

## ABSTRACT

### THE EFFECTS OF PEER TUTORING ON THE APPROPRIATE SOCIAL INTERACTIONS OF CHILDREN LABELED AS BULLIES

Peer tutoring is a widely used school-based intervention that has been shown to improve academic skills, generate development of appropriate social skills, and enhance peer relations for both tutees and tutors. However, to date, there have not been investigations into the effects of peer tutoring on the social interactions and academic performance of individuals labeled as bullies by their teacher(s). This study was designed to determine if individuals labeled as bullies show more appropriate social interaction after serving as peer tutors for their less academically competent peers. The effectiveness of peer tutoring was assessed using a multiple baseline design across 3 students identified as bullies. Participants who served as tutees were identified via teacher referrals. Tutors were taught how to present curriculum, reinforce correct responding, and how to provide corrective feedback on the performance of the tutee. Data were collected on the social interactions of the tutors and the academic performance of the tutors and tutees. Results of direct observations indicated that appropriate social interactions and academic performance did not increase for tutors or tutees as a result of the peer tutoring intervention. However, subjective reports by the teacher revealed modest improvements for some of the participants.

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THE EFFECTS OF PEER TUTORING ON THE APPROPRIATE  
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Labeled as Bullies

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## Chapter 1

### INTRODUCTION

A bullying incident has been defined as the *act* of someone being “victimized when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more other students” (Olweus, 1993, p. 9). In the scientific literature, bullying is generally categorized into one of three types: direct bullying, indirect bullying, and verbal aggression (Crothers & Levinson, 2004; Harachi, Catalano, & Hawkins, 1999; Olweus). Direct bullying occurs when an individual openly attacks a victim, which may include physical contact or simply threatening movements. Indirect bullying refers to isolating and intentionally excluding a victim from a group and manipulating relationships and friendships to cause the victim emotional pain (Olweus). Verbal aggression refers to behaviors such as name-calling, shouting, verbally abusing, and accusing (Crothers & Levinson).

Recent research has demonstrated that students involved in bullying, either as victim or bully, can experience lifelong consequences, including poor psychological and social well-being. Victims tend to blame themselves and see themselves as social failures. Potential negative effects for bullying victims include physical and psychological distress, physical unwellness, and poor social adjustment (Rigby, 2003). Victims of bullies are at risk for developing depression, low self-esteem, and/or problems with initiating and maintaining intimate relationships (Crothers & Levinson, 2004; Olweus, 1993). There are possible negative outcomes for bullies as well, including maladjusted social skills and anti-social behavior. In addition, bullies are more likely to be involved in

domestic violence, criminality, and substance abuse (Crothers & Levinson; Olweus).

Bullying appears to be prevalent in schools. In a national study of bullying behavior in Norway, Olweus (1993) estimated that 15-20% of students in Norwegian primary and junior high schools were involved in bully/victim problems. Further, he found that 3% of students in Norway were bullied at least once per week. Olweus's data revealed that younger children were more at-risk of becoming victims, whereas older children who bullied others were less likely to use physical aggression and more likely to use indirect means to bully. Bullying was found to be most prominent during middle school. Gender differences were also observed when examining the methods used to engage in bullying. Boys tended to engage in a more direct form of bullying, whereas girls tended toward indirect forms of bullying, such as spreading rumors and excluding another student. Interestingly, bullies are more likely to be boys, as are their victims.

Harachi et al. (1999) reported there is no standard definition of bullying in the literature in the United States. However, at least nine states, including California, have anti-bullying laws in place. Although studies tend to refer to Olweus's work to give an estimate of the incidence and prevalence of bullying, there is a need to develop a common definition of bullying to facilitate comparisons of the extent and nature of bullying across different populations and settings. Current estimates suggest that 13% of a representative sample of 15,686 6<sup>th</sup> through 10<sup>th</sup> graders from across the US have been involved in bullying as a bully and another 10.6% report being bullied at some point in school, reflecting the varying definitions of bullying that exist (Nansel et al., 2001). Research also indicates that 69% of students believe schools respond poorly to

reports of bullying, and 90% of students feel that bullying will increase their likelihood of experiencing social, emotional, or academic problems (Bully Police USA, 2003). Research in the US has typically focused on direct forms of bullying, with victimization and aggressive behavior the most commonly studied dimensions (Perry, Kusal, & Perry, 1988).

Given the prevalence of bullying and the serious consequences associated with it, maintaining school environments where students feel safe and respected is necessary. Many researchers have explored various programs designed to reduce bullying (Limber, Nation, Tracy, Melton, & Flerx, 2004; Mahdavi & Smith, 2002; Meraviglia, Becker, Rosenbluth, Sanchez, & Robertson, 2003; Olweus, 1993; Smith, Sharp, Eslea, & Thompson, 2004; Stevens, Van Oost, & De Bourdeaudhuij, 2004). Strategies ranging from whole school intervention (Olweus) to individual interventions (Rigby, 2005) for the victim and the bully have been proposed. Unfortunately, empirical validation of recommended procedures has been lacking (e.g., Limber et al.; Ortega, Del Rey, & Mora-Merchan, 2004; Smith, Schneider, Smith, & Ananiadou, 2004). Furthermore, in those studies that have included empirical evaluation, assessments consisted primarily of self-report measures such as questionnaires given to the children (e.g., Olweus; Smith, Sharp et al.). Clearly, other outcome measures including behavioral observation are required to verify the effectiveness of intervention strategies. Observation of increase in positive social interaction following intervention would provide more compelling evidence of effectiveness.

Despite its focus on direct behavioral measurement and its mandate to address problems of social importance (Baer, Wolf, & Risley, 1968), the field of applied behavior analysis has not yet examined either causes or effective interventions for reducing bullying behavior. However, the behavioral literature

has provided some clues as to how this problem might be effectively addressed. Given the importance of promoting positive social interactions among students in schools, behavioral researchers have examined rather extensively the effects of peer tutoring as a strategy for facilitating not only improvements in academic behavior, but also the development of positive social skills (Cushing & Kennedy, 1997; Franca, Kerr, Reitz, & Lambert, 1990; Gumpel & Frank, 1999; Kamps, Barbetta, Leonard, & Delquadri, 1994).

The following literature review includes descriptions of past interventions that have been used in schools to reduce the occurrence of bullying as well as outcome measures used to attempt to validate the effectiveness of these interventions. In addition, peer tutoring will be examined as a strategy aimed at producing appropriate social and academic effects among students. This strategy's potential to increase appropriate social interactions between bullies and their peers will be highlighted as a potential way to reduce bullying behavior.

## Chapter 2

### LITERATURE REVIEW

Bullying is a prevailing problem that occurs for at least one of seven students in today's schools (Olweus, 1993). Victims of bullies, as well as the bullies themselves, suffer short- and long-term effects as they progress through their school years. Given growing concerns about the frequency of bullying and the need to eliminate it, a variety of interventions aimed at reducing the incidence of bullying have been developed (Eslea & Smith, 1998; Mahdavi & Smith, 2002; Smith, Schneider, et al., 2004; Smith, Sharp, et al., 2004). The majority of these approaches emphasize a school-wide approach to intervention, where the whole school community is made aware of the extent of bullying as well as the anti-bullying policies that will be implemented (Smith, Sharp, et al.). Although whole-school approaches provide individualized interventions for bullies and victims as needed, the main goal is to construct school policies that focus on sanctions and consequences that will come into effect if any form of bullying behavior occurs. Therefore, whole school approaches take a "no tolerance" stance while attempting to show bullies and their victims that help is available to resolve bullying problems.

#### Whole-School Intervention Approaches

Olweus (1993) demonstrated a 50% reduction in bullying behavior using a school-wide approach to intervention. The Bully/Victim program was conducted in the nationwide campaign against bullying and included all primary and secondary high schools in Norway. School-wide, classroom, and individual

components were developed to reduce or eliminate existing bully/victim problems and prevent new problems from developing. The assessment of bullying problems was conducted through student surveys (specifically the Bully/Victim Questionnaire), in which students were asked to report their perception about the extent of bully/victim problems in their school, the frequency at which teachers intervened and talked to the individuals involved in the problem, and the perceived reactions and attitudes taken by parents. Results indicated that 15% of the total students enrolled in Norwegian primary and secondary schools were involved in bully/victim problems. Specifically, victims comprised 9%, 7% claimed to be bullies, and about 2% reported being both victim and bully.

Intervention strategies included clear school-wide policies, classroom rules about bullying, and possible sanctions for bullying behavior. Regular class meetings were conducted to encourage discussions about problems occurring in class. Cooperative learning was a method used in classrooms to group students together to work on a common task. Serious talks with the bully about his/her participation in bullying and talks with the victims were individual level techniques implemented to combat bullying. In addition, the program sought to increase staff responsiveness to bullying and to improve parental awareness of the problem. Increases in staff responsiveness were evidenced by an increase in parent PTA meetings; an establishment of a "contact telephone" (school personnel listens to a parent/students who wants to discuss a bullying problem anonymously); improved supervision during lunch time, recess, and break periods; and quick and consistent intervening by the teachers and adults. Parental awareness and involvement in bullying behaviors increased through the use of discussion groups for parents of bullies and victims. The overall



effectiveness of the program was judged by obtaining student reports of being bullied and bullying others. In addition, the ratings of students, peers, and teachers were examined to measure perceptions regarding such factors as classroom discipline, positive attitudes toward school, and students' willingness to seek adult attention when dealing with bullying. Results indicated a marked improvement in classroom order and discipline. More positive social relationships, more positive attitudes toward schoolwork and the school, and an increase in student satisfaction with school life were reported.

An additional example of the school-wide approach is the Sheffield Project conducted in England from 1991 to 1993 (Smith, Sharp, et al., 2004). The Sheffield Project used a questionnaire similar to the one used by Olweus (1993) to pre-test levels of bullying in 16 primary schools and 7 secondary schools. Although the project developed whole school policies modeled after the Olweus Bullying Prevention Program, it differed in some respects. For example, curriculum-based strategies, making changes to playgrounds and lunch breaks, and direct work with pupils were used and distributed across the schools. Curriculum-based strategies involved incorporating videos, stories, and literature related to bullying in the curriculum. Changes to playgrounds and lunch breaks were introduced, and included training lunchtime supervisors, encouraging positive behaviors on the playground, building relationships between supervisors and pupils/teachers, and responding quickly to aggressive behavior. Direct work with pupils involved assertiveness training for victims of bullying, and peer counseling available for individuals involved in bullying problems. The "Method of Shared Concern," which involved the use of interviews and discussions with the individuals involved in bullying problems as victims or bullies, was used directly with bullies as a way to discuss bullying

incidents to reduce bullying behavior and encourage tolerance. The collection of quantitative and qualitative data from staff, pupil interviews, and parent questionnaires served as tools to monitor the actual process of change for each half term throughout the course of the project. A second survey served as a posttest of the extent of bullying as measured by a questionnaire 2 years after the first survey. Results between the first and second surveys for primary schools showed a significant increase in the students who had not been bullied, a decrease in the number of pupils being bullied, and a decrease in the number of students bullying others. Results for secondary schools showed a decrease in bystander behavior, a significant increase in pupils notifying an adult if they were being bullied, and improvements in the perceived role of adults in talking to bullies.

Within the United States, Limber et al. (2004) conducted an evaluation of a whole-school anti-bullying program implemented in South Carolina for children in middle schools. The intervention involved changes in the involvement by adults towards problems of bullying and firm consequences for bullying behavior. Some components of the intervention involved a Bullying Prevention Coordinating Committee, which supervised the implementation of the program, development of anti-bullying school rules, and reinforcement for prosocial behavior. Sanctions were used with bullies who broke school rules. Bullies lost certain privileges, or they had to be involved in individual discussions with school personnel and their parents. Individual discussions were the only intervention used to identify the effectiveness of this program on the behavior of the bullies. Although there were several similarities, this program integrated a few modified procedures not used in the Olweus program, such as the development of school-wide rules instead of class-wide rules and greater

involvement in bullying-prevention activities from the community. School-wide rules were thought to be more appropriate because American middle schools tend to have seven to eight different classes for each student, and this approach would make rules against bullying more likely to be consistent across classrooms. The South Carolina program focused on seven outcome variables to determine effectiveness in reducing bullying behavior: self-report bullying (the program found a decrease in students' reports of bullying after a 1-year follow-up); victimization (there was a decrease in boys' reports and a slight increase for girls'); isolation (there was a decrease in boys' self-reports of social isolation); perceptions of bystander engagement (there was a decrease in the incidence of bystander interventions in bullying behavior among boys and girls); adult responsiveness to bullying; and students' attitude toward bullying. Students involved in this intervention were surveyed at three different points in time using questionnaires. However, no outcome measures related to the behavior of the bully were reported.

#### Specific Intervention Strategies

Although addressing bullying as a whole school approach is essential, specific strategies aimed at improving bullies' inappropriate behaviors with their peers also are crucial. Rigby (2005) examined the Method of Shared Concern as a bullying intervention to address the bullying behaviors exhibited by the bully and the victim. This method was developed by Anatol Pikas as a way to encourage group involvement and a solution to bullying. It consists of individual interviews with students, as well as discussions with the suspected bully(s) and the victims, to raise the concern of bullying and the detrimental effects it can have on the victim. An interview with the suspected bullies is conducted first

followed by an interview with the victim. If there is a group of suspected bullies, a meeting with the rest of the group (the victim is possibly included) is conducted to discuss the problem. A final meeting is carried out to ensure that bullying will not continue to occur. This non-punitive approach has been used as an attempt to reduce bullying (Cross, Hall, Hamilton, Pintabona, & Erceg, 2004); however, Cross et al. did not show an overall reduction in bullying as a result of using this method.

Another specific prevention method that has been utilized to reduce the incidence of bullying is the Expect Respect Project. Meraviglia et al. (2003) described and evaluated this educational intervention. The Expect Respect Project was funded by Centers for Disease Control and was developed by SafePlace in 1998. The purpose of this project is to increase student, parent, and school personnel awareness about bullying and sexual harassment behaviors and to make use of effective strategies aimed at responding to inappropriate behaviors. The project consists of five components: classroom curriculum, staff training, policy development, parent education, and support services. A total of six elementary schools received the Expect Respect education program (in the fall and in the spring) and there were six comparison schools (control groups). A 27-question survey was administered to students and staff members in the beginning and at the end of the school year. The survey demonstrated an increase in awareness of sexual harassment. The intervention increased abilities to identify bullying as a problem, and it helped identify the sites where bullying was more likely to occur. Results also indicated that students were more likely to believe that, when confronted with issues of bullying and sexual harassment, staff would tell them to ignore inappropriate behaviors. On the other hand, staff believed that adults would address a sexual harassment or bullying incident by

giving a specific punishment for inappropriate behavior, telling the bully to stop, or calling the bullies' parents.

Another specific method used to reduce aggressive behavior is the Structure/Themes/Open Communication/Reflection/Individuality/Experiential Learning/Social Problem-Solving (STORIES) Program. This 15-week classroom-based program is aimed at reducing aggressive behaviors of students in elementary schools without singling out any particular students who might be bullies or victims. Teglasi and Rothman (2001) described the initial implementation outcomes of the STORIES Program on elementary school students who engaged in aggressive behaviors. Participants were 12 groups of four to six students from a fourth- and fifth-grade class. Each group contained one to two students identified by school staff as being at risk for bullying, general hostility, or aggressive behavior. Pre- and postintervention comparisons were used to evaluate the effectiveness of this program between the experimental (students participating in the program in the fall) and control group (students participating in the spring). Teachers rated students using a combined rating score of antisocial and externalizing behavior before the intervention and after. Students were asked to complete the Normative Beliefs About Aggression Scale (NOBAG) self-report questionnaire that dealt with each student's beliefs about their acceptability of aggressive reactions. Results showed that students who were less aggressive showed more positive changes (i.e., lower scores) and the more aggressive students showed more negative changes (i.e., higher scores) as assessed by teacher ratings of externalizing behaviors. However, the students identified as more aggressive obtained a lower score on teacher-rated externalizing behaviors and supported aggression less than

students who had not completed the STORIES program and who were on the wait-list.

### Precipitation of Anger

Because aggressive behavior and bullying might be precipitated by feelings of anger, some researchers have attempted to increase necessary coping skills to deal with anger. Lochman, Curry, Dane, and Ellis (2001) examined the Anger Coping Program as a treatment for aggressive children at the elementary level. Identified as a cognitive-behavioral intervention, this program is designed to improve social-cognitive skills by helping aggressive children identify their anger, develop better perspective-taking skills, increase awareness of the physiological signs of anger, and improve social problem-solving skills. Two co-therapists deliver the program in a group format where aggressive individuals engage in weekly goals and in behavioral contingency systems such as point systems. A battery of behavioral (e.g., behavior rating scale completed by the parent) and social-cognitive measures are used to assess the children's aggressive behavior and the social-cognitive factors associated with this behavior before and after the program. Based on series of randomized clinical trials conducted in public school systems, results indicated that the Anger Coping program reduced levels of aggressive behavior, improved problem-solving skills, and improved academic achievement in children who had been in the program.

### The Potential of Peer-Tutoring to Increase Positive Social Interactions

Given that bullies tend to desire positions of power and status among their peers, strategies that capitalize on this desire might prove particularly effective. One such intervention is peer tutoring, which allows an academically

or socially competent student to “teach” a less skilled peer. Recent research has demonstrated positive outcomes on both academic and social behaviors when students learn together. Although most research to date has demonstrated the effects of peer tutoring on tutees (e.g., Kamps, Locke, Delquadri, & Hall, 1989; Maheady & Sainato, 1985), others have focused on the behavior of the tutor (e.g., Cushing & Kennedy, 1997; Polirstok, 1986).

Kamps et al. (1989) sought to examine the effects of peer tutoring on the academic skills of children with autism. Two children diagnosed with autism and two regular fifth-grade students who were considered average in their academic skills participated in the study. There were four other tutor/tutee pairs included in the tutoring program who were monitored minimally and informally; however, the tutoring effects were only examined for the two children diagnosed with autism. Data were collected on students’ academic skills (e.g., money skills, expressive language, and oral reading/comprehension skills). Peer tutors received training consisting of 12, 30-minute sessions. The tutors received the training in two phases: general information phase and individual training phase. During the peer tutoring intervention, tutor-tutee pairs engaged in one-to-one instruction lasting 20 minutes with an additional 10 minutes of free play activities. Results for both participants showed that peer tutoring increased performance levels of money skills, expressive language, and oral reading skills.

In a study targeting social interactions in preschool children, Brady (1997) sought to examine the acquisition of peer tutoring components, acquisition of academic responses during peer tutoring, and the time tutors and tutees spent interacting together after peer tutoring began. Eight preschool children from the same classroom were grouped into four peer tutoring dyads and were told they were going to play a special teaching game in which each child in the pair would

alternate roles as teacher and student. There was one child with a disability and one without in each dyad. Peer tutoring sessions lasted about 30 minutes three times per week and involved stimulus presentation (e.g., tutoring cards), praise and corrective feedback, token delivery for correct unprompted responses, and prompts for responses that the tutee consistently answered incorrectly. Tutors were trained to implement the tutoring components by the use of a modeling procedure with the experimenter. Dependent variables included total number of seconds spent in social interaction (positive initiations, negative initiations, positive responses, negative responses, and length of interaction), academic response acquisition (correct and incorrect responses for each trial consisting of stimuli related to each participant's preschool educational objectives), and acquisition of peer tutoring components. Social interactions among participants were measured during 6-minute free play observations, which involved the presentation of play materials (e.g., a toy barn with animals, a Lincoln Log set, Duplo blocks, etc.). Data for tutees' academic response acquisition were recorded concurrently while data for tutor acquisition of peer tutoring components were collected. The results of this study showed that preschoolers could be taught to be effective peer tutors, as evidenced by academic gains attained by all the tutees. Participants learned at least one academic task, reaching a criterion of at least 90% correct on two consecutive peer tutoring sessions or 100% correct in one session. Further, two of the four dyads increased their time spent interacting. Most of the initiations among participants were positive initiations. Only two negative initiations and one negative response were recorded throughout the study. The remaining two dyads required more direct intervention to increase social interactions, which consisted of the experimenter directly reinforcing peer



initiations and interactions after the participants were told that they would be given a prize if they played together.

In an earlier study, Maheady and Sainato (1985) found positive peer tutoring effects on the social status and interaction patterns of fifth graders. The authors included six fifth-grade students, three low-status students (tutees), and three high-status students (tutors). Status was determined by using a variation of the How I Feel Toward Others (HIFTO) sociometric assessment, which was completed by each child in the class. The HIFTO determined the social status of the participants. Students rated as low status were students performing 2 years below their expected grade level and were concurrently receiving supplementary instruction in reading and math, whereas high status students performed at their expected grade level. Data on daily accuracy rates in mathematics, sociometric status among their peer group, and social interaction patterns between participants and their peers were collected. Peer tutoring consisted of presenting math tasks (e.g., workbook pages and flashcard drills), prompting correct responding through verbal explanations, and providing contingent reinforcement (e.g., praise and award points) for correct responding, providing corrective feedback and helping tutors count and graph daily correct response rates. Dependent variables consisted of academic changes, sociometric changes, and social interaction changes. Results showed that peer tutoring increased and maintained academic performance for all the tutees. In addition, sociometric status for the low status tutees increased slightly as a result of peer tutoring. Results also showed an increase in positive social interactions for low status tutees. Although the study did not find similar increases for high status students' social behavior, initiations, or sociometric status, these students were at no time

rated negatively for tutoring their low status peers. This study illustrates the positive effects of peer tutoring for low-status students.

Kamps et al. (1994) also found academic and social gains for tutees when attempting to improve reading skills and promote peer interactions among three high-functioning students with autism using a classwide peer tutoring procedure. The three participants lacked social skills but had relatively good language skills and academic performance. A total of 14 nondisabled students enrolled in each of the participant's classrooms participated in the intervention. Data on reading skills and frequency and duration of social interactions were collected. Social interactions between peers were observed using the Social Interaction Code during unstructured free-time activities. Students were trained in peer tutoring procedures during three 45-minute sessions. Following training, peer tutoring sessions were conducted three to four times per week for 25-30 minutes. Sessions involved reciprocal reading and provision of feedback for sentences read correctly and incorrectly by each child. Results showed that reading rates for all three participants increased with peer tutoring. Similar patterns were observed for the nondisabled peers. Further, the total duration of interactions and mean length of interactions increased for all the children who participated in this study.

Most peer tutoring research tends to focus primarily on outcomes produced with the tutee. When measured, behaviors of the tutor tend to be used as an indicator of treatment integrity or as an adjunctive measure of treatment effects across the dyad. However, some researchers have examined whether the role of tutoring a student can produce positive effects on children who themselves have behavioral challenges. Cushing and Kennedy (1997) studied the effects of providing peer support in general education classrooms on students

without disabilities. Participants included three student dyads comprised of one student with disabilities (tutee) and one student without (tutor). There were three criteria on which the three students without disabilities were selected: being in the same classroom as the student with disabilities, expressing interest in working with students with disabilities, and having difficulties with task engagement. Serving as a peer supporters consisted of taking notes, revising the notes to accommodate the needs of the students with disabilities, and providing in-class instruction on the assignment given in class. The peer supporters were also taught how to verbally describe an assignment and how to model and praise students with disabilities for performing well. The special education personnel gave comments to the peer supporters and the student receiving peer support approximately every 10 minutes. Results indicated that serving as a peer tutor increased academic engagement and work completion for all participants in the study. However, the effects of increased adult attention could not be excluded as a potential factor in producing these outcomes. Another limitation of this study was that no results for the participants with disabilities were reported.

In an earlier study, Franca et al. (1990) attempted to assess peer tutoring as a strategy to increase academic performance and social behavior of eight behaviorally disordered students in a self-contained classroom. Each student who served as a tutor or tutee engaged in problem behaviors including aggression toward peers and adults, inattentiveness, oppositional behavior, and difficulty with academic subjects. Peer tutors were selected based on having regular attendance, a desire to be a tutor, and ability to carry out the tutoring procedure. There were no specified criteria for the selection of tutees besides a teacher concern regarding his/her math performance. Dependent measures for the four tutor-tutee dyads included academic performance (correct and incorrect

rate of responses for math worksheets), sociometric status, self-concept, attitudes toward math, and percentage of intervals of social interactions (positive and negative interactions). Sociometric status was measured using a peer nomination and a peer rating scale measure administered twice during the study. The Piers-Harris Children's Self-Concept Scale (Piers & Harris, 1969) was also administered twice during the study as a measure of self-concept. The Math Subscale of the Estes Attitude Scales, secondary form, was used twice to measure student's attitude toward math. Lastly, social interactions were measured through direct observation of participants' positive verbal interactions and negative verbal interactions during a physical education class. Results showed a significant increase in the academic performance across all of the four tutor-tutee dyads. Neither tutors nor tutees showed significant changes on sociometric measures. Self-concept measures indicated small positive changes for tutors and no changes for tutees. Attitude toward math among the tutors and tutees improved. Finally, the results showed an increase in positive social interaction for both the tutor and tutee and a decrease in negative social interactions between the dyads.

Gumpel and Frank (1999) demonstrated the success of peer tutoring on social interactions among socially rejected and isolated boys who served the role as tutors and tutees. The two older participants (sixth graders) were assigned to tutor the two younger participants (kindergarteners) on social skills. All of the boys who participated in the study were identified by their teachers as being socially isolated and rejected by their peers. Tutors received adult-mediated training delivered by the second author, which was intended to teach tutors the five components of the social competence model (to identify appropriate social discriminative stimuli, to enumerate possible behavioral options, to enter into that social interaction, to self-monitor, and to observe the environmental

reaction). Peer tutoring consisted of the tutor teaching the tutee how to engage in each component of the social competence model. Both tutoring dyads met four times per week in the classroom, in the kindergarten, or on the playground. The dependent variable in this study consisted of the occurrence or nonoccurrence of social skills behaviors (e.g., positive interactions or no interactions). Results indicated an increase in positive social interactions among all four participants. During the maintenance phase, results indicated that the frequencies of all four participants' social interactions stabilized throughout a 5-week period.

Polirstok (1986) demonstrated the positive effects of employing a specialized tutoring program with problematic adolescents serving as peer tutors across two studies. An attempt was made to teach problematic adolescents to deliver reinforcement for every instance in which tutees were on-task. Participants in the first study included three eighth-grade adolescents who were taught to tutor students in the seventh-grade. The second study consisted of four ninth-grade adolescents taught to tutor seventh grade students. Tutors in both studies had a history of failing to follow school rules, excessive teacher referrals, were a minimum of 1.5 years below current grade placement in reading (measured by Stanford Achievement Test-SAT), had low on-task scores in reading class, and/or had prior retention in grade. There were five tutees randomly rotated among the tutors who scored below the 7.0 grade expectancy on the SAT. Peer tutoring consisted of tutors providing social reinforcement to tutees who were on-task. Tutors obtained tokens in exchange for backup reinforcers contingent on their delivery of social reinforcement to tutees' appropriate behaviors. A combined multiple baseline and withdrawal procedure was conducted in the first study that consisted of an untrained tutoring phase where no specific instructions were provided for the tutor while tutoring. A brief

training program followed thereafter, which included five sessions of 45 minutes, which taught tutors to dispense social reinforcement for on-task behavior with an audio signal every 30 seconds. The next phase consisted of a token economy procedure that allowed tutors to receive points/tokens for appropriately delivering social reinforcement to tutees. A “tutoring only” condition followed the token economy in which tutoring occurred without the delivery of tokens. Tutors for a second time were able to earn tokens for dispensing social reinforcement in the next phase. There was a 2-week follow-up phase in which only the tutoring procedure was in place. The second study implemented the same conditions as the first study using a multiple baseline and extended reversal design. However, the second study included a “no tutoring” phase that examined collateral effects. Dependent variables for both studies included number of approvals (social reinforcement) given by the tutor to the tutee, daily writing responses to short reading passages of tutees, attention (verbal and/or nonverbal approvals) tutors received from tutees, performance on pre- and posttest of the SAT in reading for both tutors and tutees, covariance of dependent variables, and tutors’ on-task and written responses to short reading passages in a separate class where no tutoring occurred (only in second study). Results indicated academic and social gains in problematic adolescents who were capable of becoming effective tutors. The token economy procedure produced the most significant changes although all dependent variables produced a change.

#### Current Study

Although there is empirical support for the use of peer tutoring as a strategy to improve academic success and social skills, there are no studies to

date that have targeted students labeled as bullies. Bullies' tendency to desire positions of power and status among their peers will possibly contribute to the success of peer tutoring as an intervention. This present study was intended to be an extension of previous studies that have targeted other populations, such as individuals with disabilities, disordered students, or low/high status students. The purpose of the present study was to evaluate potential social and academic changes for individuals labeled as bullies as a result of a peer tutoring intervention. The intervention involved the typical components of a peer tutoring intervention (i.e., presentation of curriculum in the form of drills, instructions, error correction, and social reinforcement for correct responding). Although this study relied predominantly on direct observations of behavior, permanent products of worksheets/assignments were also assessed. The goal of the study was to reduce bullying behavior among individuals labeled as bullies by increasing their appropriate social interactions with their peers after serving the role as tutors. A reduction in bullying behavior not only benefits the bully as a tutor socially, but also benefits the entire school environment. Peer tutoring was examined closely as well as the academic and social benefits that may result for bullies.

#### Some Comments on Measurement of Outcomes

A major issue in the assessment and treatment of bullying is the relatively covert nature of the behavior. Episodes of bullying tend to occur when adults are not present, making direct observation of these behaviors difficult. Therefore, outcome measures of bullying tend to be indirect. Leff, Power, and Goldstein (2004) noted that the most commonly used method for measuring bullying behavior is self-report, whereby a definition of bullying or victimization

is provided followed by questions that ask students to report the frequency of bullying behaviors. Olweus's (1993) Bully/Victim questionnaire is a commonly used self-report measure, although its translation into different languages makes evaluating the psychometric soundness of this measure difficult to establish. Lack of objectivity in providing responses in self-reports may be due to a lack of consistency in definitions of bullying among young students versus older students. Further, self-report measures also tend to be anonymous, which makes it difficult to make comparisons between pre and post questionnaires.

Teacher reports, which allow teachers to rate a student's level of overt aggression, are another popular measure (Leff et al., 2004). Although these measures are easy to administer, score, and interpret, covert forms of bullying might not be detected. Another limitation of teacher report measures involves the time it takes for teachers to complete ratings scales. Nursing logs provide another form of outcome measures that can be used to determine whether an intervention has been successful in decreasing visits to the school nurse for injuries related to bullying. However, nursing logs tend to have questionable reliability and validity due to the use of different procedures for recording injuries among schools, as well the fact that not all bullying incidents result in physical injury. Although the nursing logs are easy to collect and can reflect bullying behavior across a wide range of school contexts, they do not detect indirect forms of bullying.

Discipline referrals are another potential source of information that can track changes in bullying behavior. Like nursing logs, these referrals are readily available and can reflect behaviors across a wide range of school contexts. However, measures of discipline referrals may lack reliability because teachers may differ as to what type of behavior is referable and when it should be referred



(Leff et al., 2004). Despite this limitation, Sugai, Sprague, Horner, and Walker (2000) suggested that office discipline referrals can be a useful tool to assess and monitor school-wide discipline interventions. The authors also pointed out that discipline referrals are already collected within the schools and can be gathered throughout an intervention to assess behavior change.

Another commonly used measure is peer sociometric measures, which require students to assess the social and behavioral status of students. These measures have been shown to have high test-retest reliability and high interrater consensus reliability making them easier to identify the bully or victims of indirect bullying. Despite solid psychometric properties, peer sociometric measures can be time-consuming and labor-intensive. In addition consent to administer these measures may not be given by parents because of the potential to rate particular students negatively (Leff et al., 2004).

The last outcome measure identified by Leff et al. (2004) is behavioral observation. Observations can take the form of frequency counts of bullying behavior, rate and quality of interactions between students, or observation of antecedents and consequences occurring prior to and after a behavior, respectively. Behavioral observations are advantageous because they are able to examine behaviors in the natural environment. However, recording the interactional patterns of behavior can be time consuming and labor intensive. Extensive training to develop coding procedures and reliable observers also may be required. Furthermore, behavioral observations may not identify indirect forms of bullying, such as spreading rumors and excluding other students.

Potential advantages of current study. Although self-report measures may yield useful information about bullying, more direct behavioral measures are

clearly needed. Empirical evaluations of procedures need to go beyond the simple use of questionnaire measures. The present study was designed to adequately measure the effectiveness of a peer tutoring intervention by examining behavioral effects, such as increases in appropriate social interactions and increases in academic performance (e.g., increases in correct academic responses). These measures helped determine whether peer tutoring can benefit tutors labeled as bullies both academically and socially.

## Chapter 3

### METHOD

#### Participants and Settings

Participants were six third-grade elementary students. Of these students, three boys (Jake, 8-years-old, Nick and Nathan, 9-years-old) were identified by office discipline referrals and teacher nominations as having bullied other students. The teacher reported that she felt Nick and Nathan would benefit from the intervention because they frequently bullied and threatened other students and often engaged in temper tantrums. She referred Jake for the intervention because he often threatened other students and had difficulty getting along with his classmates. Further, these participants met the following criteria for inclusion in the study: (a) history of poor social relations with peers; (b) regular school attendance; and (c) expressed interest and willingness in serving as a peer tutor for another student when informed about the opportunity.

The remaining participants served as tutees, and were identified via teacher referrals as needing remediation in one or more academic areas. All three tutees, Yee, Kong, and Kim, were boys enrolled in the same third-grade classroom as participants who served as tutors. The boys were not English speakers and required assistance with basic word recognition. The teacher reported that the use of flashcards with pictures helped them recognize pictured items and connect the items to written words. Tutors and tutees were paired based on who the teacher felt would benefit from tutoring in a specific area and who she felt would not have difficulty working together. Jake and Yee were the first peer tutoring dyad, Nick and Kong formed the second peer tutoring dyad,

and Nathan and Kim formed the third peer tutoring dyad. All sessions were conducted in the students' classrooms. Peer tutoring sessions occurred during the beginning of the morning 5-a-day (an assignment where students are required to complete five math problems that are a review of the previous day's math lesson), when students were allowed to work together if necessary while the teacher walked around the classroom. Peer tutoring dyads worked at their peer tutoring stations for approximately 15 minutes while the rest of the class worked on their 5-a-day assignment. Data on social interactions were collected when the peer tutoring sessions had been completed and tutors returned to their desk to begin working on the 5-a-day assignment along with the rest of the class.

#### Informed Consent Procedures

All procedures were approved by the university's Institutional Review Board and by the participants' school and district before data collection began. The experimenter contacted the parents of the students who were peer tutors, as well as the parents whose child received peer tutoring, to obtain parental consent to participate. Informed consent and assent forms (see Appendices A, B, and C) were signed by participants and their parents prior to the collection of data.

#### Dependent Variables

##### Social Interactions

Appropriate social interactions were defined as *appropriate verbal interactions*, specifically any verbal expressions between two individuals that included statements (a) to ask for or give information or instructions; and/or (b) to indicate approval and acceptance of the peer (e.g., "Is this right?" "She's my bestest friend," "I got a new backpack," "How do you spell brown?" "I'm going

to a sleep over," "I'm doing my work," "How do you do that?") and *appropriate nonverbal interactions*, which were defined as any gesture used to appropriately communicate with another student (e.g., handing a toy/object, pointing to an item, nodding head for approval). Inappropriate social interactions were similarly defined as *inappropriate verbal and nonverbal interactions*. Inappropriate verbal interactions were defined as statements directed to another peer involving disapprovals, intimidations, or rejections (e.g., "You don't have to be my friend!" "Melissa said she don't like you," "No, she's lying!" "I never say that word!"). Inappropriate nonverbal interactions were defined as any inappropriate gestures directed at another child, such as pushing, hitting, punching, kicking, pulling, grabbing objects from others, or making forceful bodily contact with someone else.

Data were collected via direct observation by the primary researcher and two trained observers three to four times per week. The dependent variables were measured using partial interval recording (see Appendix D) using a Motivaider to signal the observers to record the presence or absence of social interactions. A Motivaider is a small device that resembles the shape of a pager and can be preset to a specific interval of time. The device vibrates to signal the observer to record the occurrence of the dependent variable after the specified time interval has elapsed. Each participant was observed for a period of 6 to 10 minutes, depending upon how long activities allowed children to work together. Sessions were divided into 36 to 60 equal intervals of 10 seconds for the purposes of partial interval recording. Participants were observed sequentially during the observation period; specifically, observers observed 1 participant for 1 minute and after 1 minute rotated to the next participant, and after observing the 2<sup>nd</sup> participant for 1 minute rotated to the 3<sup>rd</sup> participant until all 3 participants were

observed for a period 6 to 10 minutes each. For each dependent measure, the percentage of intervals in which students were at least partially engaged in the target behaviors was recorded so that a percentage of intervals could be calculated for each measure. Observers were located within 3 to 4 feet away from the students while conducting observations sessions. Practice observations were conducted prior to data collection, which allowed the students to become used to the observers being in the classroom, and observers were informed about the importance of being unobtrusive in the classroom during training.

### Academic Performance

Data were collected on the peer tutors' and tutees' academic performance on the specific subject area targeted during peer tutoring sessions. Academic performance was assessed using worksheets/assignments as permanent products collected once a week throughout the duration of the study. Worksheets and assignments were completed after recess and after the peer tutoring sessions. Jake, Nathan, and all three tutees had the opportunity to complete three assignments during baseline and two assignments during the peer tutoring intervention. Nick had the opportunity to complete two assignments during baseline and two during the intervention. The content of the assignments assessed during the intervention was similar to that covered during the tutoring sessions, in that students had to label a vocabulary word (e.g., octagon), provide the definition of the word (e.g., an eight-sided figure), and write or/and draw examples of the vocabulary word (e.g., stop sign). The teacher provided a limited number of worksheets related to the language arts skills taught in the tutoring sessions; therefore, only a few opportunities to assess acquisition of skills from tutoring sessions was available.

Data on the completion and accuracy of work from the assignments were recorded to yield a percentage of complete and incomplete and correct and incorrect responses calculated respectively to obtain the performance of each participant. The percentage of accuracy of work was calculated by dividing the number of correct items by the number of total items completed on the assignments, and multiplying by 100 to produce a percentage. Percentage of completion of work was calculated by dividing the number of answers completed by the total number of items on the assignment, and multiplying by 100 to produce a percentage.

#### Office Discipline Referrals

Data on office discipline referrals of tutors were collected throughout the duration of the study. Referrals were collected each Friday by the researcher.

#### Student Reports

Students' reports to teachers of incidents of inappropriate social interactions were collected through the duration of the study. The teacher recorded students' reports for each tutor on a data sheet daily by marking tally marks for every report made. The data sheets were provided by the researcher at the beginning of every week and collected at the end of the week.

#### The Social Skills Rating System (SSRS)

The SSRS was administered by a credentialed school psychologist before and after the study (approximately 8 weeks elapsed from the first administration to the second) to assess short-term changes in the behavior of the tutors. The SSRS measures the perceived frequency and importance of a student's social behaviors within the social skills, problem behaviors, and academic competence

domains using three forms (Teacher, Parent, and Student). The SSRS screens and classifies children at the preschool, elementary (grades K-6), and secondary (grades 7-12) level using three forms (Teacher, Parent, Student). Reliability evidence for the SSRS included estimates of internal consistency and test-retest using a sample of 4,170 children, 1,027 parents, and 259 teachers based on US census data in the year 1988. Reliability measures were illustrated with estimates of internal consistency (Cronbach's alphas) for all forms; Social Skills ranged from .83 to .94, from .73 to .88 for Problem Behaviors, and were .95 for Academic Competence. Estimates of internal consistency for each form are as follows: Social Skills, teacher (.93 to .94), parent (.87 to .90), student (.83); Problem Behaviors, teacher (.82 to .86), parent (.73 to .87); Academic Competence, teacher (.95). Estimates of test-retest were as follows: Social Skills, teacher (.85), parent (.87), student (.68); Problem Behaviors, teacher (.84), parent (.65); Academic Competence, teacher (.95). Test-retest reliability for the teacher form was shown to be .85 for Social Skills, .84 for Problem Behaviors, and .93 for Academic Competence. The parent form demonstrated test-retest reliability of .87 for Social Skills, .65 for Problem Behaviors. The student form demonstrated evidence of test-retest reliability of .68 for Social Skills. The SSRS is content, construct, and criterion-related valid. For example the SSRS's criterion-related validity is demonstrated by a correlation between the teacher form and the Child Behavior Checklist-Teacher Report Form (CBCL-TRF) of -.67 for the total scale of the Social Skills domain (SSRS) and the Externalizing scale (CBCL-TRF). Although there is no direct way of measuring construct validity, the SSRS possesses construct validity to the degree that it measures a construct (e.g., Social Skills, Problem Behaviors, and Academic Competence) directly observed in the "real world." The SSRS shows evidence of convergent validity through the relationship



between two measures of the same trait using different methods (i.e., teachers, parents, and students). For example, a convergent validity coefficient for Teacher-Parent ratings of Social Skills Subscales and Total scale at the Preschool Level was .25.

### Social Validity

Teachers and tutors were asked to complete a pre- and postquestionnaire (see Appendices E through H) regarding perceived effectiveness of the intervention. Tutees were asked to complete a postquestionnaire (Appendix I). The prequestionnaire was used to examine the goals of the study, whereas the postquestionnaire was used to assess the results and the practicality of the procedures.

### Interobserver Agreement

Reliability checks were implemented for 33% of the observations throughout the study and across phases. Agreement between observers was calculated by dividing the number of agreements by the number of agreements plus disagreements, and multiplying by 100%. The mean interobserver agreement score across total social interaction sessions was 89.2% (range, 83% to 100%). The mean interobserver agreement score across *appropriate* verbal and nonverbal interactions was 85.4% (range, 70% to 100%). The interobserver agreement score across *inappropriate* verbal and nonverbal interactions was 83.2% (range, 50% to 100%).

Interobserver agreement (IOA) on academic performance was obtained with the researcher for 31% of permanent products collected. IOA was calculated by dividing the number of agreements by the number of disagreements, and multiplying by 100% to determine the percentage of agreement among observers.

Minimally, interobserver agreement measures were obtained once per condition (e.g., baseline, intervention). The mean interobserver agreement score across permanent products was 97% (range, 80% to 100%).

### Observer Training

Observers were two undergraduate students. The researcher trained all observers on the definitions of the dependent variables and on the measurement procedures used to collect the data. The training first consisted of examples and non-examples of the dependent variables, as well as a description of the codes on the data sheet. Observers then were quizzed (see Appendix J) on the definitions of the dependent and independent variables and on how to properly record data on the data sheet and had to attain a score of 100% accuracy on variable definitions before moving on to the next phase of training. One observer required two attempts to pass the quiz, whereas the other observer attained a perfect score on the first attempt. Observers also were trained to take integrity measures of proper implementation of the independent variable. Observers were trained to calculate the average completion of steps in the protocol to calculate the integrity score. In addition, observers were informed of ways to remain unobtrusive (e.g., minimizing eye contact with the students being observed, being very quiet) when conducting observations in the classroom.

Three direct observation training sessions were conducted for observers to practice using measurement procedures within the actual participants' classroom, as well as to allow participants to habituate to the observers' presence. Students in the classroom initially glanced over to the observers and researcher and asked questions about why they were in the classroom. After the first three practice sessions the students no longer asked questions. Observers

independently collected data alongside the researcher, and scores subsequently were compared. Agreement between observers and the researcher were calculated by dividing the number of agreements by the number of agreements plus disagreements, and multiplying by 100%. Before data collection began, observers were required to obtain at least a mean interobserver agreement of 85% across three consecutive practice observations conducted in the target participants' classroom with the researcher. The first observer obtained a mean interobserver agreement of 93%, 100%, and 97% across three consecutive practice observations. The second observer obtained a mean interobserver agreement of 80%, 90%, 90%, and 100% after four practice observations. During all training and data collection, observers were not informed of the hypothesis of the study or that the tutors had been identified by their teachers as being bullies.

### Research Design and Experimental Conditions

A multiple baseline design across peer tutors was used to evaluate results.

#### Baseline

During baseline, participants engaged in activities typically expected in their classrooms. Once there was stability or a trend in the opposite direction of the desired behavior change observed in the data, training for tutors began.

#### Peer Tutoring Training

Training on how to appropriately tutor another student was provided by the researcher to the tutors. Training took place in one-on-one sessions with the researcher. After conferring with the teacher regarding content for which students could use additional practice, the researcher obtained picture flashcards from a local school supply store (GW School Supply) that targeted discrete skills

related to language arts. The teacher agreed the flashcards were appropriate since the vocabulary word and the picture of the item were on the flashcards. During training, peer tutors were asked to present learning drills to the researcher. The correct protocol for such drills involved five components: (a) show the card to the tutee; (b) wait at least 5 seconds for a response; (c) if a correct response is given, give praise; (d) if the incorrect answer is given, provide the correct answer and present the card again; (e) record the nature of the response (correct or incorrect) on a data sheet (Appendix K). Tutors were taught how to praise and correct appropriately through the use of role-playing and the use of examples and non-examples. The researcher and the tutors role-played the role of a tutor and a tutee for several drills. The researcher served the role as tutor first and the target participant served the role as a tutee. The researcher modeled the appropriate way to present drills and appropriate ways of providing praise for every correct response (e.g., "Terrific, you gave the right answer!"). Modeling was provided to demonstrate ways to respond appropriately to incorrect answers (e.g., "No, that word is BEGIN. Try again."), as well as to show the correct way to score the tutee's data sheet (Appendix K) (i.e., circling a plus sign (+) when the tutee answered correctly and a minus sign (−) when the tutee answered incorrectly). Once the researcher had demonstrated correct tutoring responses for at least five correct and five incorrect tutee responses, the researcher and tutor changed roles (i.e., he served the role as the tutor and the researcher served the role as a tutee). The researcher provided verbal feedback for each tutor response. One 30-minute training session was necessary for each tutor to master the protocol. The researcher and Jake changed roles five times during the training session before he demonstrated mastery of the protocol without prompting from the researcher. Nick changed roles with the

researcher five times during the training session before he demonstrated mastery of the protocol. The last tutor, Nathan, demonstrated mastery of the protocol after changing roles with the researcher three times.

### Peer Tutoring Phase

Peer tutoring occurred at a peer tutoring station that was constructed in the morning at the beginning of class. The peer tutoring sessions occurred between 8:00 a.m. and 8:30 a.m. Peer tutoring dyads were assigned to their peer tutoring station while the rest of the class worked on the 5-a-day assignment. Social interaction data were collected immediately after the tutoring sessions when the class continued working on the 5-a-day assignment, allowing social interactions to occur between tutors and their peers. Tutors were assigned a station at which they were in charge of implementing the tutoring procedure with their peer. The researcher or observers supervised tutoring session to monitor student behavior and ensure the safety of all children. However, attention to tutors/tutees was minimal to ensure that there was no confounding variable(s) due to increased attention to tutors/tutees unless there was a problem that needed to be addressed. The researcher and observers were in close enough proximity to the students to be able to accurately observe and hear the students; however, they were instructed not to interact with the students unless a tutor was engaging in a highly inappropriate behavior. There was no inappropriate interaction between the tutors and tutees that required an adult to intervene at any time during the intervention.

### Integrity of the Experimental Procedures

A checklist of the steps required to employ the independent variable was used to ensure that the peer tutoring intervention was implemented

appropriately (see Appendix L). Integrity checks were conducted by the primary researcher or observers throughout each phase of the study a total of 100% of the sessions. The integrity score was calculated based on the average completion of steps in the protocol. Total steps completed in the protocol were divided by total number of opportunities to do the steps. A score of 80% or higher was considered satisfactory. Jake and Nick obtained an integrity score of 100% on all peer tutoring sessions. Nathan obtained an integrity score of 80% on one peer tutoring session and scores of 100% on the last two peer tutoring sessions (M= 93.3%; range 80 to 100%). The only prompting Nathan needed was to remind him to circle the tutee's correct or incorrect response when he actually began the intervention, not during training. Given the high integrity with which procedures were implemented, none of the tutors required retraining during the intervention phase.

## Chapter 4

### RESULTS

#### Social Interactions

Figure 1 displays appropriate and inappropriate social interaction results for all 3 participants. Jake's data are displayed in the top panel. During baseline, Jake's appropriate interaction was variable ( $M= 40.6$ ; range, 13 to 74%). During the intervention phase his appropriate interaction continued to be variable ( $M= 49.6$ ; range 7 to 79%) and most data points fell within the baseline range with the exception of the third and sixth data point. During baseline, Jake's inappropriate interaction was relatively stable and low ( $M= 1.85$ ; range, 0 to 8%). During the intervention phase, his inappropriate interaction continued to be relatively stable and remained at 0 with the exception of the second and fourth data point ( $M= 3.43$ , range, 0 to 17%).

Nick's data are displayed in the middle panel. During baseline, data on Nick's appropriate interaction displayed a stable downward trend ( $M= 51.25$ , range, 42 to 63%). During the intervention phase his appropriate interaction showed an upward trend ( $M=46$ ; range, 41 to 53%), but all data points fell within the baseline range. During baseline, data on Nick's inappropriate interaction displayed an immediate decrease after the first data point and remained relatively low throughout the phase ( $M= 12.5$ , range, 2 to 37%). During the intervention phase, Nick's inappropriate interaction displayed a slight upward trend after the second data point ( $M= 7.33$ , range, 3 to 16%), but all data points still remained within the baseline range.

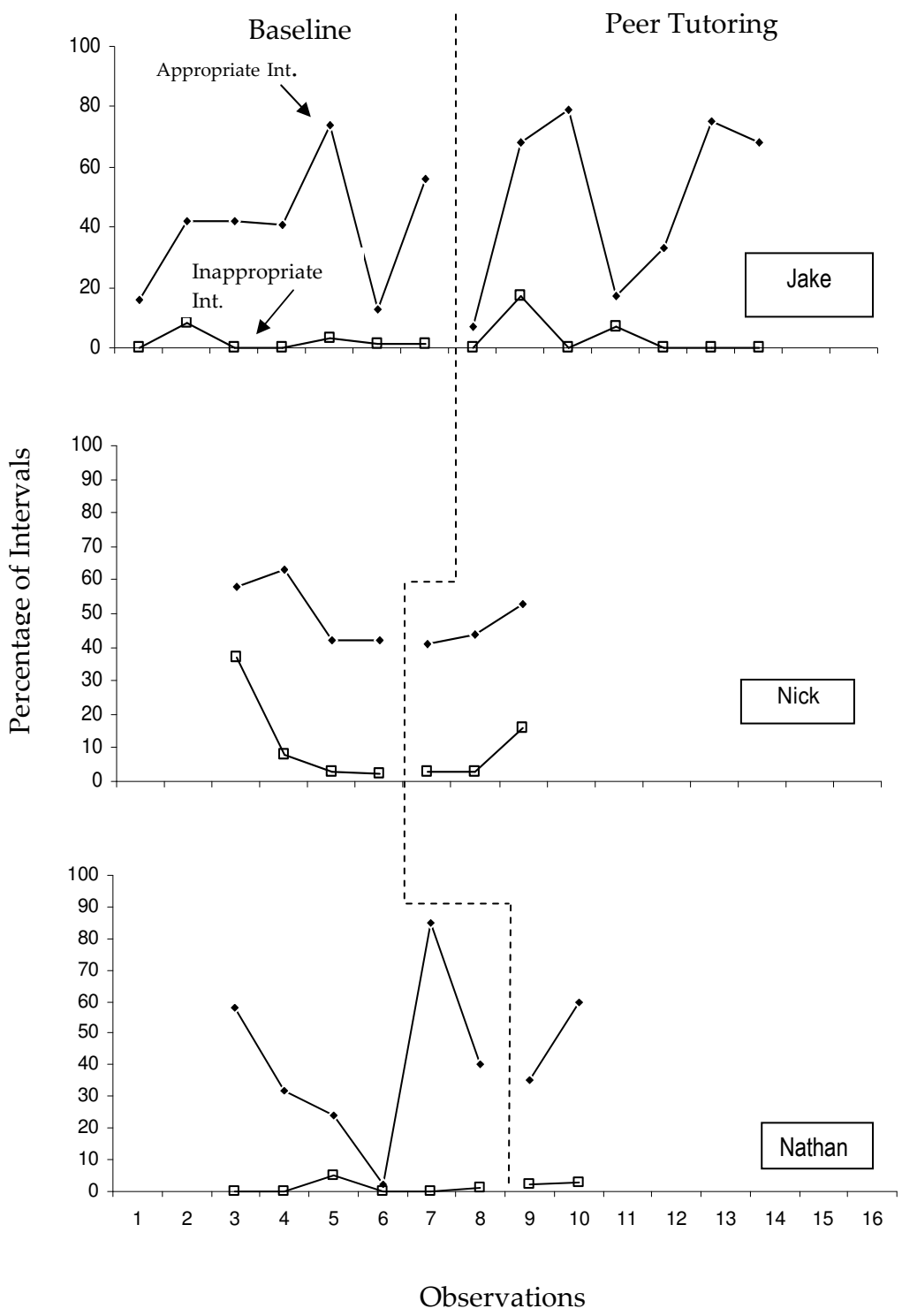


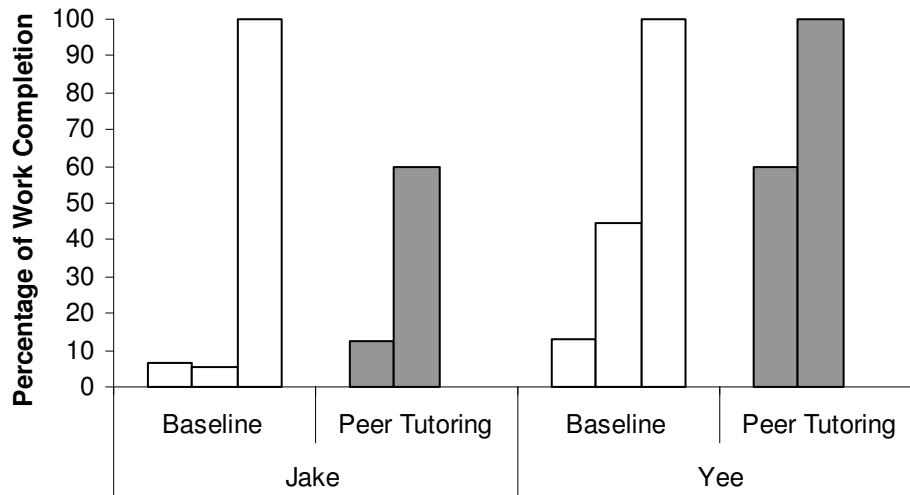
Figure 1. Percentage of intervals for appropriate and inappropriate interactions for Jake, Nick, and Nathan.



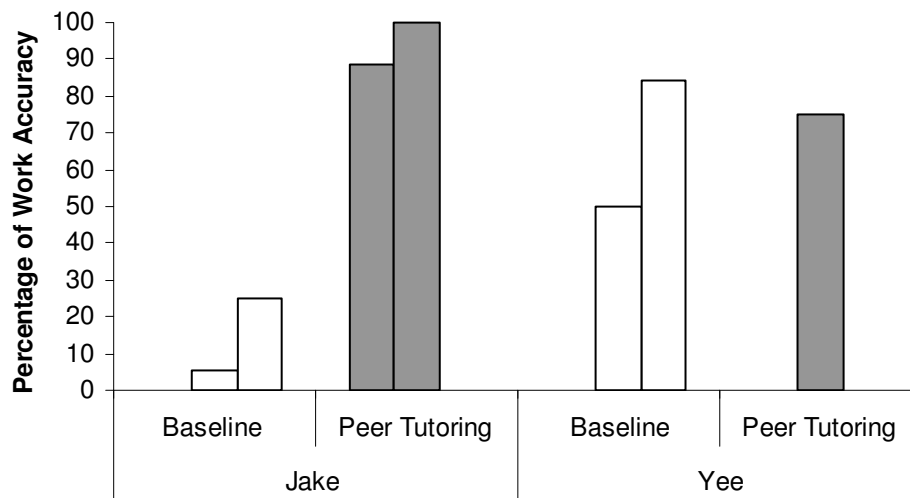
Nathan's data are displayed in the lower panel. During baseline, Nathan's appropriate interaction was highly variable. Behavior showed an initial downtrend, but increased sharply after the fourth observation ( $M=40.16$ ; range, 2 to 85%). During the intervention phase, Nathan's appropriate interaction increased, but all data points fell within the baseline range ( $M= 47.5$ ; range 35 to 60%). During baseline, his inappropriate interaction remained stable and at 0 with the exception of the third and sixth data point ( $M= 1$ , range, 0 to 5%). During the intervention phase, Nathan's inappropriate interaction continued to remain low and stable ( $M= 2.5$ , range, 2 to 3%).

#### Academic Performance

Results of the academic performance for each dyad are displayed in Figures 2–7. Percentages for work completion and accuracy for the first dyad, Jake and Yee, are displayed in Figures 2 and 3. Total work completion ( $M= 36.9\%$ , range, 5.5-100%) for Jake was variable throughout the course of the study. During baseline, total work completion for Jake averaged 37% (range 5.5-100%). When the peer tutoring intervention was introduced, average work completion for Jake was 36% (range 12.5-60%). Total work completion ( $M=63\%$ , range, 13.3-100 %) for Yee was variable throughout the course of the study. During baseline, work completion for Yee averaged 52.5% (range 13.3-100%). When the peer tutoring intervention was introduced, Yee's work completion averaged 80% (range 60-100%). During the baseline phase, work accuracy for Jake averaged 10% (range 0-25%) and showed an increasing trend. When the peer tutoring intervention was introduced there continued to be an increasing trend in work accuracy ( $M=94\%$ , range 88.8-100 %). Yee's total work accuracy was variable throughout the study ( $M=41\%$ , range 0-84%). During the baseline phase, work



*Figure 2.* Percentage of work completion for Jake and Yee. Each bar represents a single assignment or worksheet.



*Figure 3.* Percentage of work accuracy for Jake and Yee. Each bar represents a single assignment or worksheet.

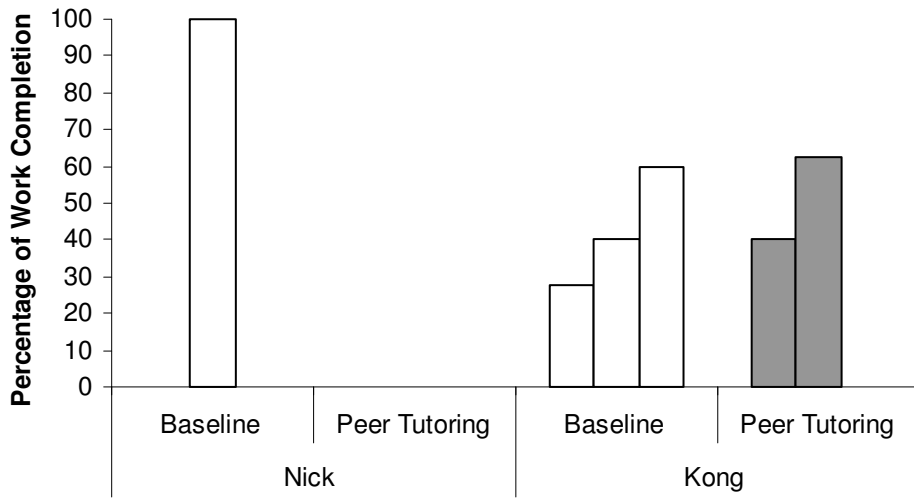


Figure 4. Percentage of work completion for Nick and Kong. Each bar represents a single assignment or worksheet.

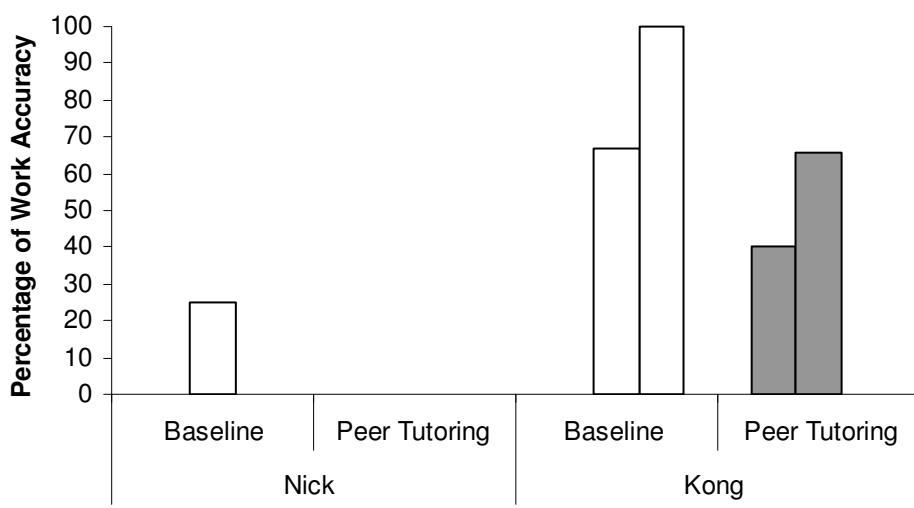


Figure 5. Percentage of work accuracy for Nick and Kong. Each bar represents a single assignment or worksheet.

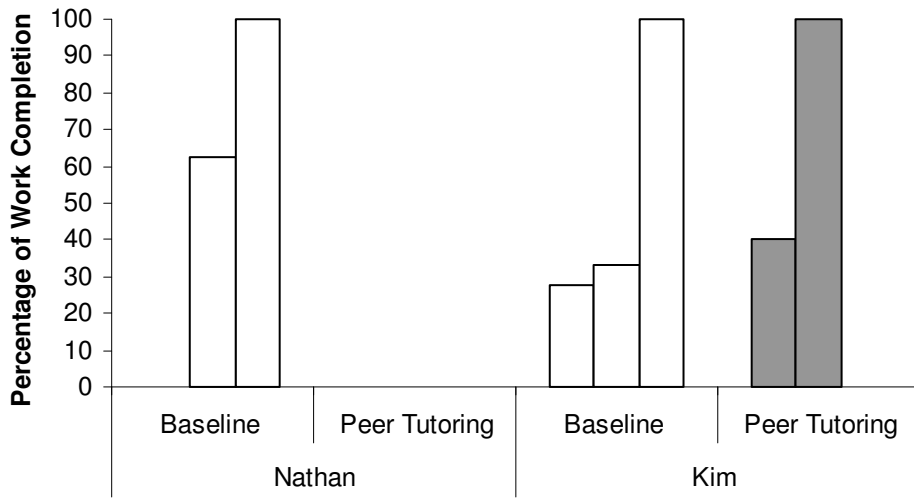


Figure 6. Percentage of work completion for Nathan and Kim. Each bar represents a single assignment or worksheet.

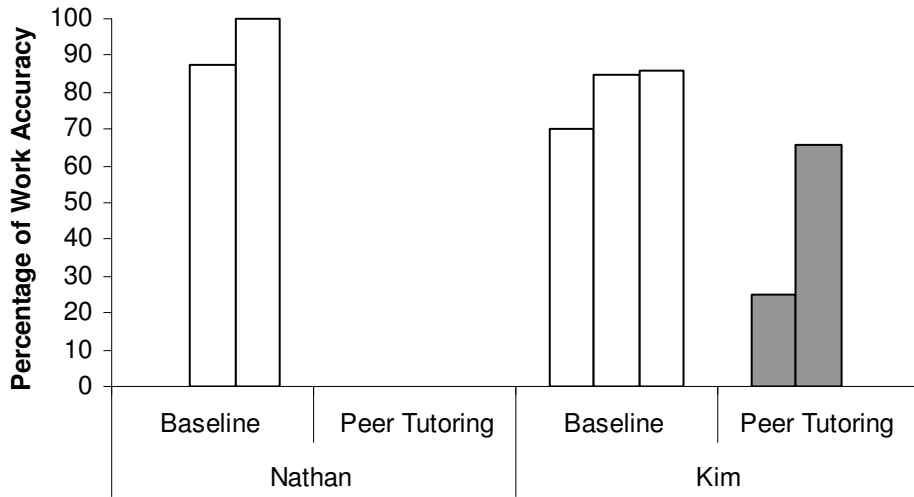


Figure 7. Percentage of work accuracy for Nathan and Kim. Each bar represents a single assignment or worksheet.

accuracy for Yee averaged 44% (range 0-84%). When the peer tutoring intervention was introduced work accuracy for Yee averaged 37% (range 0-75%).

Percentages for work completion and work accuracy for the second dyad, Nick and Kong, are displayed in Figures 4 and 5. Nick's total work completion (M= 25%, range, 0-100%) was low and variable throughout the course of the study, with the exception of the third data point during baseline. During baseline, total work completion for Nick averaged 50% (range 0-100%). When the peer tutoring intervention was introduced, Nick's work completion remained at 0. Kong's total work completion (M=46%, range, 27.5-62.5%) was slightly variable throughout the course of the study. During baseline, total work completion for Kong averaged 42.5% (range 27.5-60%). When the peer tutoring intervention was introduced, Kong's work completion decreased and then increased after the first data point (M=51.25%, range 40-62.5%). Nick's total work accuracy (M=6.25%, range 0-25%) remained at 0 with the exception of the second data point during baseline, throughout the course of the study. Kong's total work accuracy (M=54%, range 1-100%) was variable throughout the course of the study. During baseline Kong's work accuracy averaged 55% (range 0-100%) and showed an increasing trend. During the peer tutoring intervention Kong's work accuracy averaged 53% (range 40-66%).

Percentages for work completion and accuracy for the third dyad, Nathan and Kim, are displayed in Figures 6 and 7. Nathan's total work completion (M=32.5%, range, 0-100%) was variable throughout the course of the study. During baseline, total work completion for Nathan averaged 54% (range 0-100%). During the peer tutoring intervention, total work completion for Nathan decreased and remained at 0. Total work completion (M=60%, range, 27.7-100%) for Kim was variable throughout the course of the study. During baseline, total

work completion for Kim averaged 53% (27.7-100%) and showed an increasing trend. When the peer tutoring intervention was introduced, total work completion for Kim decreased and averaged 70% (range 40-100%). Nathan's total work accuracy (M=37.5%, range 0-100%) was variable throughout the course of the study. During baseline, total work accuracy for Nathan averaged 62.5% (range 0-100%). Nathan's total work accuracy during the peer tutoring intervention remained at 0. Kim's total work accuracy (M=66%, range 25-86%) was variable throughout the study. During baseline, total work accuracy for Kim averaged 80% (range 70-86%). When the peer tutoring intervention was introduced, total work accuracy for Kim averaged 45.5% (range 25-66%).

#### Office Discipline Referrals

None of the 3 participants received office discipline referrals during the course of the study. Jake had received a referral the previous school year for engaging in aggressive behavior with another student. Moreover, Jake received an office discipline referral 2 school years before the study for threatening another student. Nathan had received four bus citations for aggressive behavior on the bus 2 school years before the start of the study, which resulted in office referrals. Nathan also had received one office discipline referral for class disruption and teacher defiance during the current school year before the start of the study. Nick did not have any office discipline referrals.

#### Student Reports

Table 1 summarizes the total number of student reports of inappropriate social interactions for each participant. The results indicate that Nathan had the most instances of inappropriate social interactions that were not referred to the office but were referred to the teacher. The teacher indicated that, although Jake

had received two student reports of inappropriate social interactions, they had occurred on days when Jake was having family problems. Nick had four instances of inappropriate social interactions that were not referred to the office but were referred to the teacher. With the exception of one referral for Jake during peer tutoring, all referrals occurred during baseline.

Table 1

*Total Student Reports*

| Tutor  | Baseline | Inter. | Example  |
|--------|----------|--------|--|
| Jake   | 1        | 1      | "Jake took my pencil"                              |
| Nick   | 4        | 0      | "Nick hit me"                                      |
| Nathan | 9        | 0      | "Nathan threw my pencil and wouldn't give it back" |

The Social Skills Rating System (SSRS)

Results of the Teacher Form of the SSRS administered by a credentialed school psychologist before and after the study are displayed in Table 2. The teacher rated Jake, Nick, and Nathan as displaying fewer social skills than the average for the standardization sample comparison group before and after the study. All three tutors were also rated as exhibiting more problem behaviors than the average for the standardization sample comparison group before and after the study. The teacher rated all three tutors as exhibiting less academic capability than the average for the standardization sample comparison group before and after the study. The teacher rated Jake as displaying average self-control behaviors after the termination of the study. She also rated Jake as displaying an improvement in externalizing behaviors (e.g., verbal or physical aggression toward others, poor control of temper, and arguing). Additionally,

the teacher rated Nick as displaying average cooperative behaviors (e.g., helping others, sharing materials, and complying with rules and directions) at the end of the study.

Table 2

*Results From the Social Skills Rating System—Teacher Form*

| Scale                      | Jake    |         | Nick    |         | Nathan  |         |
|----------------------------|---------|---------|---------|---------|---------|---------|
|                            | Pre     | Post    | Pre     | Post    | Pre     | Post    |
| Cooperation                | Fewer   | Fewer   | Fewer   | Average | Fewer   | Fewer   |
| Assertion                  | Average | Average | Fewer   | Fewer   | Average | Fewer   |
| Self-Control               | Fewer   | Average | Fewer   | Fewer   | Fewer   | Fewer   |
| <b>SOCIAL SKILLS</b>       | Fewer   | Fewer   | Fewer   | Fewer   | Fewer   | Fewer   |
| Externalizing              | More    | Average | More    | More    | More    | More    |
| Internalizing              | Average | More    | Average | Average | Average | Average |
| Hyperactivity              | More    | More    | More    | More    | More    | More    |
| <b>PROBLEM BEHAVIORS</b>   | More    | More    | More    | More    | More    | More    |
| <b>ACADEMIC COMPETENCE</b> | Below   | Below   | Below   | Below   | Below   | Below   |

Results of the Student Form of the SSRS administered by a credentialed school psychologist before and after the study are displayed in Table 3. Jake rated himself as exhibiting more social skills than the average for the standardization sample comparison group after the study. Nick rated himself as displaying as many social skills as the average for the standardization sample comparison group after the termination of the study. Finally, Nathan rated



himself as displaying as many social skills as the average for the standardization sample comparison group at the end of the study. All three tutors rated themselves as exhibiting more self-control behaviors (e.g., responding appropriately to teasing) after the termination of the study. Jake and Nick rated themselves as displaying more assertive behaviors (e.g., initiating behaviors, such as asking others for information, introducing oneself, and responding to the actions of others, such as peer pressure or insults) at the end of the study. Unfortunately, no parent scores are available because forms sent home for parents to complete were never returned.

Table 3

*Results From the Social Skills Rating System—Student Form*

| Scale         | Jake    |         | Nick    |         | Nathan  |         |
|---------------|---------|---------|---------|---------|---------|---------|
|               | Pre     | Post    | Pre     | Post    | Pre     | Post    |
| Cooperation   | More    | More    | Average | Average | Average | Average |
| Assertion     | Average | More    | Average | More    | Average | Average |
| Empathy       | Average | Average | Average | Average | Average | Average |
| Self-Control  | Average | More    | Average | More    | Average | More    |
| SOCIAL SKILLS | Average | More    | Average | Average | Average | Average |

Social Validity

Results of the pre-intervention social validity questionnaire for the teacher are displayed in Table 4. These ratings indicated that the teacher believed the peer tutoring intervention would be helpful in improving appropriate interactions for tutors and tutees. The teacher reported feeling neutral as whether the intervention would be helpful in improving the academic performance of her

students. The ratings demonstrated that the teacher agreed bullying was a problem in her classroom. She also reported feeling neutral as to whether bullying was a problem in the school. In addition, the teacher reported that she currently had some effective procedures (e.g., rewards and consistent consequences) in place in her classroom to help her deal with bullying behaviors.

Table 4

*Results From the Preintervention Social Validity Questionnaire*

| Statement/Question   | Teacher Response   |
|--|--|
| Bullying is a problem in my classroom.   | Agree  |
| Bullying is a problem in my school.  | Neutral  |
| Additional intervention services for bullies are needed in my school.  | Agree  |
| Peer tutoring will be helpful in improving social interactions for tutors.   | Agree  |
| Peer tutoring will be helpful in improving social interactions for tutees.   | Agree  |
| Peer tutoring will be helpful in improving academic performance for my students.   | Neutral  |
| Please indicate whether you feel you have effective procedures in place in your classroom to help you deal with bullying behavior. If so, what are they? | Some—rewards and consistent consequences (usually removal) |

Results of the postintervention social validity questionnaire for the teacher are displayed in Table 5. Overall, the results showed that the teacher perceived the intervention to be effective in helping decrease negative interactions for tutors and changing students' perceptions of tutors. The teacher reported feeling neutral as to whether the intervention was helpful in improving social

interactions for tutors and tutees. She also reported feeling neutral as to whether the intervention was helpful for tutors and tutees to become more academically competent. The teacher agreed the intervention was a good fit for her classroom and believed she could use the intervention with different types of students or behaviors. However, she reported feeling neutral as to whether she would use the intervention in her classroom in the future. The teacher did not report that the intervention was disruptive to classroom activities or instruction, but was uncertain as to whether she felt she could implement the intervention in the classroom without the researcher present. The social validity questionnaire also indicated that the teacher would recommend the intervention to other third-grade teachers.

Results of the preintervention social validity questionnaire for the tutors are displayed in Table 6. Overall, the results of the social validity questionnaires showed that the tutors already believed they were good at helping others. The questionnaire also indicated that the tutors did not believe they teased others or left others out of group activities. Jake was the only one who believed he got good grades. Nick and Nathan reported feeling neutral as to whether they got good grades. Jake and Nathan both believed they had many friends. All three tutors preferred to play within a group. Results of the postintervention social validity questionnaire for the tutors are displayed in Table 7. Results showed that Jake, Nick, and Nathan perceived the intervention to be effective in helping them become better at helping others. All three tutors liked serving the role as a tutor and would like to continue tutoring in the future.

Table 5

*Results From the Postintervention Social Validity Questionnaire*

| Statement/Question  | Teacher  |
|---|----------|
| Peer tutoring was helpful in improving social interactions for tutors.  | Neutral  |
| Peer tutoring was helpful in improving social interactions for tutees.  | Neutral  |
| Peer tutoring was helpful in decreasing negative interactions for tutors.   | Agree    |
| Peer tutoring was helpful for tutors to become more academically competent.   | Neutral  |
| Peer tutoring was helpful for tutees to become more academically competent.   | Neutral  |
| Peer tutoring was helpful in changing students' perceptions of tutors.  | Agree    |
| The peer tutoring intervention was a good fit for my classroom.   | Agree    |
| The intervention was disruptive to classroom activities/instruction.  | Disagree |
| If the intervention was disruptive to classroom activities/instruction, I think the amount of behavior change was worth it. | Neutral  |
| I think would recommend this intervention to other teachers.  | Agree    |
| I would like to use this intervention in my classroom in the future.  | Neutral  |
| I am confident I can use this intervention in my classroom without the researcher present.                                  | Disagree |
| I think I could use this intervention in my classroom with different types of students of behaviors.                        | Agree    |
| I think the behaviors I used to label the target students a bully have changed as a result of this intervention.            | Neutral  |

Table 6

*Results From the Preintervention Social Validity Questionnaire—Tutors*

| Statement/Question                              | Jake                 | Nick                 | Nathan               |
|---|----------------------|----------------------|----------------------|
| I am good at helping others.                    | Strongly<br>Agree    | Agree                | Strongly<br>Agree    |
| I have many friends.                            | Agree                | Disagree             | Agree                |
| I get good grades.                              | Strongly<br>Agree    | Neutral              | Neutral              |
| I often get into trouble.                       | Disagree             | Agree                | Agree                |
| I like to play rough.                           | Strongly<br>Disagree | Strongly<br>Agree    | Strongly<br>Agree    |
| I like to tell others what to do.               | Strongly<br>Agree    | Strongly<br>Disagree | Strongly<br>Agree    |
| I like to tease others.                         | Strongly<br>Disagree | Strongly<br>Disagree | Strongly<br>Disagree |
| I like to leave others out of group activities. | Strongly<br>Disagree | Strongly<br>Disagree | Strongly<br>Disagree |
| I prefer to play. . .                           | With a group         | With a group         | With a group         |

Table 7

*Results From the Postintervention Social Validity Questionnaire—Tutors*

| Statement/Question                          | Jake              | Nick              | Nathan            |
|---|-------------------|-------------------|-------------------|
| I liked serving the role as a tutor         | Strongly<br>Agree | Strongly<br>Agree | Strongly<br>Agree |
| I am better at helping others.              | Strongly<br>Agree | Strongly<br>Agree | Strongly<br>Agree |
| I like helping others learn.                | Strongly<br>Agree | Strongly<br>Agree | Strongly<br>Agree |
| I would like to keep tutoring in the future | Strongly<br>Agree | Neutral           | Strongly<br>Agree |

Results of the postintervention social validity questionnaire for the tutees are displayed in Table 8. Overall, the results showed all three tutees strongly agreed that their tutor did a great job as a tutor. All three tutees would like to continue receiving tutoring in the future and agreed that other students would benefit from the intervention. Yee and Kong both believed they were better at vocabulary; however, Kim disagreed and did not feel he was better at vocabulary.

Table 8

*Results From the Postintervention Social Validity Questionnaire—Tutees*

| Statement/Question                              | Yee               | Kong              | Kim               |
|---|-------------------|-------------------|-------------------|
| I am better at (e.g., spelling, math).          | Strongly<br>Agree | Agree             | Disagree          |
| I think my tutor did a great job as a tutor.    | Strongly<br>Agree | Strongly<br>Agree | Strongly<br>Agree |
| I would like to receive tutoring in the future. | Strongly<br>Agree | Agree             | Agree             |
| I think other students should receive tutoring. | Agree             | Strongly<br>Agree | Strongly<br>Agree |

## Chapter 5

### DISCUSSION

The purpose of this study was to evaluate effectiveness of a peer tutoring intervention for increasing appropriate interactions of children identified as bullies. The study also was designed to examine the effects of the intervention on the academic performance of both the tutors and tutees. Previous literature has shown that peer tutoring can be effective for children in general education (Cushing & Kennedy, 1997), children with autism (Kamps et al., 1989), and socially rejected and isolated boys (Gumpel & Frank, 1999). Further, some studies (Franca et al., 1990; Maheady & Sainato, 1985) have collected data on both tutors' and tutees' academic performance and social interactions. However, students labeled as bullies have not been targeted in studies examining the effects of peer tutoring as a strategy to improve academic success and social skills. The peer tutoring intervention was selected as a potential means for decreasing bullying behavior because such interventions allow tutors access to "control" of other children in appropriate ways. Therefore, it was hypothesized that serving as a peer tutor had the potential to allow access to the children's potential reinforcers (i.e., controlling others) while also teaching appropriate social skills. It also was predicted that the peer tutoring intervention would result in reduced inappropriate social interactions in students labeled as bullies by increasing their appropriate social interactions.

Unfortunately, no discernable treatment effects were observed for social interactions or for academic performance for any of the participants. A possible explanation for the failure to obtain treatment effects for social interactions may

have been that the setting in which the interactions were observed was not representative of when bullying tended to occur. Students' reports of inappropriate social interactions and the office discipline referrals tended to occur on the playground or at the bus stop rather than in the classroom. Therefore, if social interactions had been observed in different settings (e.g., cafeteria, recess, bus stop) throughout the day, results may have differed. In addition, baseline results indicated a low percentage of inappropriate social interactions for both Jake and Nathan. Therefore, these two students were already engaging in more appropriate social interactions than inappropriate social interactions leaving little room for improvement over baseline rates.

It also is possible that aspects of the measurement system affected results. First, data collection began near the end of the school year, which limited the number of baseline and experimental sessions. In addition, data on social interactions were collected only during the morning part of the day, which precluded observations of other interactions throughout the later part of the day. Moreover, the duration of the intervention limited the time the tutors spent helping the tutees, which in turn may have limited their opportunities to serve a position of power and status among their peers. The limited time tutors had to serve as tutors may have also been affected by Nick and Nathan's poor school attendance towards the end of the study, which prevented them from tutoring on a most consistent basis. Therefore, the lack of data for Nick and Nathan precludes firm conclusions regarding the effectiveness of the intervention.

Despite discouraging results with regard to increasing appropriate social interactions for the tutors, it is worth mentioning that the target students did not engage in inappropriate social interactions that required disciplinary actions during the course of the study. Moreover, the teacher rated Jake as displaying



“average” self-control behaviors after the termination of the study, which represented an improvement over his “fewer” subscale behavior rating at the beginning of the study (a rating of “fewer” indicated that Jake displayed fewer self-controlling behaviors that is considered average for students in the comparison group). She also rated Jake as displaying an improvement in externalizing behaviors (e.g., verbal or physical aggression toward others, poor control of temper, and arguing). Additionally, the teacher rated Nick as displaying “average” cooperative behaviors (e.g., helping others, sharing materials, and complying with rules and directions) at the end of the study, which was an improvement over his “fewer” subscale behavior rating at the start of the study. However, the positive teacher ratings for Jake and Nick need to be interpreted with caution. It is possible that since the teacher knew Jake and Nick were part of this study, this knowledge may have affected her ratings more so than the actual changes in behavior. Therefore, one possible way to have gained more accurate ratings would have been to have kept the teacher blind to what the target behaviors were. It is also important to emphasize again that although results may show differences in some domains of the SSRS; these differences can not be attributed to the intervention since Nick had very little exposure to peer tutoring.

A related concern is the apparent mismatch between children’s and teacher’s ratings of behavior and direct observation data. This mismatch suggests that validity of the questionnaire addressing the dependent variables is questionable and responses should be interpreted with caution. The lack of correspondence may also be explained by the possibility that the direct observation data occurred at times when the children were not exhibiting improved social skills. Therefore the timing at which the observation data

occurred may have caused observers to miss other instances when the children engaged in appropriate social interactions. Alternatively, it is possible that the subjective self-report measures did not reflect actual changes in behavior, but expectancies about changes in behavior.

With regard to academic scores, none of the participants showed any consistent improvement. Although the lack of treatment effects could be an artifact of insufficient samples of work, it might also be accounted for by other variables (i.e., academic ability and classroom behavior). The teacher reported on the SSRS that Nick and Nathan's intellectual functioning compared with other children in the classroom was in the middle 40% at the start and at the end of the study. She rated Jake's intellectual functioning to be at the next highest 20% at the start of the study and at the middle 40% at the end of the study. Therefore, the teacher did not appear to believe that the tutors were academically incompetent. However, she rated Jake's overall classroom behaviors to be at the lowest 10% at the start of the study and at the next lowest 20% at the end of the study. Nick and Nathan's overall classroom behaviors were rated to be at the lowest 10% at the start of the study and at the next lowest 20% at the end of the study when compared with other children in the classroom. These ratings suggest that behavior problems interfered with the academic performance for all three tutors. Therefore, it appears that more specific contingencies for appropriate behavior might have been necessary to produce academic gains for the tutors. Specifically, contingencies that required work completion prior to tutoring a peer may have been helpful, given that the tutors reported liking tutoring sessions. With regard to the lack of change in academic scores for both tutors and tutees, these findings might be accounted for by a failure to generalize. In other words, the tutors and tutees may not have transferred what

they learned during the tutoring sessions to completing similar tasks in nontutoring peer tutoring settings.

Another potentially relevant variable in explaining the study's outcomes involves personal challenges that Jake encountered during the course of the study. Jake was experiencing problems with his parents' divorce, which likely influenced his behavior at school. Jake's teacher reported that he appeared easily irritable during the morning when he arrived to school. She reported that he would come into the classroom discussing family issues openly, especially on a Monday after a weekend. Moreover, the students' reports of inappropriate social interactions for Jake occurred on days when he openly discussed family issues. Despite some dealing with some difficult family issues, it is interesting to note that peer tutoring appeared to remain a reinforcing activity for Jake. In fact, there was one day when he came in saying he did not want to tutor because he was sad because his mom had left the house; shortly after this statement he changed his mind and indicated he wanted to complete the tutoring session with his peer.

An interesting finding of this study was that the tutors did not believe they teased others or left others out of group activities, and that they already believed they were good at helping others. The tutors' post-intervention social validity questionnaires and the SSRS (Student Form) results also indicated that tutors believed they had good social skills. This finding is congruent with literature examining bullies' self-perceptions of their behavior and social skills. Bullies typically feel good about themselves and believe they have good peer interactions (Vaillancourt, Hymel, & McDougall, 2003). Further evidence for the mismatch between the tutors' actual social skills and their perceptions of those skills can be found in comparing the teacher's and tutors' reports. Specifically,

Jake judged his social skills as “average” before the intervention and as “more” after the intervention. Nick and Nathan tended to judge their social skills as “average” before and after the intervention while their teacher rated all three tutors as displaying “fewer” social skills than what was considered average for students in the comparison group before and after the intervention.

Despite the shortcomings found in the present study, the procedures and results raise important questions that could possibly contribute to future research. One interesting question that warrants mention is whether the peer tutoring intervention would have yielded different results if the tutors and tutees changed roles throughout the study. Perhaps tutors may have benefited academically had *they* received tutoring on a specific academic area they needed remediation in. Therefore, future research may examine the effects of reciprocal peer tutoring.

Future research should also take into account the possibility that it might matter *who* a bully tutors. It is possible that bullies may acquire greater social benefits if paired with tutees they have victimized before. Pairing bullies with victims during peer tutoring sessions would inevitably raise ethical concerns, but such strategies might be presented to parents as a way to stop their children from being bullied.

Future studies might also collect data on tutor behavior toward the tutee outside of the tutoring sessions to assess generalization to other settings. It would also be helpful to assess interactions with students other than the tutee, to assess whether acquired skills generalize to other students.

Another question posed by the findings of the present study is whether or not the students labeled as bullies would have made collateral changes in other problem behaviors (e.g., off-task behavior). This study failed to collect data on

off-task behavior in the classroom, which may have been a contributed to the lack of work completion for tutors and tutees. In addition, given that this study did not obtain the completed SSRS questionnaires back from the tutors' parents, it is unknown whether tutors made collateral changes in problem behaviors in the home setting.

Finally, future investigations should more carefully evaluate whether school-wide approaches may be a potentially better solution to bullying behaviors, in that they have the potential to capture a larger number of students. A potential reason for lack of treatment effects may be that there were more appropriate procedures for changing the bullying behaviors exhibited by the target participants. Perhaps a school-wide approach to intervention, where the whole school is made aware of the extent of bullying as well as the anti-bullying policies that will be implemented (Smith, Schneider, et al., 2004), should have been implemented in addition to the peer tutoring intervention. However, the potential academic and social benefits of peer tutoring should not be overlooked since if implemented school-wide, it could potentially achieve the same effects, in addition to having the potential to improve academic performance. Clearly, more research on this particular peer tutoring protocol would be needed to determine whether school-wide peer tutoring programs are worth pursuing as anti-bullying interventions.

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## APPENDICES

APPENDIX A  
PARENT CONSENT FORM

Dear Parent or Guardian,

We would like to ask your permission for your child to participate in a research study aimed at increasing the social and academic skills through the use of peer tutoring. The purpose of this study is to gain a better understanding of the effects peer tutoring can bring about both for the tutor and the tutee. We will be directly assessing social interactions between your child and his/her peers as well as his/her academic performance. All procedures involved in the study have been approved by California State University, Fresno's Institutional Review Board and by your child's school. If you decide to participate in this study, please carefully read the information provided below prior to signing this consent form. This document describes the study and your rights as a participant in this research.

*What is involved?* Students who participate will be asked to spend a total of about 15 minutes engaging in a highly supervised peer tutoring session ("extra help" period). Sessions will be conducted within classroom activities during stations. Peer tutors will be in charge of their own station while having their teacher or researcher in close proximity. Typical components of peer tutoring will consist of the presentation of drill and practice flashcards, instructions, error correction, and social reinforcement. If your child will be serving the role as a peer tutor, he/she will participate in a training that will teach all necessary components of peer tutoring during 10-15 minute session in school, three times per week until a mastery criterion is met.

*Potential Benefits and Concerns.* Scheduled peer tutoring sessions will be conducted within the classroom to ensure that your son or daughter does not miss important classroom lessons. There will be at least two adults supervising every session at all times. One possible benefit of being in the study may that positive social interactions will increase for both the tutor and the tutee. Academic performance may improve as well. We cannot guarantee that research participants will receive any benefits from participating in this study, but everyone who helps with this work will be contributing directly to our knowledge of the effects of peer tutoring on social interactions and academic performance, for others who may benefit from this information.

*Participation is voluntary.* Your child's participation in this study is completely voluntary. There will be no penalty if you do not wish your child to be in this study, and he/she may withdraw at any time during the study.

*Alternate Procedures:* No diseases or dysfunctions will be treated, so alternate procedures are not applicable.

*Information is confidential:* Absolute confidentiality of data and records will be maintained. Information on your child will be recorded on a sheet that will not include your child's name or any other identifying information. Names **will not be maintained with data protocols, and informed consent forms will be kept separate from data.** All raw data and forms will be kept under locked secure conditions, and destroyed five years after collection. All information that is obtained in connection with this study and that can be identified with you or your child will remain confidential as allowed within

the law. If you give us your permission by signing this document, we will not disclose any information related to you or your child to anyone. The only exception to confidentiality is that, if during the course of the research we become aware of physical abuse of a child, we are legally obligated to report such information to the proper authorities.

*Information Resources Available to Research Participants:*

- Questions Regarding the Nature of the Research: Dr. Jennifer Austin, (559) 278-3043
- Questions Regarding the Rights of Research Subjects: The CSUF Committee on the Protection of Human Subjects, (559) 278-2083
- Questions Regarding Research-Related Injuries: There should be no danger of such injuries, but any such enquiries should be directed to Dr. Jennifer Austin or to the Committee on the Protection of Human Subjects.

Over the 1-year course of this study, between 6-20 volunteers, depending on initial results, are expected to participate.

Your child's participation in this project is completely voluntary. Your decision whether or not to allow your child to participate will not prejudice your future relations with CSU, Fresno, or with your child's school. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty. The Human Research Committee of the CSUF Department of Psychology, the Human Research Committee of CSUF, has reviewed and approved the procedures for the present research.

You may have a copy of this form to keep. We would appreciate it if you would return the second page on this form whether or not you would like your child to participate, so that we know that this information has reached you. Thank you for your consideration.

YOUR ARE MAKING A DECISION WHETHER OR NOT TO PARTICIPATE. YOUR SIGNATURE INDICATES THAT YOU HAVE DECIDED TO PARTICIPATE, HAVING READ THE INFORMATION PROVIDED ABOVE.

\_\_\_\_\_

Date

\_\_\_\_\_

Parent's Signature

\_\_\_\_\_

Subject's Name (Please Print)

\_\_\_\_\_

Project Director's Signature  
Jennifer L. Austin, Ph.D, BCBA  
Professor Department of Psychology

\_\_\_\_\_

Veronica Galaviz, BA  
Graduate Student  
Department of Psychology

APPENDIX B  
PARTICIPANT ASSENT FORM (TUTOR)

I am being asked to help Ms. Veronica Galaviz and Dr. Austin in a study. The goal of the study is to increase positive social interactions and academic skills of kids in my class.

If I decide to participate, my part in the study will involve serving the role as a tutor for my peers during stations. I will be asked to spend a total of about 15 minutes engaging in peer tutoring sessions approximately three times per week. Sessions will be conducted within classroom activities during stations. I will be in charge of my own station in my classroom. I will participate in a training that will teach all necessary steps of peer tutoring during 10-15 minute sessions in school, three times per week until I am ready to tutor.

The first time I will engage in some training if I am to serve the role as a “special helper”. I will learn how to teach my peers to respond to drills using flashcards. I will be asked to engage in one on one “extra help” periods lasting approximately 15 minutes during classroom activities.

This study has been explained to me and I have been allowed to ask questions about it. I understand that I do not have to fill out the questionnaire or participate in the peer tutoring sessions if I don’t want to and no one will treat me badly. I have read this form, understand the study, and agree to participate.

Student \_\_\_\_\_

Date \_\_\_\_\_

Project Director \_\_\_\_\_

Date \_\_\_\_\_

Researcher \_\_\_\_\_

Date \_\_\_\_\_



APPENDIX C  
PARTICIPANT ASSENT FORM (TUTEE)

I am being asked to help Ms. Veronica Galaviz and Dr. Austin in a study. The goal of the study is to increase positive social interactions and academic skills of kids in my class.

If I decide to participate, my part in the study will involve serving the role as a tutee during peer tutoring stations. I will be asked to spend a total of about 15 minutes engaging in peer tutoring sessions. Sessions will be conducted within classroom activities during stations.

I will be asked to respond to drills using flashcards presented by a tutor. I will be asked to give the correct response to flashcards that have content approved by my teacher that I could use additional practice on.

This study has been explained to me and I have been allowed to ask questions about it. I understand that I do not have to fill out the questionnaire or participate in the peer tutoring sessions if I don't want to and no one will treat me badly. I have read this form, understand the study, and agree to participate.

Student\_\_\_\_\_

Date\_\_\_\_\_

Project Director\_\_\_\_\_

Date\_\_\_\_\_

Researcher\_\_\_\_\_

Date\_\_\_\_\_

APPENDIX D

PARTIAL INTERVAL RECORDING FORM (3 PAGES)

Observation sessions will be duration of 15 minutes divided into ninety equal intervals of 10 seconds each for each participant.

| 1 min        |      | 2 min        |      | 3 min        |      | 4 min        |      | 5 min        |      |
|--------------|------|--------------|------|--------------|------|--------------|------|--------------|------|
| Target       | Peer | Target       | Peer | Target       | Peer | Target       | Peer | Target       | Peer |
| ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    |
| ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    |
| NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   |
| ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    |
| ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    |
| NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   |
| ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    |
| ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    |
| NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   |
| ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    |
| ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    |
| NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   |
| ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    | ☺ V<br>⊗ V   | ☺    |
| ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    | ☺ NV<br>⊗ NV | ⊗    |
| NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   |

**Codes:** ☺=Appropriate Interaction, ⊗=Inappropriate Interaction, V=Verbal, NV=Nonverbal, NI=No interaction

Observation sessions will be duration of 15 minutes divided into ninety equal intervals of 10 seconds each for each participant.

| 6 min        |      | 7 min        |      | 8 min        |      | 9 min        |      | 10 min       |      |
|--------------|------|--------------|------|--------------|------|--------------|------|--------------|------|
| Target       | Peer | Target       | Peer | Target       | Peer | Target       | Peer | Target       | Peer |
| ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    |
| ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    |
| NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   |
| ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    |
| ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    |
| NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   |
| ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    |
| ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    |
| NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   |
| ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    |
| ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    |
| NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   |
| ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    |
| ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    |
| NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   |

**Codes:** ☺=Appropriate Interaction, ☹=Inappropriate Interaction, V=Verbal, NV=Nonverbal, NI=No interaction

Observation sessions will be duration of 15 minutes divided into ninety equal intervals of 10 seconds each for each participant.

| 11 min       |      | 12 min       |      | 13 min       |      | 14 min       |      | 15 min       |      |
|--------------|------|--------------|------|--------------|------|--------------|------|--------------|------|
| Target       | Peer | Target       | Peer | Target       | Peer | Target       | Peer | Target       | Peer |
| ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    |
| ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    |
| NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   |
| ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    |
| ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    |
| NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   |
| ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    |
| ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    |
| NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   |
| ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    |
| ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    |
| NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   |
| ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    | ☺ V<br>☹ V   | ☺    |
| ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    | ☺ NV<br>☹ NV | ☹    |
| NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   | NI           | NI   |

**Codes:** ☺=Appropriate Interaction, ☹=Inappropriate Interaction, V=Verbal, NV=Nonverbal, NI=No interaction

APPENDIX E  
PREINTERVENTION SOCIAL VALIDITY QUESTIONNAIRE (TEACHER)

Please read each item carefully, and then circle the answer that best reflects your perceptions.

1) Bullying is a problem in my classroom.

**Strongly Agree**    **Agree**    **Neutral**    **Disagree**    **Strongly Disagree**

2) Bullying is a problem in my *school*.

**Strongly Agree**    **Agree**    **Neutral**    **Disagree**    **Strongly Disagree**

3) Additional intervention services for bullies are needed in my school.

**Strongly Agree**    **Agree**    **Neutral**    **Disagree**    **Strongly Disagree**

4) I think peer tutoring will be helpful in improving social interactions for *tutors*.

**Strongly Agree**    **Agree**    **Neutral**    **Disagree**    **Strongly Disagree**

5) I think peer tutoring will be helpful in improving social interactions for *tutees*.

**Strongly Agree**    **Agree**    **Neutral**    **Disagree**    **Strongly Disagree**

6) I think peer tutoring will be helpful in improving academic performance of my students.

**Strongly Agree**    **Agree**    **Neutral**    **Disagree**    **Strongly Disagree**

7) Please indicate whether you feel you have effective procedures in place in your classroom to help you deal with bullying behavior. If so, what are they?

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8) When do you think will be the best time to implement the peer tutoring intervention?

a) \_\_\_\_\_

b) \_\_\_\_\_

c) \_\_\_\_\_

9) Specify the reason(s) why you labeled the target kid a bully?

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APPENDIX F  
POSTINTERVENTION SOCIAL VALIDITY QUESTIONNAIRE  
(TEACHER)

Please read each item carefully, and then circle the answer that best reflects your perceptions.

1) Peer tutoring was helpful in improving social interactions for *tutors*.

**Strongly Agree** **Agree**                      **Neutral Disagree**                      **Strongly Disagree**

2) Peer tutoring was helpful in improving social interactions for *tutees*.

**Strongly Agree** **Agree**                      **Neutral Disagree**                      **Strongly Disagree**

3) I think peer tutoring was helpful in decreasing negative interactions for *tutors*.

**Strongly Agree** **Agree**                      **Neutral Disagree**                      **Strongly Disagree**

4) I think peer tutoring was helpful for *tutors* to become more academically competent.

**Strongly Agree** **Agree**                      **Neutral Disagree**                      **Strongly Disagree**

5) I think peer tutoring was helpful for *tutees* to become more academically competent.

**Strongly Agree** **Agree**                      **Neutral Disagree**                      **Strongly Disagree**

6) Peer tutoring was helpful in changing students' perceptions of *tutors*. **Strongly Agree** **Agree**

**Neutral Disagree**                      **Strongly Disagree**

7) The peer tutoring intervention was a good fit for my classroom.

**Strongly Agree** **Agree**                      **Neutral Disagree**                      **Strongly Disagree**

8) I think the intervention was disruptive to classroom activities/instruction.

**Strongly Agree** **Agree**                      **Neutral Disagree**                      **Strongly Disagree**

If the intervention was disruptive to classroom activities/instruction, I think the amount of behavior change was worth it.

**Strongly Agree** **Agree**                      **Neutral Disagree**                      **Strongly Disagree**

9) I think I would recommend this intervention to other teachers.

**Strongly Agree** **Agree**                      **Neutral Disagree**                      **Strongly Disagree**

10) I would like to use this intervention in my classroom in the future.

**Strongly Agree** **Agree**                      **Neutral Disagree**                      **Strongly Disagree**

11) I am confident I can use this intervention in my classroom without the researcher present.

**Strongly Agree** **Agree**                      **Neutral Disagree**                      **Strongly Disagree**

12) I think I could use this intervention in my classroom with different types of students or behaviors.

**Strongly Agree** **Agree**                      **Neutral Disagree**                      **Strongly Disagree**

13) I think the behaviors I used to label the target kid(s) a bully have changed as a result of this intervention.

**Strongly Agree** **Agree**                      **Neutral Disagree**                      **Strongly Disagree**

APPENDIX G  
PREINTERVENTION SOCIAL VALIDITY QUESTIONNAIRE  
(TUTOR)

*Please read each item carefully, and then circle the answer that best reflects you.*

1) I am good at helping others.

**Strongly Agree**   **Agree**   **Neutral**   **Disagree**   **Strongly Disagree**

2) I have many friends.

**Strongly Agree**   **Agree**   **Neutral**   **Disagree**   **Strongly Disagree**

3) I get good grades.

**Strongly Agree**   **Agree**   **Neutral**   **Disagree**   **Strongly Disagree**

4) I often get into trouble.

**Strongly Agree**   **Agree**   **Neutral**   **Disagree**   **Strongly Disagree**

5) I like to play rough.

**Strongly Agree**   **Agree**   **Neutral**   **Disagree**   **Strongly Disagree**

6) I like to tell others what to do.

**Strongly Agree**   **Agree**   **Neutral**   **Disagree**   **Strongly Disagree**

7) I like to tease others.

**Strongly Agree**   **Agree**   **Neutral**   **Disagree**   **Strongly Disagree**

8) I like to leave others out of group activities.

**Strongly Agree**   **Agree**   **Neutral**   **Disagree**   **Strongly Disagree**

9) I prefer to play. . .

- a) **alone**
- b) **with one person**
- c) **with two people**
- d) **with a group**

APPENDIX H  
POSTINTERVENTION SOCIAL VALIDITY QUESTIONNAIRE (TUTOR)

*Please read each item carefully, and then circle the answer that best reflects you.*

1) I liked serving the role as a tutor.

**Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree**

2) I am better at helping others.

**Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree**

3) I like helping others learn.

**Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree**

4) I would like to keep tutoring in the future.

**Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree**

APPENDIX I  
POSTINTERVENTION SOCIAL VALIDITY QUESTIONNAIRE  
(TUTEE)

*Please read each item carefully, and then circle the answer that best reflects you.*

1) I am better at (e.g., spelling, math).

**Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree**

2) I think my tutor did a great job as a tutor.

**Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree**

3) I would like to receive tutoring in the future.

**Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree**

4) I think other students should receive tutoring.

**Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree**



APPENDIX J

QUIZ

1. What are the dependent variables and their definitions in this study?
  - a. \_\_\_\_\_  
\_\_\_\_\_ *Answer: Appropriate verbal interaction*
  - b. \_\_\_\_\_  
\_\_\_\_\_ *Answer: Appropriate nonverbal interaction*
  - c. \_\_\_\_\_  
\_\_\_\_\_ *Answer: Inappropriate verbal interaction*
  - d. \_\_\_\_\_  
\_\_\_\_\_ *Answer: Inappropriate nonverbal interaction*
  - e. \_\_\_\_\_  
\_\_\_\_\_ *Answer: Academic Performance*
  
2. What is the independent variable in this study?
  - a. \_\_\_\_\_ *Answer: Peer tutoring*
  
3. Give three examples of a Appropriate verbal interactions:
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  
4. Give three examples of a Appropriate nonverbal interaction:
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  
5. Give three examples of a Inappropriate verbal interaction:
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  
6. Give three examples of a Inappropriate nonverbal interaction:
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_

APPENDIX K  
TUTOR DATA SHEET

|               |               |               |               |               |               |               |               |               |                |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| 1.<br>+<br>—  | 2.<br>+<br>—  | 3.<br>+<br>—  | 4.<br>+<br>—  | 5.<br>+<br>—  | 6.<br>+<br>—  | 7.<br>+<br>—  | 8.<br>+<br>—  | 9.<br>+<br>—  | 10.<br>+<br>—  |
| 11.<br>+<br>— | 12.<br>+<br>— | 13.<br>+<br>— | 14.<br>+<br>— | 15.<br>+<br>— | 16.<br>+<br>— | 17.<br>+<br>— | 18.<br>+<br>— | 19.<br>+<br>— | 20.<br>+<br>—  |
| 21.<br>+<br>— | 22.<br>+<br>— | 23.<br>+<br>— | 24.<br>+<br>— | 25.<br>+<br>— | 26.<br>+<br>— | 27.<br>+<br>— | 28.<br>+<br>— | 29.<br>+<br>— | 30.<br>+<br>—  |
| 31.<br>+<br>— | 32.<br>+<br>— | 33.<br>+<br>— | 34.<br>+<br>— | 35.<br>+<br>— | 36.<br>+<br>— | 37.<br>+<br>— | 38.<br>+<br>— | 39.<br>+<br>— | 40.<br>+<br>—  |
| 41.<br>+<br>— | 42.<br>+<br>— | 43.<br>+<br>— | 44.<br>+<br>— | 45.<br>+<br>— | 46.<br>+<br>— | 47.<br>+<br>— | 48.<br>+<br>— | 49.<br>+<br>— | 50.<br>+<br>—  |
| 51.<br>+<br>— | 52.<br>+<br>— | 53.<br>+<br>— | 54.<br>+<br>— | 55.<br>+<br>— | 56.<br>+<br>— | 57.<br>+<br>— | 58.<br>+<br>— | 59.<br>+<br>— | 60.<br>+<br>—  |
| 61.<br>+<br>— | 62.<br>+<br>— | 63.<br>+<br>— | 64.<br>+<br>— | 65.<br>+<br>— | 66.<br>+<br>— | 67.<br>+<br>— | 68.<br>+<br>— | 69.<br>+<br>— | 70.<br>+<br>—  |
| 71.<br>+<br>— | 72.<br>+<br>— | 73.<br>+<br>— | 74.<br>+<br>— | 75.<br>+<br>— | 76.<br>+<br>— | 77.<br>+<br>— | 78.<br>+<br>— | 79.<br>+<br>— | 80.<br>+<br>—  |
| 81.<br>+<br>— | 82.<br>+<br>— | 83.<br>+<br>— | 84.<br>+<br>— | 85.<br>+<br>— | 86.<br>+<br>— | 87.<br>+<br>— | 88.<br>+<br>— | 89.<br>+<br>— | 90.<br>+<br>—  |
| 91.<br>+<br>— | 92.<br>+<br>— | 93.<br>+<br>— | 94.<br>+<br>— | 95.<br>+<br>— | 96.<br>+<br>— | 97.<br>+<br>— | 98.<br>+<br>— | 99.<br>+<br>— | 100.<br>+<br>— |

APPENDIX L  
TREATMENT INTEGRITY CHECKLIST

- \_\_\_\_\_ 1) show the card to the tutee
- \_\_\_\_\_ 2) wait at least 5s for a response
- \_\_\_\_\_ 3) if a correct response is given, give praise
- \_\_\_\_\_ 4) if the incorrect answer is given, provide the correct answer and present the card again
- \_\_\_\_\_ 5) record the nature of the response (correct or incorrect) on a data sheet (e.g., plus or minus sign)

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