kindergarten.

In the reviewed literature, it was suggested that positive learning outcomes for children are linked to positive teacher–student relationships (Howes et al., 1994). Additionally, it was proposed in the reviewed literature that positive peer relationships result in positive outcomes for students’ academics (Furrer & Skinner, 2003). Although the overall results of this study showed that writing significantly correlated to all but one relationship variable, reading only had one significant correlation being a weak negative correlation to teacher–student conflict. Therefore, there was not enough variability to find results between in these variables. As this result did not match the findings of the reviewed literature, the limitations of this study were examined to find a possible reasoning for why this study resulted in the way that it did, when involving reading

scores and relationships. As mentioned previously, the high average report of reading achievement at this site suggests that variables not researched in this study are contributing to high levels of reading performance. This trend across the participating students in this study could have skewed the correlational results, whereas a different site could have rendered different correlational results between reading scores and relationships.

Lastly, conflict between teachers and students and also conflict between peers stood out as factors that were correlated with many of the other variables. The reviewed literature suggests that negative teacher–student relationships are related to negative educational experiences for children, and that children with conflictual friendships link to more negative school engagement (Howes, Hamilton, & Matheson, 1994). Teacher–student conflict significantly correlated to every variable but one in the overall data. Although the literature expressed the importance of curating positive teacher–student relationships and children’s friendships, the results of this study show that it may be even more important to curb conflictual relationships in the classroom. Although this study did not find causation of the lower academic scores or lower rated relationships, the correlation between the two are clear.

Limitations

As with most studies, limitations were present. This sample size of this study was limited to two grade levels of students in one school. A different group of students could have rendered different correlational results. Additionally, the site of the study predominately yields high achievement scores. In this study, it was found that the mean reading score was two levels above grade level. At this specific site, it appears that factors not researched in this study are contributing to consistently high reading achievement. Another limitation is that the

instrumentation was only completed on and by participants in the study. Increasing the number of participants could have changed the overall and grade level correlations, giving different results. Lastly, reading and writing scores were scored using district and research–based scoring guides. However, each teacher may vary in their scoring behaviors.

Recommendations for Future Research

The findings of this study set the baseline for multiple possible areas of future study. From the findings of this study, recommendations for future study were made.

The study’s findings can be used to better educate teachers about the importance of placing a focus not only on academics, but also on the development and maintenance of positive relationships with their students and among peers in the classroom. To be effective, research should be done to find specific ways that these positive relationships can be cultivated and sustained in the classroom. Additionally, although this study researched correlations between the variables in the study, causality cannot be inferred from correlational data. To best educate teachers about the importance of relationships in the classroom, studies focusing on the effects of both teacher–student relationships and children’s friendships would be valuable.

A beneficial addition to this study would be to add the variables of gender, ethnicity and income. By adding these variables to the research, more significant correlations and possibly regression models, could be studied. The addition of these variables would be beneficial to teachers and schools when looking for trends in achievement.

As mentioned previously, the site of this study consistently produces high achievement among the majority of their students. Completing this identical study in different classes or schools with more variability would provide the opportunity for researchers to compare the

results and findings of the correlational data between sites that typically differ in overall achievement levels.

In conclusion, an importance should be placed on relationships in the classroom and on academic success, as the two are significantly correlated to one another. To best benefit teachers and students, continuation of research in this area is recommended in conjunction with carrying out practices that match the findings of this study.

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APPENDICES

Appendix A. Student–Teacher Relationship Scale Short-Form

Robert C. Pianta

Child: _____ Teacher: _____ Grade: _____

Please reflect on the degree to which each of the following statements currently applies to your relationship with this child. Using the scale below, circle the appropriate number for each item.

Definitely does not apply 1	Not really 2	Neutral, not sure 3	Applies somewhat 4	Definitely applies 5
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1.	I share an affectionate, warm relationship with this child.	1	2	3	4	5
2.	This child and I always seem to be struggling with each other.	1	2	3	4	5
3.	If upset, this child will seek comfort from me.	1	2	3	4	5
4.	This child is uncomfortable with physical affection or touch from me.	1	2	3	4	5
5.	This child values his/her relationship with me.	1	2	3	4	5
6.	When I praise this child, he/she beams with pride.	1	2	3	4	5
7.	This child spontaneously shares information about himself/herself.	1	2	3	4	5
8.	This child easily becomes angry with me.	1	2	3	4	5
9.	It is easy to be in tune with what this child is feeling.	1	2	3	4	5
10.	This child remains angry or is resistant after being disciplined.	1	2	3	4	5
11.	Dealing with this child drains my energy	1	2	3	4	5
12.	When this child is in a bad mood, I know we're in for a long and difficult day.	1	2	3	4	5
13.	This child's feelings toward me can be unpredictable or can change suddenly.	1	2	3	4	5
14.	This child is sneaky or manipulative with me.	1	2	3	4	5
15.	This child openly shares his/her feelings and experiences with me.	1	2	3	4	5

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SECTION A. Teacher/Care Provider Relationship With the Child

Below is a series of statements about your relationship with this child. For each statement, please circle the number of the category that most applies to your relationship with him/her.

	Definitely Does Not Apply	Not Really	Neutral, Not Sure	Applies Sometimes	Definitely Applies
1. I share an affectionate, warm relationship with this child.....	CL 1	2	3	4	5
2. This child and I always seem to be struggling with each other.....	CO 1	2	3	4	5
3. If upset, this child will seek comfort from me.....	CL 1	2	3	4	5
4. This child is uncomfortable with physical affection or touch from me.....	CO 1	2	3	4	5
5. This child values his/her relationship with me.....	CL 1	2	3	4	5
6. When I praise this child, he/she beams with pride.....	CL 1	2	3	4	5
7. This child spontaneously shares information about himself/herself.....	CL 1	2	3	4	5
8. This child easily becomes angry at me.....	CO 1	2	3	4	5
9. It is easy to be in tune with what this child is feeling.....	CL 1	2	3	4	5
10. This child remains angry or is resistant after being disciplined.....	CO 1	2	3	4	5
11. Dealing with this child drains my energy.....	CO 1	2	3	4	5
12. When this child is in a bad mood, I know we're in for a long and difficult day.....	CO 1	2	3	4	5
13. This child's feelings toward me can be unpredictable or can change suddenly.....	CO 1	2	3	4	5
14. This child is sneaky or manipulative with me.....	CO 1	2	3	4	5
15. This child openly shares his/her feelings and experiences with me.....	CL 1	2	3	4	5

CL = CLOSENESS
CO = CONFLICT

Appendix B. Friendship Features Interview for Young Children

Accompanies: Ladd, G. W., Kochenderfer, B. J. & Coleman, C. C. (1996). Friendship quality as a predictor of young children's early school adjustment. *Child Development*, 67, 1103-1118.

Administration Guide

General Instructions and Illustrative Examples:

1. Explain to the child what the interview will be about as illustrated below. Make sure that the students understand that there are no right or wrong answers, and they have the right to refuse to answer any question (a condition of child assent). Inform the children that all of their responses will be kept in confidence, and not shared with parents, or their friends.

Today I am here because Mrs. Ridder wants to find out about friendships among children your age, and I am going to help her by giving you this survey to take. So, I have some questions that I am asking a lot of kids about their friends. But before we start, I want you to know that this is not a test. There are no right or wrong answers. Mrs. Ridder just wants to know what you think. Your answers are private, and you will not be writing your name on your paper. Instead, I want you to write your classroom number and this number (repeat teacher's ID number) on your paper so that nobody knows who your paper belongs to. I will read the questions to you, let me know if I read too fast, or if you want me to read a question again, okay? And, if I ask you a question that you don't really want to answer, you don't have to. Just tell me, and we will go on to the next one.

2. Explain the response format and do an example item with the children for practice.

When I read a question, you would answer by circling yes, no, or sometimes. Let's do some together, and I'll show you what I mean. You are not going to write these on your paper. This is just practice, so think the answer in your head.

First, let's do some practice questions. Think about when you come to school in the morning.

- A. Does your mom bring you to school--yes, no, or sometimes?
- B. How about your Dad? Does your dad bring you to school--yes, no, or sometimes?
- C. Does a bus driver bring you to school--yes, no, or sometimes?
- D. Does your teacher bring you to school--yes, no, or sometimes?

Ask some students to answer aloud, to assure that students understand the answer format.

3. Begin the survey questions. Okay, now let's start with some questions about your closest friends. I want you to think about who your closest friends are. Everything you answer today will be about these close friends, and nobody else.

First, I'd like you to think about what things are like for you and your closest friends. Think about what you and your close friends are like on most days. Then, answer my questions yes, no, or sometimes.

Teacher Code: _____

Student ID# _____

Practice Questions

<u>QUESTION</u>	<u>RESPONSE FORMAT: CIRCLE ONE</u>		
A. Does your mom bring you to school?	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>
B. How about your Dad? Does your dad bring you to school?	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>
C. Does a bus driver bring you to school?	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>
C. Does your teacher bring you to school?	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>

The Friendship Features Interview for Young Children

<u>QUESTION</u>	<u>RESPONSE FORMAT: CIRCLE ONE</u>		
1. If a kid took something that was yours, would your friends tell them to give it back?	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>
2. Do you feel happy when you're with your friends?	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>
3. If your teacher yelled at you and it made you feel bad, would your friends make you feel better?	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>
4. Some friends say things that aren't so nice. Do your friends ever say they won't be your friend anymore?	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>
5. If kids were being mean to you, would your friends try to make them stop?	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>
6. Do your friends say nice things to you? (reverse scored)	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>
7. If some kids at school were teasing you, would your friends tell them to stop?	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>
8. Some friends boss each other around. Do your friends ever boss you around?	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>
9. Do you like being friends with your friends?	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>
10. Are your friends good friends to you?	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>
11. Some friends make fun of each other. Do your friends ever make fun of you?	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>
12. Are you glad that you're friends with your friends?	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>

Friendship Features Subscale items:

Aid: 1, 3, 5, 7

Conflict: 4, 6, 8, 11

Other Subscales:

Friendship Satisfaction: 2, 9, 10, 12

Adapted from The Friendship Features Interview for Young Children (Ladd et al., 1996).

Appendix C. Teacher Consent Form

Dear Teachers,

As a requirement for earning a master's degree in Early Childhood and Family Development, I am conducting a study with kindergarten and first grade classrooms at XXX to investigate what possible relationships exist among teacher-student relationships, students' friendship and their writing and reading scores.

I am writing to request your participation and permission to use data that I collect throughout this process, as explained below. I will report on the grade level in which the data came from, to compare data between kindergarten and first grade.

Your participation includes completing a Student-Teacher Relationship Scale (STRS) on each consented student in your classroom. The STRS is a scale that determines a "closeness" and "conflict" score between you and each of your participating students. I am asking you to use the short form version of the STRS, which is 15 items. When I tested filling out this form, it took me about 2 minutes to fill out one form. Your participation would also include compiling a list of your participating students' DRA2 scores and providing me with their scored end of the year Writing Prompt rubrics. If you choose to be in the study, you will not need to list your name on the STRS. You will also not list your students' names. Instead, you will create a personal code using your four digit birth month and birth date (example 0214). You will also use your students' classroom numbers for their number IDs in this study.

Your students will be completing a survey in Mrs. V's class over their friendship. Mrs. V will give your students your personal code to label their paper. They will also be writing their classroom number ID, rather than their name. In order for Mrs. V to assist students in correctly labeling their surveys, you will need to give Mrs. V your personal code and a list of your students' classroom number IDs. Mrs. V will give you the completed surveys to deliver to me. Mrs. V will also shred your class list containing your personal code and your students' classroom number IDs.

When delivering the forms and data to me, you will place each of the artifacts in a sealable folder that I will provide for you. You will put a "K" or a "1" on the folder, showing the grade level you teach, so that I can report on the comparisons between the data of kindergarten and first grade. You will place this folder in my school mailbox. Upon receiving the folder, I will recode your personal code and your students' classroom number IDs. Your original forms will then be shredded. This will eliminate any risk in the loss of privacy.

In the study, I will collect each student's end of year DRA2 scores, end of year scored writing rubrics, your completed STRS forms, and the students' completed surveys from Mrs. V. The STRS will be scored by me to determine your relationship with each student in your classroom. The principal has approved this study and you are free to email me at jridder@spsmail.org with any questions regarding your participation.

Again, the purpose of this study is to investigate what possible relationships exist among

teacher–student relationships, students’ friendship and their writing and reading scores. Benefits of this study include a better understanding of what variables impact student achievement and the possibility of better teaching practices for educators. Your participation in this study is completely confidential and your participation is voluntary. Please check the appropriate box below, sign and return the form.

- I give permission for my STRS data to be used in this study and I will complete the STRS on each student in my classroom. I will compile the completed STRS forms, a list of my students’ DRA2 scores, their scored writing rubrics and their completed friendship surveys. I will deliver these artifacts to Mrs. Ridder’s mailbox in a sealed folder that will be provided to me. I understand that I will receive a copy of this signed consent form. I have read the form and understand that my identity will be kept confidential.

- I do not wish to participate in this study.

Thank you for your consideration,

Jessica Ridder
jridder@spsmail.org

Participant’s Name Participant’s Signature

Date

Appendix D. Parent/Guardian Consent Form

Dear Parents,

My name is Jessica Ridder and I am a first grade teacher at XXX. As a requirement for earning a master's degree in Early Childhood and Family Development, I am conducting a study with the kindergarten and first grade classrooms at XXX to investigate possible relationships among teacher-student relationships, children's perceptions of friendship, writing scores and reading scores for young students. The principal has approved this study.

I am writing to request permission for your child to participate in this study. Participation involves collection of classroom reading and writing scores, teacher reports of the teacher-student relationship, and for your child to participate in a short survey. Students writing will continue to be assessed using the district provided rubrics. Students' reading levels will be assessed using the district provided DRA2 assessment kit. Each of these reading and writing assessments are part of the students' regular school work. The students will also participate in a short survey with our counselor, Mrs. V, during their regular counselor time. The survey will allow me to score their perceptions of friendship quality. Lastly, teachers will be using a scale that reports on their perception of their relationship with each student in their classroom. When I receive the surveys from students and the scales and academic scores from teachers, they will be coded so that I do not know whose forms I am looking at. I will not even know what classroom the data is coming from. I will know, and will report on, the grade level in which the data came from. The students' names will never be used in order to protect their identity.

The purpose of this study is to find about possible relationships teacher-student relationship, children's friendship, and reading and writing scores of young children. Benefits of this study include a better understanding of what variables impact student achievement and the possibility of better teaching practices for educators.

Your child's participation in this study is completely voluntary and their participation and data will be confidential, with the exception of from their classroom teacher. My use of data from your child is voluntary and your child's participation in the short survey is also voluntary. Please email me at jridder@spsmail.org with any questions regarding your child's participation. You may also call 523-5400 and ask to be connected to Mrs. Ridder's classroom between 1:30 and 2:30 P.M. You may also contact the principal investigator of this study, Dr. Sascha Mowrey at smowrey@missourstate.edu or by calling (417) 836-5984.

Please check the appropriate box below, sign and return the form.

- I give permission for my child's data to be used in this study and for my child to participate in the short survey with Mrs. V. I understand that I will receive a signed copy of this consent form. I have read the form and understand that my child's identity will be kept confidential.
- I do not give permission for my child's data to be included in the project or for my child to participate in the short survey with Mrs. V.

Student's Name Parent/Guardian's Signature

Date

Appendix E. Student Assent Form

Parents/Guardians: Please read this form aloud to your child.

Dear Students,

You are invited by Mrs. Ridder, one of the first grade teachers at XXX, to participate in a research study that she is doing with the kindergarten and first grade classes at XXX. Mrs. Ridder is asking if she can see your reading and writing scores. She is also asking you to take a survey about your friends in Mrs. V's class. Lastly, she is asking if your teacher can take a survey about the teacher-student relationship that you have. Mrs. Ridder will use all of this information in a paper that she is writing. You will not be writing your name on the survey you take and your teacher will not be writing your name on the forms that she gives to Mrs. Ridder. Your name will also not be listed with your reading and writing scores. Mrs. Ridder won't even know which class the group of information belongs to. Mrs. Ridder will know and will report on the grade level that the data came from. If you have any questions, you can ask Mrs. Ridder or you can have your parent or guardian ask Mrs. Ridder by emailing her at jridder@spsmail.org. If you do not want to be a part of the study now, you do not have to. You may choose to leave the study at any time.

Please sign your name at the bottom of the paper if you understand and agree to the following:

You were told about the study.

You were told that your information will be private.

You were told that you do not have to be in the study.

You were told that you can quit being in the study if you want to.

You were told that you can ask questions about the study.

You were told that Mrs. Ridder will write a paper using your scores if you choose to be in the study.

You were told that Mrs. Ridder will compare the data between kindergarten and first grade, in her paper.

You, _____ (student's name), want to be in the study.

Student's Signature Parent/Guardian's Signature

Date

Appendix F. Human Subjects IRB Approval

To: Sascha Mowrey
Childhood Ed & Fam Studies

RE: Notice of IRB Approval

Submission Type: Initial

Study #: IRB-FY2018-606

Study Title: Evaluating the Correlations Between Teacher–Student Relationships, Friendship, and Reading and Writing Achievement

Decision: Approved

Approval Date: April 25, 2018

Expiration Date: April 23, 2019

This submission has been approved by the Missouri State University Institutional Review Board (IRB) for the period indicated.

Federal regulations require that all research be reviewed at least annually. It is the Principal Investigator's responsibility to submit for renewal and obtain approval before the expiration date. You may not continue any research activity beyond the expiration date without IRB approval. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.

You are required to obtain IRB approval for any changes to any aspect of this study before they can be implemented. Should any adverse event or unanticipated problem involving risks to subjects or others occur it must be reported immediately to the IRB.

This study was reviewed in accordance with federal regulations governing human subjects research, including those found at 45 CFR 46 (Common Rule), 45 CFR 164 (HIPAA), 21 CFR 50 & 56 (FDA), and 40 CFR 26 (EPA), where applicable.

Researchers Associated with this Project:

PI: Sascha Mowrey

Co-PI:

Primary Contact: Jessica Ridder

Other Investigators: Joan Test, Meagan Dudley, Elizabeth King, Jessica Ridder