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The efficacy of positive peer reporting procedures for use with neglected-status students in general education classrooms

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THE EFFICACY OF POSITIVE PEER REPORTING PROCEDURES FOR USE WITH
NEGLECTED-STATUS STUDENTS IN GENERAL EDUCATION CLASSROOMS

A Thesis

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Master of Arts

in

The Department of Psychology

by
Lisa Libster
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ABSTRACT

Children who are neglected or rejected by their peers may require social skill interventions in order to develop the social competencies needed to establish satisfactory interpersonal relationships. One promising social skill intervention is Positive Peer Reporting, which has been shown to produce increases in positive social interaction and peer acceptance for these groups of children. As most previous investigations were conducted in residential or special education settings, further research is needed to support the use of this intervention in general education settings. Therefore, the present study examined the efficacy of Positive Peer Reporting with two neglected-status children in general education classrooms. Both participants demonstrated improvements in the quality of social interactions, assessed through classroom and recess observations, as well as increased peer acceptance. However, the participants displayed differing responses to the intervention. For the first participant, the major impact of the intervention was the reduction of negative interactions, while the second participant demonstrated dramatic increases in positive interactions. Overall, these findings support the use of Positive Peer Reporting for improving the acceptance and quality of interactions for students who are neglected by peers in general education classrooms.

INTRODUCTION

The school environment offers unparalleled opportunities for children to acquire and practice social skills, as students typically spend 30 hours per week with peers and teachers (Gresham, 2001). Despite this social exposure, some children fail to develop important social skills and competencies. These children are at risk for experiencing rejection from both peers and teachers and have a higher likelihood of being referred to special education classes (Gresham, 1998). Long-term risks for these children include higher rates of dropout, criminal behavior, and adult psychopathology (Gresham, 2001; Parker & Asher, 1987). Accordingly, difficulties in the realm of social competencies are part of DSM-IV diagnostic criteria for a variety of disorders, and represent two out the five criteria used to establish an educational diagnosis of emotional disturbance under the Individuals with Disabilities Education Act (American Psychiatric Association, 1994; IDEA, 2004).

Taking into account the personal and societal impact of these outcomes, students who exhibit social skills deficiencies may benefit from social skills interventions (SSIs) in order to reduce the risk of these negative outcomes. As a group, SSIs are only moderately effective; however, social skill interventions that match an individual's deficits to intervention and specifically address generalization and maintenance of treatment effects should produce more durable results (Gresham, 1998; Gresham, Cook, Crews, & Kern, 2004).

REVIEW OF LITERATURE

Peer-Mediated Interventions

Peer-mediated intervention may contain several strategies, which may serve to promote generalization and maintenance of treatment effects. As suggested by the title, these interventions utilize peers as behavior change agents, and generally produce immediate increases in social interaction and competency (Odom & Strain, 1991). As peer mediated interventions are typically implemented in natural settings, problems with discrimination between conditions are less likely to occur. Kohler and Greenwood (1986) categorize peer-mediated reinforcement as a type of natural reinforcement contingency. This strategy exploits peers as a source of reinforcement, and the increase in social reinforcement may serve to elicit future pro-social behaviors. However, these two generalization strategies may not be enough to produce durable treatment effects. Mathur and Rutherford (1991) suggest that combining peer-mediated interventions with several of Stokes and Oneses (1989) generalization programming tactics may produce socially significant gains in social competency.

Overview of Positive Peer-Reporting

Positive Peer Reporting (PPR) is a peer-mediated social skills intervention that shows promise in producing socially valid and generalized treatment effects. This procedure is used to increase positive social interaction and peer acceptance in children who are neglected or rejected by peers. PPR procedures typically employ a dependent group contingency in which peers earn reinforcement for publicly praising the target child's (often introduced to the class as the Most Valuable Player, or MVP pro-social behavior) pro-social behaviors during a specified reporting session. The target child receives reinforcement for engaging in pro-social behaviors, thereby increasing the probability that they will engage in these behaviors again. In turn, the child's peers earn reinforcement (typically in the form of points toward a class reward) for praise statements, thus increasing the likelihood that the peers will notice pro-social behavior in the future.

PPR differs from traditional social skills interventions in that social skills are not explicitly taught. In PPR procedures, classmates reinforce a response class of pro-social behaviors that is already a part of the child's behavioral repertoire (Skinner, Neddeneriep, Robinson, Ervin & Jones, 2002). In this manner, PPR can be described as an intervention targeting social skill performance deficits, rather than targeting social skill acquisition deficits that are most frequently targeted by traditional social skill interventions.

PPR interventions generally adhere to the following procedure (Skinner, et al., 2002, see also Ervin, Johnston & Friman, 1998 and Hoff & Ronk, 2006):

1. Identification of target student. Children referred for participation in PPR studies tend to exhibit low rates of positive social behavior, high rates of negative or aggressive behavior and appear to be socially isolated from classmates.
2. Training session 1: Students are taught to identify and reinforce positive social behavior. Students practice making appropriate praise statements that are genuine, specific and describe positive social behavior.
3. Training session 2: Positive peer reporting procedure is introduced to the class. Children learn that they may earn reinforcement for publicly praising the target student's pro-social behaviors during the specified reporting time.
4. Daily PPR session: The teacher selects the target child as the MVP. At the start of each day, children are reminded of the MVP, and of the opportunity to earn reinforcement during the reporting session. During these sessions, the teacher rewards genuine and specific praise statements.
5. Progress monitoring: The researcher or teacher compares baseline and treatment levels of positive, negative and neutral social interactions, as assessed

through direct observations. Sociometric effects are assessed through comparison of pre and post treatment nominations and ratings.

PPR may produce socially valid outcomes by restructuring the classroom social environment (Jones, Young, & Friman, 2000; Moroz & Jones, 2002; Skinner et al., 2002). First, PPR encourages students to notice positive behaviors rather than negative behaviors. The opportunity to earn reinforcement may encourage peers to initiate more interactions toward the target child. Second, the reporting session also may serve to increase the accessibility of positive peer attention as a naturally occurring source of reinforcement for engaging in pro-social behaviors. In turn, this may encourage the target child to initiate more interactions. Furthermore, PPR capitalizes on incidental learning to create more opportunities for reinforcement (Skinner et al., 2002). For example, the teacher may fail to notice when the target child shares his crayons; however, the peers may report this behavior during the reporting session. Thus, PPR provides ample opportunities for children to practice social skills, as children may be reinforced for any occurrence of pro-social behaviors throughout the day (Jones et al., 2000; Skinner et al., 2002).

PPR may also be effective due to the inclusion of number of Stokes and Osnes' (1989) recommended tactics for improving generalization. First, peers may reinforce any pro-social behavior, rather than targeting specific social skills. In this manner, positive peer reporting employs the "train loosely" strategy described by Stokes and Osnes. Next, PPR exploits current functional contingencies by increasing the amount of social reinforcement available to the target child through the introduction of reporting sessions. This increase in reinforcement may encourage the target child to engage in future pro-social behaviors. Finally, as all phases of the intervention take place within the context of the child's natural environment, discrimination problems are unlikely to occur (Gresham, 1994).

PPR offers many practical benefits over traditional social skills interventions. Compared to most commercially available curricula, PPR is easy to implement, requires only a brief

investment of time and resources, and is generally rated as highly acceptable by teachers and classmates (Ervin et al., 1998). No special training is required for teachers to implement the intervention. Procedures and materials are available online through Jim Wright's www.interventioncentral.com (2007). Finally, and perhaps most impressively, PPR can produce changes in peer acceptance in a short amount of time, as soon one week of treatment (Hoff & Ronk, 2006). Although gains seem slight at first, these gains become significant upon consideration that positive changes in peer acceptance rarely occur in social skills interventions (Bower, McGinnis, Friman, & Ervin, 1999; DuPaul & Eckert, 1994).

Review of the PPR Literature

PPR was first developed by Grieger, Kaufman and Grieger (1976) as a class-wide intervention to reduce aggression and increase cooperation in kindergarten classrooms (Bowers et al., 1999). During a daily sharing session, kindergarteners were asked to name a peer who was friendly to them during playtime. At first, these children received a happy face badge as a reward from their teacher. In the next phase of the study, peer praise was substituted for the tangible reinforcer. The praise only condition successfully reduced aggression and increased cooperative behavior in these classrooms. Anecdotally, the authors noted that socially isolated children played more with peers after these reporting sessions.

Years later, Ervin, Miller and Friman (1996) developed a similar procedure to improve peer acceptance and positive social behavior of Allison, a socially rejected girl in a middle school special education classroom. Allison was introduced to her classmates as the MVP and her classmates were told that they could earn reinforcement (via points in a token economy) for noticing and reporting Allison's pro-social behavior. During the last five minutes of class, the teacher awarded points to classmates who made genuine and specific reports of Allison's positive behaviors. Intervention effects were assessed through comparison of the quality of Allison's social interactions between baseline and treatment phases and through sociometric

gains. Positive interactions were defined as cooperation, giving help, conversation and pleasant interactions. Negative interactions were defined as negative verbal or physical behaviors and neutral defined intervals with no social interactions. Allison engaged in high levels of negative interactions, and low levels of positive interactions during the baseline phases and engaged in high levels of positive interactions and near-zero levels of negative interactions during treatment phases. Additionally, a comparison of pre and post intervention sociometric ratings indicated an improvement social ranking (Ervin et al., 1996). These results suggest that PPR procedures may improve the quality of social interactions and peer acceptance.

Ervin et al. (1998) replicated these results with younger participant in a general education setting. Brittany, a girl in a first grade general education classroom, was rejected by peers (as indicated by low sociometric rating and no positive nominations) and engaged in high rates of negative social behaviors. During the treatment phase, Brittany displayed an increase in positive interactions and a decrease in negative interactions. In post-treatment sociometric measures, Brittany increased one rank in social standings and received two positive nominations (Ervin et al., 1998).

Similar results were found in a series of studies conducted at Girls and Boys Town. Jones et al. (2000) used PPR in a residential middle school program to increase participation in cooperative activities for three social rejected students. The independent variables were the amount of cooperative statements emitted by the target students during a cooperative learning activity and sociometric ratings of the target children. All participants increased the amount of cooperative statements during PPR treatment phase. Students also demonstrated increases in social rankings. Interestingly, the extent of increases correlated with the average amount of cooperative statements emitted by target students during the treatment phase (Jones et al., 2000).

Bowers et al. (1999) employed PPR procedures to improve the social interactions of a rejected adolescent in a residential treatment household. The reporting procedure differed

slightly from previous investigations. Other children in the household privately reported positive observations to family-teachers who then relayed the praise to the target child. As in previous studies, results indicated increases in positive interaction and decreases in negative interaction compared with baseline levels. Results also indicated that the target child improved in social rankings. Additionally, Bowers and colleagues found a large reduction in the amount of daily occurrences of problem behaviors for the target child. A post-treatment probe indicated continuation of this effect after treatment ended. However, as the probe was conducted one day after termination of treatment, these results are insufficient to demonstrate maintenance of treatment effects.

Bowers, Woods, Carolyn and Friman (2000) presented a partial replication of these results in the same setting. Two adolescent males and two adolescent females were introduced to other children in their respective houses as the MVPs of the week. During withdrawal phases, other children in these houses were selected as MVPs to address fairness, although data were not collected for these children. Results indicated that all participants showed an overall increase in positive interaction levels. However, only one child displayed marked decreases in negative interactions. Social rankings improved for three of the four participants.

Other investigators have successfully applied PPR procedures in a variety of other settings. Hoff and Ronk (2006) effectively used PPR to improve the quality of social interactions in a special education classroom for children with cognitive delays. Johnson-Gros and Shriver (2006) used a combination of PPR and compliance-training procedures successfully increased positive social interactions and decreased the negative behaviors of a non-compliant preschooler. Moraz and Jones (2002) assessed the effect of PPR on rate social involvement for three socially withdrawn children in elementary school general education classrooms. However, as noted by Asher, Markell & Hymel (1981), this rate-of-interaction approach only lowly correlates with social status, perhaps because of no information regarding the quality of interactions. Although

all three children increased social involvement interactions, each child showed a different pattern of response to the PPR procedure. These researchers attempted to assess generalization by conducting observations during recess, but neglected to compare social involvement levels in the classroom “training” setting.

Finally, Morrison and Jones (2007) successfully modified PPR for use as a class-wide intervention in two third grade general education classrooms. In this variation, there is no MVP- in other words, children may report the positive behaviors of any classmate. The independent variable in this study was the number of daily behavioral disruptions emitted by any member of the class. In both classrooms, the mean number of behavioral disruptions decreased after class-wide PPR procedures were put in to place. Behavioral disruptions also decreased during lunch and transitions, indicating generality of treatment effects beyond the classroom.

Current Project

PPR is a relatively new intervention that requires further investigation in order to make conclusions regarding the effectiveness of PPR procedures. Only three studies of the 10 total published PPR studies were conducted in general education settings. These studies were limited in that Ervin et al. (1998) only used one student, the study by Moraz and Jones (2002) employed a different set of dependent variables and Morrison and Jones (2007) altered PPR for use as a classwide intervention. Furthermore, previous studies do not use sociometric assessment procedures to identify the target students as poorly accepted. Therefore, it remains unknown whether the social status identified by teachers for referral accurately represents these children’s purported social status.

Participants were identified as neglected by the modified Coie, Dodge and Coppetelli (1982) procedure (for modifications, see Asher & Dodge, 1986). The current study also attempted to provide a systematic assessment of the generality of effects across settings through the use observations of social interactions during the “trained” classroom setting and

unstructured recess setting. Finally, the current study provided more information by reporting whether the target child or the classmate initiated the interactions.

Consistent with results of previous studies, it was hypothesized that PPR will lead to increases in overall positive social interactions and decreases in the amount of negative interactions and non-interactive intervals for all participants, It was also anticipated that this pattern of results would be evident in both the “trained” classroom setting and the “untrained” recesses setting, indicating generalization across settings. Additionally, it was expected that both the participants and their peers would initiate more positive interactions after PPR was introduced. Finally, it was expected that participants would exhibit slight improvements in classroom sociometric status rankings, although changes in social status were not expected.

METHOD

Participants and Setting

The current study was conducted in two general education classrooms in a public elementary school in Baton Rouge, Louisiana. In each classroom, parental permission was obtained to assess class wide sociometrics. Parental permission was obtained for 23 of the 25 students in the first grade class, and for 22 out of the 25 students in the second grade class. The sociometric measures were used to classify students into the sociometric status groups as described by Coie et al. (1982). Students who were classified as neglected status were eligible to be participants for this study. Additionally, potential participants must exhibit excellent school attendance (e.g. no more than five absences this school year prior to start of this study). As part of the exclusionary criteria, potential participants must engage in positive interactions for less than 50% of total intervals during initial observations. This was necessary so that the effect of the intervention could be clearly demonstrated after PPR was implemented. Two children met the above criteria and were eligible as participants in this study after written parental consent and verbal student assent was obtained.

The first participant was Monique, an African-American girl in the second grade. Her teacher described her as very active, and added that Monique often received poor conduct marks for talking too loud in class. She also reported that she had received several complaints from other students about Monique's aggressive behaviors at recess. During baseline observations at recess, Monique spent her time either by herself walking around by herself, engaging in brief positive interactions with girls, or fighting with boys from her class.

The second participant was David, an African-American boy in the first grade. David's teacher described him as painfully shy, and reported that he rarely answered questions in class or participated during group activities. During recess, David kept to himself and spent nearly his entire recess nudging leaves into small piles with his foot.

All phases of the study were conducted during the participant's typical school day. Observations were conducted daily during the participant's recess and in class in the afternoons, during an activity in which the students were allowed to interact with each other as they completed their work. The reporting sessions were conducted each afternoon during the treatment phase of the study.

Materials

A poster (modified from Jim Wright's *What is Praise Poster*) was displayed in each participating classroom (Wright, 2007). These posters stated examples of appropriate praise statements, as developed by students in each classroom. Also displayed was a classroom reinforcement chart that was used to track the number of points earned through appropriate positive reports. A social interaction coding form was used during to code interactions during observations. Other materials included the peer nomination and peer ranking forms, which were developed from the class rosters.

Dependent Measures

A. Sociometrics

Social status and sociometric rankings were assessed pre and post intervention via peer nomination and peer ratings. Both methods were employed because peer nomination methods are necessary to derive social status, but peer-rating methods are more sensitive to change and were used to monitor changes in peer acceptance (Asher & Hymel, 1981).

B. Direct Observations

The primary researcher and research assistants observed social interactions involving the participant, using a 15-second partial-interval recording method. A box was checked in the first interval that an interaction occurred in order to indicate whether the participant or a peer initiated the interaction. Interactions were coded in respect to the behavior of the participant and were classified as positive, negative or neutral. Consistent with previous definitions (see Bowers et al.,

2000; Ervin et al., 1998), positive interactions were operationally defined as any appropriate communicative or goal-oriented interaction between the participant and another student. Examples of positive interactions include working cooperatively on assignments with peers, assisting others in an activity, engaging in conversation and communicating with appropriate social gestures. Negative interactions included any interaction during which the participant engages in negative verbal or physical behavior. Examples of this include teasing or derisive comments, rude gestures, physical aggression such as shoving or hitting, bossiness or tattling. If no interaction occurs (e.g. the participant engaged in a solitary activity), the interval was coded as neutral. If multiple children interacted with the participant, the interval was coded with respect to first interaction that occurred. If an interaction stops for more than five seconds, the interaction was considered completed and the next interaction was considered as a new interaction. If the new interaction occurred within the same interval and continued into the next interval, the observer this and recorded who initiated the interaction in the next interval.

Experimental Design

The current study employed a non-concurrent multiple baseline across-subjects design. Experimental control was demonstrated if each participant's performance changes at the point (not before) when the intervention is introduced (Kazdin, 1982).

Procedures

The primary researcher obtained permission to conduct this study from school administrators. The primary researcher met with interested first, second and third grade teachers to explain the overall purpose of the intervention and to explain the roles and responsibilities of the teacher, primary researcher and research assistants in the study. The intervention was then implemented in the classrooms of teachers who volunteered their participation in this study.

A. Pretreatment Measures

The primary researcher obtained a class roster for each participating classroom, which was used to construct peer nomination and peer rating forms. The primary researcher and the research assistants (graduate or undergraduate psychology students from Louisiana State University) implemented the following procedures with each individual child in the participating classrooms. These researchers read aloud instructions for peer nomination and peer ranking from a standardized script. On the peer nomination form, students named three students who they would most like to spend free time with and three students with whom they would least like to spend free time. This was used to determine social status using the Coie et al. (1982) sociometric procedure (as modified by Asher & Dodge, 1986). These scores were summed to calculate the liked most (LM) and liked least (LL) scores for each student. These scores were then combined to create social impact ($SI = LM + LL$) and social preference ($SP = LM - LL$) scores for each student. These four scores were standardized within the classroom and used to create five social status groups. Children with SP scores over 1 and LM and LL scores greater than zero were classified as popular status. Children with SI scores less than -1, LM scores less than 0 and LL scores greater than zero were classified as rejected status. Children with SI scores greater than 1 and LM and LL scores greater than zero were classified as controversial status. Children with SP scores between -.5 and .5 were classified as average status. Finally, children with SI scores less than -1 and LM and LL scores less than zero were classified as neglected status (see Asher & Dodge, 1986).

On the peer rating, students were read each name aloud and were asked to select the appropriate face (corresponding to 1-5 scale, with a rating of one representing “I don’t want to play with at all, and with a rating of five representing “I want to play with all the time”) to indicate how often they would like to play with that child. The students were informed that all nominations and ratings must remain confidential.

The resulting sociometrics were used to identify neglected students and to obtain pre-treatment and post-treatment social status and social rankings. While some researchers avoid the use of negative nomination procedures, both positive and negative nominations are necessary in order create the standardized scores allow researchers to correctly distinguish between neglected and rejected students (Asher & Dodge, 1986). Research conducted by Hayvren and Hymel (1984) suggests that the use of negative nomination procedures does not appear to have a negative impact on subsequent social interactions between classmates.

B. Baseline Observations

The primary and/or assistant researcher assessed each participant's baseline levels of social interactions during class and during recess each day. At least three data points in both settings were required for each participant before the treatment phases was implemented.

Phase 1: Training. In each classroom, the primary researcher and the teacher lead a 15-minute training session to teach students how to make appropriate praise statements. An appropriate praise statement described a positive social behavior, the situation where the behavior occurred and the people involved, (e.g. "Today I noticed that Tommy loaned Tyrell his pencil sharpener when Tyrell's pencil broke during math"). The primary researcher and teacher modeled appropriate praise and provided examples and non-examples of appropriate praise statements. Together, the primary researcher, teacher and students developed a list of appropriate praise statement examples describing pro-social behaviors. Corrective feedback was provided as necessary. The first grade class required a supplemental 15-minute training session in order for the students to make appropriate praise statements. As further practice, all students completed an activity in which they wrote the components of an appropriate praise on a worksheet and combined them together to make an appropriate praise statement. The primary researcher reviewed these statements and provided praise and corrective feedback as necessary.

The primary researcher led an additional training session to review how to make a specific and genuine praise statement. In this session, the researcher called on students and asked them to report a positive social behavior performed by one of their classmates. Praise and corrective feedback were provided. The researcher then explained that the class would play the “Raise the Praise” game, in which they can earn points toward a class reward for noticing and praising the appropriate social behavior of the “star-raiser”. Students were instructed to remember any positive social behaviors that they noticed the star-raiser engaging in since the last reporting session. At the end of each day, students could report these behaviors and earn points towards the class during a reporting session. Each appropriate praise statement would earn a tally mark on the class reward tally poster. When the class obtains 50 tally marks, the class would earn a class wide reward, as determined by the primary researcher and teacher (e.g. a pizza party).

Phase II: Implementation. After baseline data was collected and the training phase was completed, the teacher “selected” the participant as the “star-raiser.” The teacher and the primary researcher implemented the daily PPR procedure as follows

1. At the beginning of each day, the teacher reminded students that the participant was the “star-raiser” and that students could earn tally points at the end of the day by reporting genuine and specific social behaviors displayed by the “star-raiser” that day.
2. At the end of each day during the treatment phase, the class participated in a positive peer reporting session. The primary researcher or teacher asked students to raise their hands to report a positive social behavior displayed by the “star-raiser” that day.
3. The primary researcher or teacher provided reinforcement in the form verbal praise and a tally point toward the class reward for each specific

and genuine praise statement, as determined by the teacher. If a student made an inappropriate praise statement, corrective feedback was given and students were given one chance to correct the statement.

4. The class obtained the class-wide reward when 50 tally points were obtained.

C. Post Treatment Measures

Social status and social rankings were assessed after the termination of the treatment phase for all participants in the classroom. The research assistants individually administered the peer nomination and the peer rating measures as previously described. The research assistants reminded students that their answers should remain confidential. These measures yielded post-intervention social status and social ranking for each participant.

IOA and Treatment Integrity

Two independent observers (graduate and undergraduate psychology students) simultaneously coded 40% of observations across all phases and settings. IOA was calculated using the interval-by-interval method in which the number of agreement intervals is divided by the total number of agreement and disagreement intervals, and multiplied by one hundred to obtain a percentage agreement. IOA was a mean of 94.53% (range 83.3-100%) in the classroom observations and a mean of 88.66% (range 80-99%) in recess observations.

A research assistant used a 10-item treatment integrity checklist to assess implementation of intervention components. An example of a item is “Announce it is time to play the game: Its time to play Raise the Praise. Who noticed (the target student) doing something nice or friendly today?” Treatment integrity data was collected for 33.3% of all peer reporting sessions and averaged a mean of 93.75% (range of 87.5-100%).

RESULTS

Overall Interactions

Figure 1 displays the overall percentages of social interactions for Monique and David in the classroom setting. Figure 2 displays the overall percentages of social interactions for Monique and David in the recess setting. As in all subsequent figures, circle markers indicate positive interactions, square markers indicate negative interactions and the triangles represent non-interactive intervals.

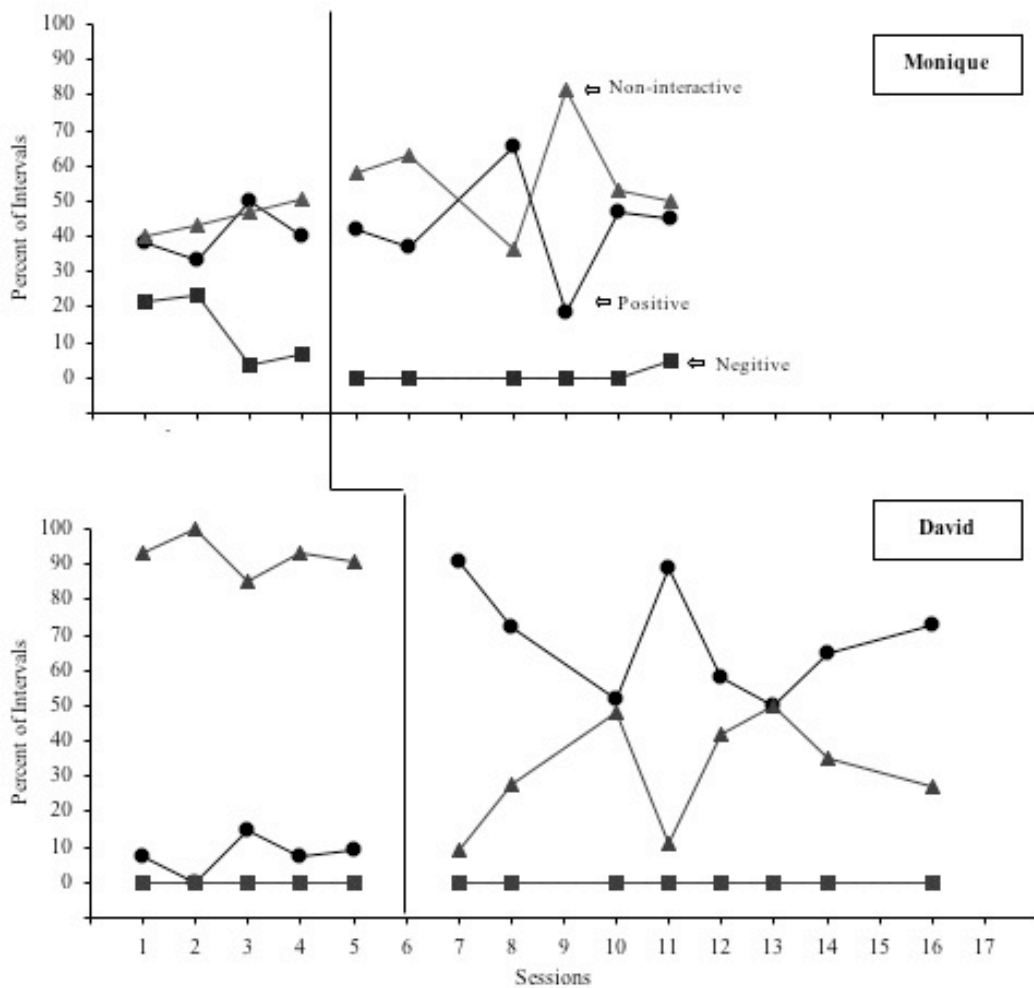


FIGURE 1.

Overall percentage of social interactions between participants and peers during class.

In the classroom setting, Monique engaged in positive interactions with her classmates for a mean of 40.4% of intervals, negative interactions for a mean 13.7% of intervals and was

non-interactive for a mean of 45.1% of intervals at baseline. During the treatment phase, positive interactions remained stable (M= 42.5%), rather than increasing as expected. However, the level of negative interactions decreased to near zero levels (M= .8%) and non-interactive intervals increased (M= 57%).

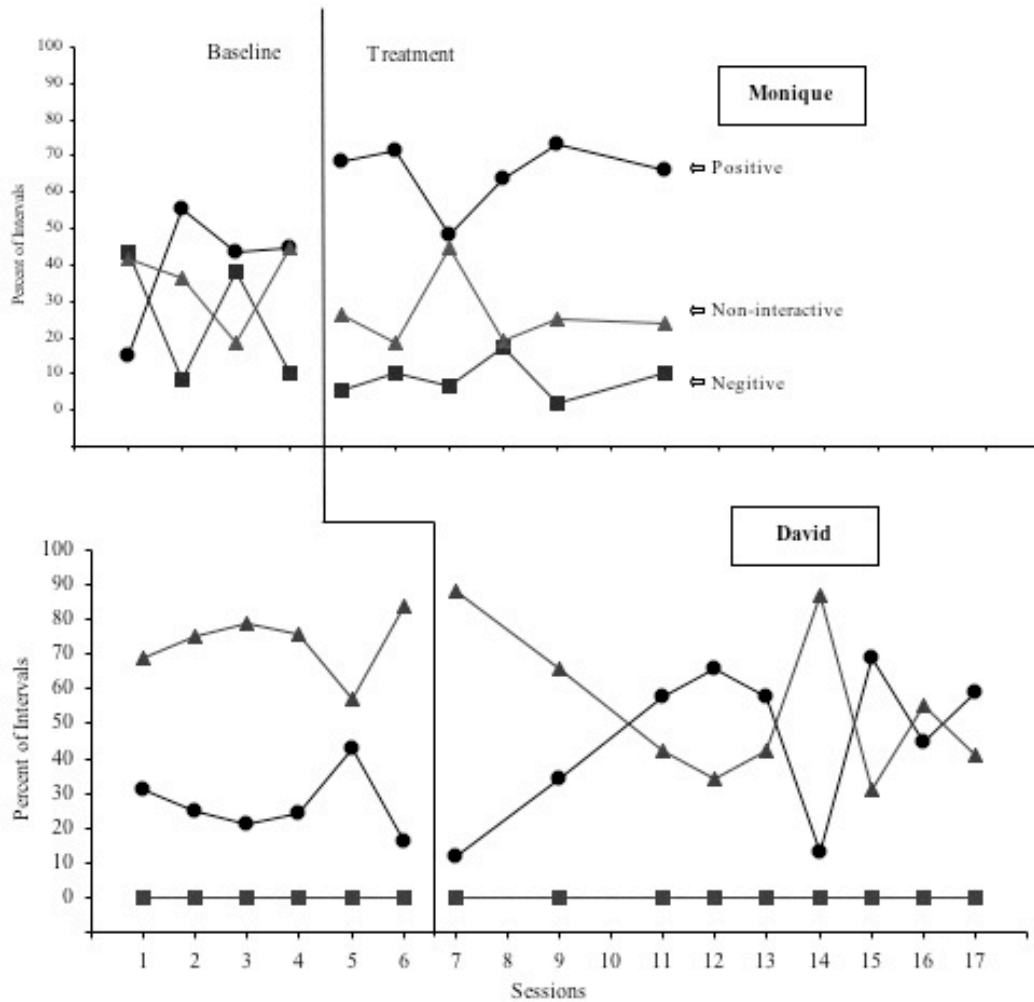


FIGURE 2.

Overall percentage of social interactions between participants and peers during recess.

In the recess setting, Monique engaged in positive interactions with her classmates for a mean of 39.7% of intervals, negative interactions for a mean 25% of intervals and was non-interactive for a mean of 35.3% of intervals at baseline. During the treatment phase, positive interactions increased (M= 65.2%) and negative interactions decreased (M= 8.5%) as expected. There was also a decrease in non-interactive intervals (M= 26.2%).

David demonstrated a different pattern of results. His levels of interactions at baseline was much lower than Monique's, with positive interactions only occurring for an average of 7.6% of intervals and non-interactive behavior occurring for an average of 92.4% of intervals in the classroom. David did not engage in any negative interactions in throughout the course of the study. During treatment phase, David demonstrated a dramatic and immediate increase in the level of positive interactions (M= 68.8%) and corresponding decrease in non-interactive intervals (M= 31.3%).

David displayed a similar pattern of results in the recess setting. During baseline, David engaged in positive interactions for a mean of 26.7% of intervals and was non-interactive for a mean of 73.3%. As in class, no negative interactions were noted for either phase. Following the implementation of PPR, David displayed a delayed but significant increase in the level of positive interactions (M= 46%) and a decrease in non-interactive intervals (M= 54%).

Peer-Initiated vs. Participant-Initiated Rates of Interactions

Figure 3 displays the percentage of intervals in which peers initiated positive or negative interactions with Monique and David in the classroom setting. In comparison, Figure 4 displays the percentage of intervals in which the participants initiated interactions with peers in the classroom setting. Figure 5 displays the percentage of intervals in which peers initiated positive or negative interactions with Monique and David in the recess setting. In comparison, Figure 6 displays the percentage of intervals in which the participants initiated interactions with peers in the classroom recess setting. As indicated by Figures 3 and 4, positive interactions that were initiated by Monique's peers accounted for an average of 20.8% of intervals and positive interactions that were initiated by Monique accounted for an average of 19.2% of intervals during baseline in the classroom setting.

As indicated by Figures 3 and 4, positive interactions that were initiated by Monique's peers accounted for an average of 20.8% of intervals and positive interactions that were initiated

by Monique accounted for an average of 19.2% of intervals during baseline in the classroom setting. Negative interactions initiated by peers accounted for an average of 7.5% of intervals, and negative interactions that were initiated by Monique accounted for an average of 6.3% of intervals during baseline. After PPR was introduced, positive interactions that were initiated by peers or by Monique remained relatively stable, occurring for a mean of 18.7% and 24.6% respectively. Negative interactions that were initiated by peers were reduced to a mean of .3% and similarly, negative interactions which were initiated by Monique reduced to a mean of .6%.

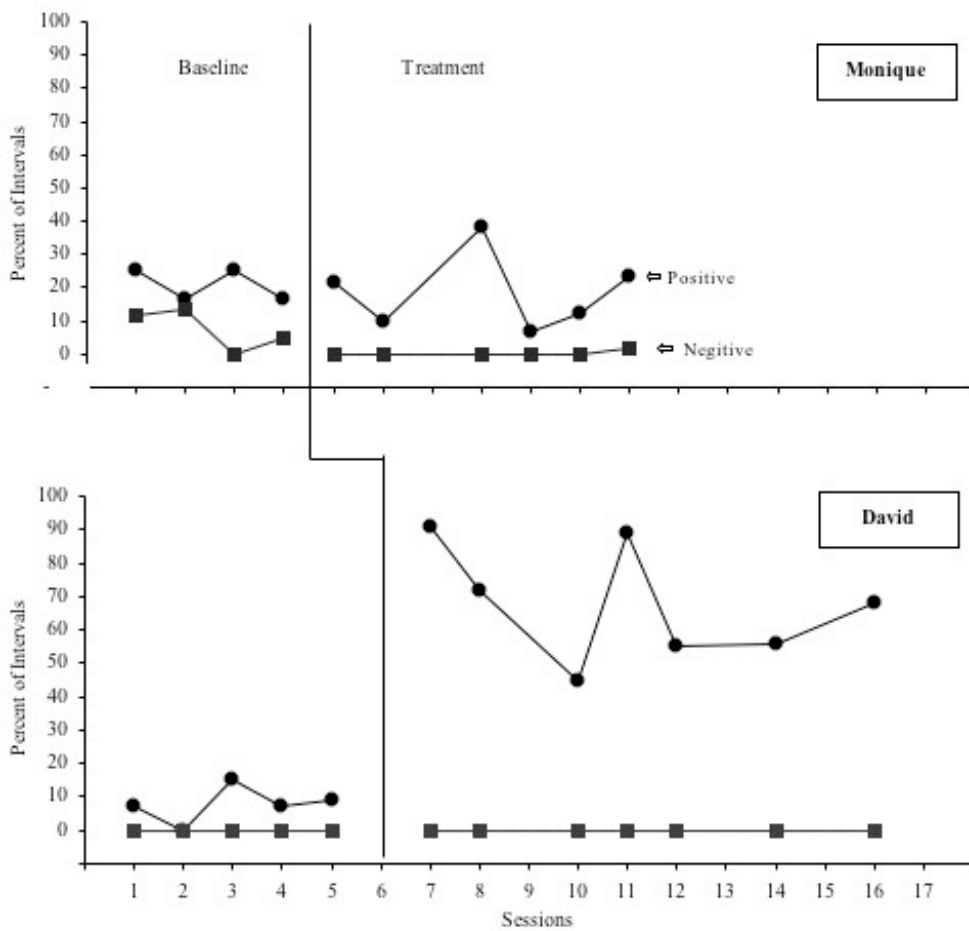


FIGURE 3. Percentage of social interactions beginning with peer initiation during class.

As displayed by Figure 5 and 6, positive interactions initiated which were Monique’s peers or initiated by Monique in the recess setting accounted for an average of 18.8% and 21.1%

respectively in the baseline phase. Monique initiated the majority of negative interactions at recess, averaging 21.6% of intervals, while peers negative much fewer negative interactions, averaging 3.4%.

During the treatment phase, positive interactions increased, with positive interactions initiated by peers accounting for an average of 24.6% and interactions initiated by Monique averaging 38.5%. Negative interactions initiated by Monique drastically reduced to an average of 2.8% while negative interactions initiated by peers remained relatively stable at average of 5.7%.

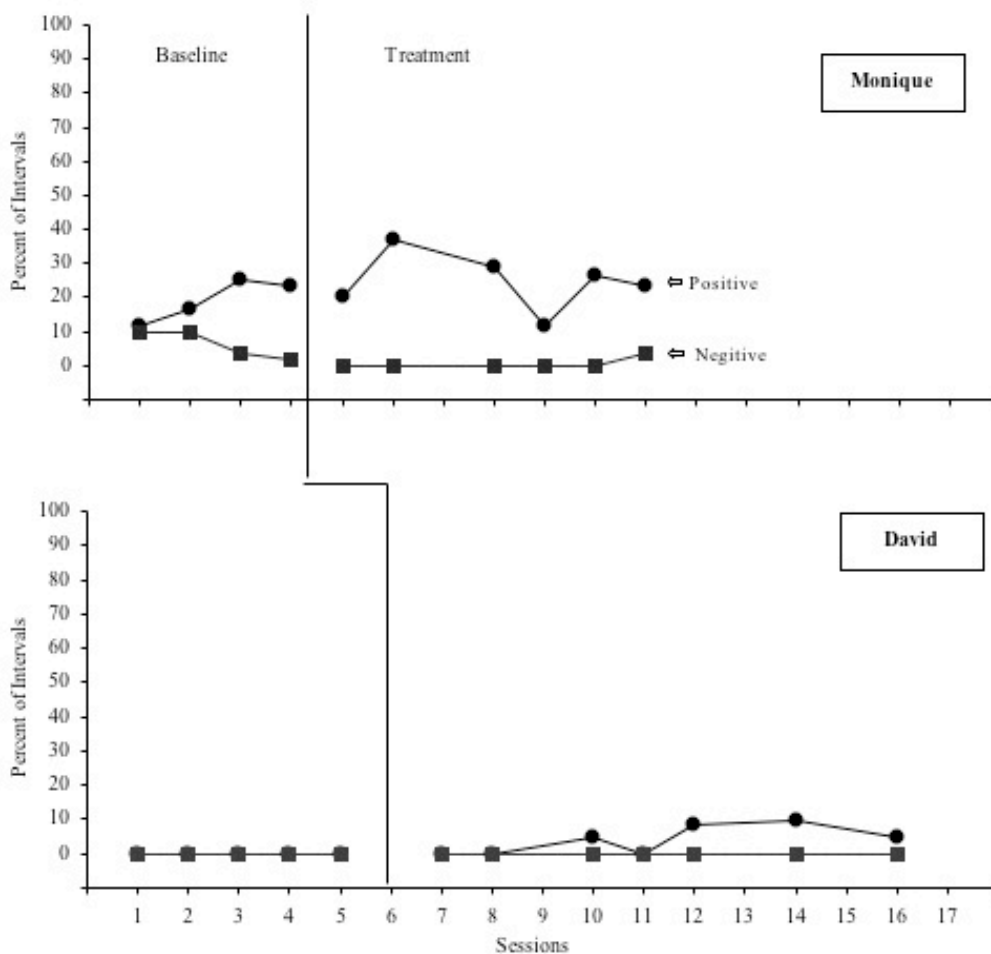


FIGURE 4. Percentage of social interactions beginning with participant initiation during class.

In contrast, Figures 3 and 4 indicate that positive interactions were initiated predominately by peers. At baseline, positive interactions were initiated by David’s peers for an

average of 7.6% intervals in the classroom setting, while David did not initiate any interactions. As displayed in Figure 4, interactions initiated by David’s peers greatly increased (M= 68%) during the treatment phase, and David began to initiate a few interactions (M= 4%).

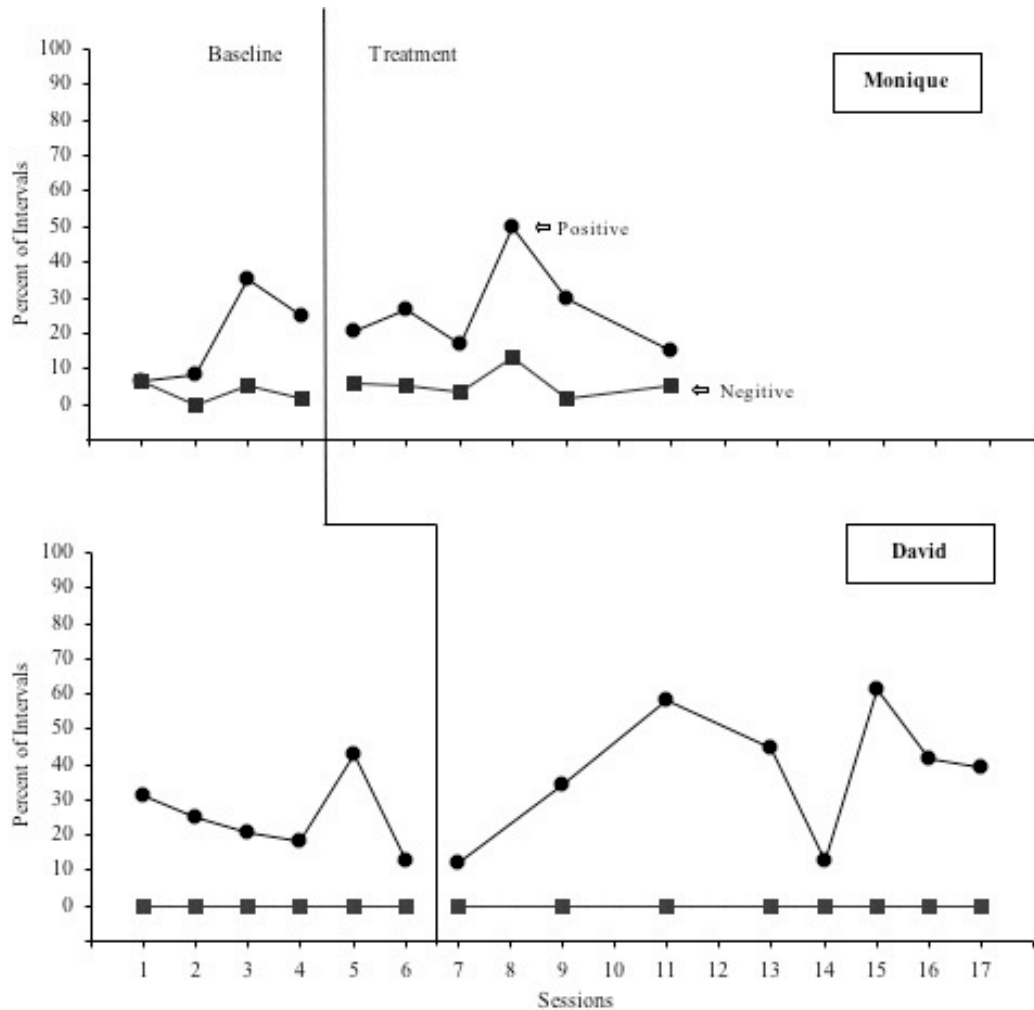


FIGURE 5. Percentage of social interactions beginning with peer initiation during recess.

Finally, comparison of interactions initiation by David or his peers in the recess setting indicates a similar pattern to the classroom setting, as peer-initiated interactions account for the majority of all interactions. As displayed by Figures 5 and 6, David initiated an average of .6% of positive interactions in the baseline phase, compared to average of 25.1% for peer-initiated interactions. As in the classroom setting, there were more interactions in the treatment phase,

averaging 38% while interactions initiated by David increased only slightly to an average of 5.7%.

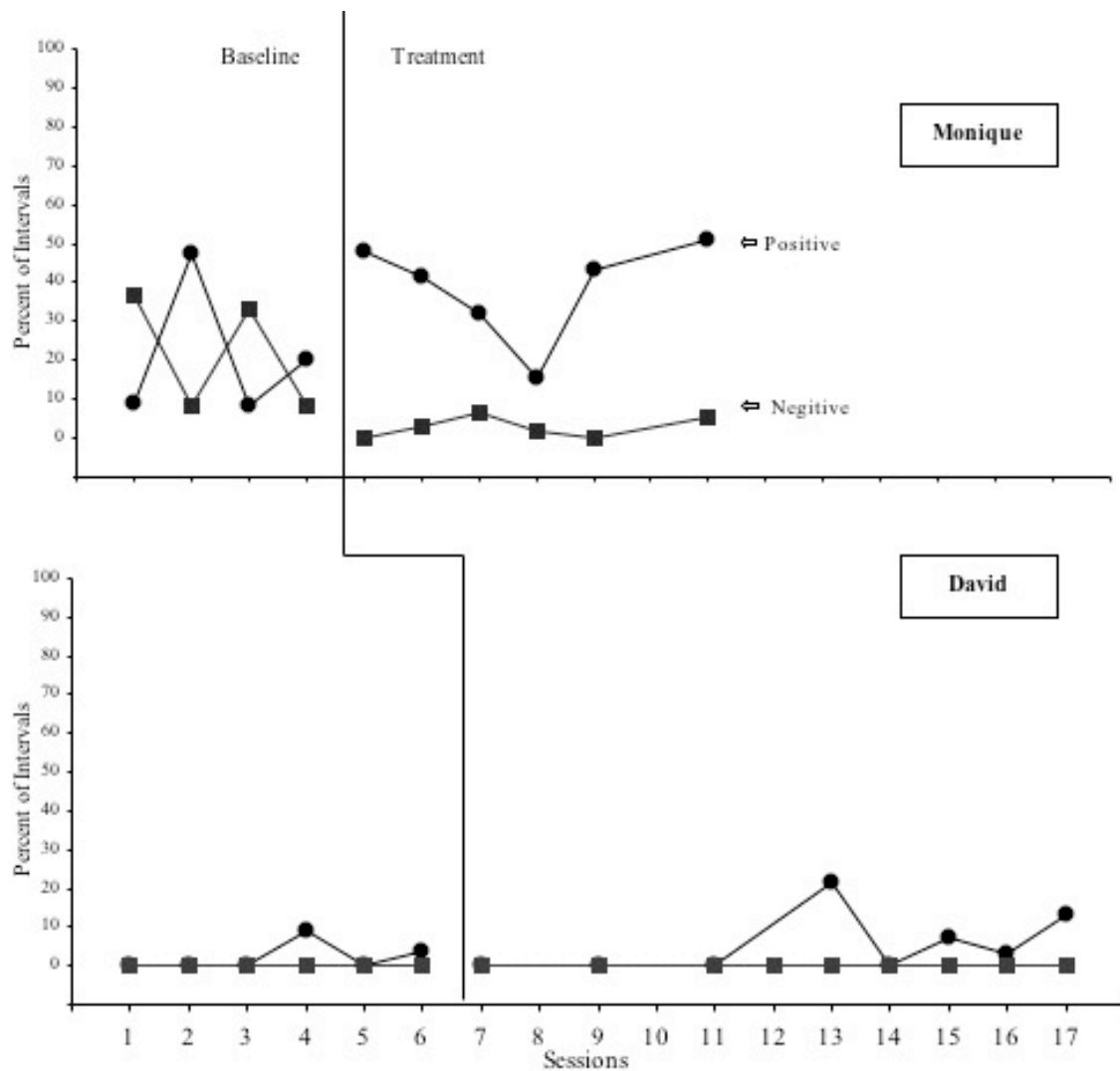


FIGURE 6. Percentage of social interactions beginning with participant initiation during recess.

Sociometric Results

Both participants demonstrated a change in social status after the treatment phase concluded. In pretest measurements, Monique had two positive nominations within her classroom, while David received three positive nominations within his classroom. Using the modified Coie, Dodge and Coppettelli (1982) sociometric classifications described by Asher and

Dodge (1986), both participants were classified as neglected-status. At post-test, Monique received three positive nominations, while David received four positive and one negative nomination. According to the sociometric classification procedure, both participants increased social status to the “other-status”, which in both cases produced slightly higher scores than average status peers.

Monique also demonstrated a change in social ranking within her class. At pre-test she was ranked 8th out the 22 students in her class, with an average rating of 2.82. At post-test, she was ranked 5th, with an average rating of 3. David demonstrated a slight increase in social ranking. At pre-test, he was ranked 6th out of 23 students in his class, with an average rating of 3.55, while he was ranked 8th, with an average score of 3.33 at post-test.

DISCUSSION

The major finding of this study was that PPR appeared to be an effective intervention for improving the amount and quality of social interactions for neglected-status students. As expected, PPR led to an increase in positive interactions and decreases in negative interactions, although each participant demonstrated a different response to the intervention.

For Monique, the major impact of the intervention appeared to be the reduction in levels of negative interactions following the introduction of the Positive Peer Reporting intervention. In class, Monique engaged in negative interactions for almost 15% of the baseline observation period. During the treatment phase, she did not engage in any negative interactions for five out of the six days. Similarly, Monique spent a significant portion of her recess engaged in negative interactions with peers during baseline. After the PPR sessions began, an immediate and stable decrease in negative interactions was noted.

For David, the major impact of the intervention was the increase in amount of positive interactions and corresponding decrease in the amount of time spent by himself. Across all phases and settings, David did not engage in any negative behaviors with peers. During the baseline observations, David rarely interacted with classmates. On the very first day of treatment, David spent 91% of the observation period interacting with the boy who sat next to him. Although this extreme level of interaction was not maintained through the following sessions, the overall level of interactions was significantly elevated above the baseline level. At recess, the impact of the intervention was delayed, but again the overall level of positive interaction was much higher than baseline levels.

These findings suggest that Positive Peer Reporting was an effective intervention for both neglected-status participants. Although previous studies have demonstrated the efficacy of PPR with rejected children, or with children who engage in low rates of interaction with peers, this is the first study with students who were sociometrically classed as neglected. This distinction is

important because different behavioral correlates are associated with the two groups (Dodge, Coie, Petit & Price, 1990). Thus, the use of neglected-status participants in the present study further supports the contention that Positive Peer Reporting is an effective intervention for the “range of clinical problems maintained by social contingences” (Moraz & Jones, 2002, p. 236)

Of further importance, the current study supports the use of PPR intervention in general education classrooms. As previously described, the majority of previous studies were conducted in special education or in residential treatment centers. In the few previous studies conducted in general education settings, Ervin and colleagues (1998) used PPR procedures to improve the quality of social interactions for a rejected girl in the first grade while Moraz and Jones (2002) increased the social involvement of three socially isolated elementary school students. Together, these three studies suggest that PPR is an effective intervention for general education settings.

Generality of Treatment Effects

Another important finding is that treatment effects were evident in the “trained” classroom setting as well as the “untrained” recess settings for both participants, as anticipated. For David, the intervention was effective in increasing positive interactions across both settings. While Monique’s data indicate an increase in positive interactions in the recess setting only, negative interactions decreased in both settings. Furthermore, it is possible that stability of positive interactions in the classroom setting reflects limited opportunities for interaction in the classroom. In Monique’s classroom, the children were allowed to talk quietly with their neighbors while working on activities. However, girls at Monique’s table were often loud, and drew a significant amount of negative teacher attention. Although it is possible that higher levels of interaction may have occurred without this restriction, this may have resulted in unacceptable disruptions in the classroom environment. In this light, the reduction in negative interactions become more significant as these interactions can be another source of disruption to a positive classroom environment.

This is the first study of Positive Peer Reporting to systematically assess generality of effects across settings. This finding is important because it suggests that PPR is effective throughout the day and is not restricted to the reporting session. Previous investigations of PPR have appeared to support this contention by noting effects across various settings and time of the day (see Morrison & Jones, 2006; Ervin 1998; Johnson-Gros & Shriver, 2006). For example, Johnson-Gros and Shriver reported increases in the positive behavior of a non-compliant four year-old during class activities and at recess. However, because the PPR intervention was combined with a compliance training intervention, these effects may have resulted from the combination of interventions rather than solely from PPR procedures. Thus, future research employing systematic methods is needed to replicate the findings from this study.

Peer vs. Participant-Initiated Interactions

One of the major aims of this study was to explore the mechanism by which PPR produces changes in the quality of social interactions. As previously explained, PPR is thought to alter the classroom social ecology by encouraging classmates to notice the positive behaviors of targeted students, rather than the negative behaviors related low peer acceptance (Jones et al., 2000; Morrison & Jones, 2007; Skinner et al., 2002). Rewarding classmates for making positive praise statements about the target student may accomplish this by making interactions with the target student more valuable to classmates. In turn, the positive peer attention provided contingent on engaging pro-social behaviors may increase the accessibility of peer attention as a natural reinforcement contingency (Moraz & Jones, 2002). This may encourage the target student to initiate or reciprocate more interactions with peers. This study aimed to test these assumptions by comparing peer-initiated and participant-initiated interactions at baseline and after PPR was introduced.

In viewing these results, it is important to recall that an entire interaction was coded as initiated by either peer or participant and reflected sustained interactions. Thus, if a peer initiated

the interaction, all subsequent intervals in which the interaction was sustained were coded as such.

In class, positive interactions were initiated by Monique or by her peers at relatively equal levels during baseline observations. These interactions typically consisted of Monique engaging in conversation and sharing materials with the girls at her table. Negative interactions typically entailed verbal arguments with the boy sitting across from her, and were equally initiated by Monique and by the boy. After PPR was introduced, positive interactions with the girls at her table remained stable. However, neither Monique nor the boy sitting across from her initiated negative interactions for five out of the six treatment phase observation sessions. During baseline observations at recess, Monique interacted mostly with the same group of girls from class and here again initiations were relatively equal. Similarly, most of the negative interactions at recess involved the same boy from class. In this setting, Monique overwhelmingly initiated these interactions. After treatment began, both Monique and her peers initiated more positive interactions than at baseline, although Monique initiated higher levels of interaction than her peers. Anecdotally, the quality of play became more structured around the third day of treatment as Monique and the girls at her table began to play hand clapping and song games with a larger group of girls. In terms of negative interactions, Monique initiated much fewer negative interactions.

During the baseline observation sessions in the classroom, David spent the nearly the entire time quietly coloring or working independently activities. In contrast to the rest of his class, David did not interact with classmate during these activities, even though quiet conversation was permitted. On the first day that David was introduced as the “star-raiser,” the boy sitting next to David began interacting with him during these activities. These interactions accounted for the majority of the increase in interactions in the treatment phase. However, a few other children also began interaction with him. One child left her seat several times to borrow

David's supplies or show him her work. After several days of peer reporting sessions, the same boy interacting with him in class began play with David at recess as well. These interactions accounted for the majority of interactions at recess, although other children occasionally joined in as well.

These patterns suggest that PPR changes the social ecology by making interactions with the target child more rewarding for classmates, and concurrently makes engaging in positive interactions with classmates more rewarding for the target child. However, it still remains unclear whether increases in interactions are produced by the group reward and positive peer attention. In future research, a component analysis of PPR may help to address this limitation.

Sociometric Findings

Another important finding is that the sociometric status of the participants changed during the course of this study. Using the modified Coie et al. sociometric procedure (1982; see Asher & Dodge, 1986 for modifications), Monique and David were no longer classified as neglected-status at post-test. This finding is consistent with previous studies that employed various other nomination and ranking procedures and also indicated improvement in the social acceptance of participants (Morrison & Jones, 2006, Bowers et al., 1999, 2000; Ervin et al., 1996).

One inconsistency in the present study of this study warrants further discussion. Although both participants demonstrated improvements in sociometric status, Monique demonstrated a slight increase in social ranking, while David demonstrated a slight decrease in social ranking. The literature on the stability of various forms of sociometric procedures suggests that measurements of social status have higher test-retest reliability than measures of social ranking (Rosenblum & Olson, 1997). Thus, it is possible that David's slight decrease in social ranking is due to naturally occurring variations in social ranking over time. Overall, the results of the present study as well as previous investigations of PPR indicate general improvements in the

social acceptance of participants. These findings are especially significant as changes in peer acceptance are not typically demonstrated in traditional social skill training interventions (DuPaul & Eckert, 1994).

Other Findings and Implications

Another major finding from this study is that the two participants displayed idiosyncratic responses to the intervention. Monique demonstrated an immediate decrease in negative interaction across both settings and an immediate increase in positive interactions in the recess setting. In contrast, David demonstrated an immediate increase in positive interactions in class, and a delayed but significant increase in positive interactions at recess. Previous investigations have also reported variations in responses across participants (Bowers et al, 2000; Moraz & Jones, 2002).

One possible explanation of this finding is that preexisting differences between participants may influence the specific response to PPR. In the current study, Monique and David displayed many behavioral differences. Analysis of Monique's baseline interactions suggest that Monique interacted frequently with her classmates, but a significant portion of these interactions were negative in nature. Thus, it appears that the effect of the intervention was a change in the quality of interactions, rather than the rate of overall interactions. In contrast, David had very low levels of positive interactions at baseline and never exhibited any negative interactions with peers.

These differences suggest that considerable variation exists within the neglected-status population. While at present there are no studies investigating variations within the neglected population, researchers have found heterogeneity within other sociometric status groups. The rejected-status population has been further divided into rejected-aggressive and rejected-withdrawn subtypes (Bierman, 2004). Interestingly, research suggests that few behavioral differences exist between the rejected-withdrawn subtypes and average status peers (French,

1988; Bierman). Furthermore, French (1990) suggested that rejected girls can be divided into two different subtypes: highly deviant rejected-status, which is positively correlated with withdrawal, anxiety and academic problems, and a less deviant subtype, which does not appear to be different from girls in other sociometric status groups. If parallels can be drawn from the rejected subtypes, it appears David would fit into a neglected-withdrawn subtype, while Monique may fit into a subtype perhaps analogous to the less deviant subtype. Future research along these avenues should address whether subtypes indeed exist within the neglected status population, and if sociometric status-subtype predicts response to intervention for Positive Peer Reporting and other social skills interventions.

Limitations and Directions for Future Research

Several limitations were present in the current study that warrants further consideration. The first set of limitations concerns the possible the influence of experimenter expectancies. In the present study, the researcher served as the primary observer for the majority of observation sessions. Although a second observer independently coded 40% of all observation sessions, observer bias should be considered in the interpretation of the results. Furthermore, as the children were aware of the presence of observers, reactivity must be considered. It should also be noted that the researcher conducted the majority of the peer reporting sessions. It was originally intended that the teachers conduct these sessions; however throughout the course of the study, the teachers requested that the researcher conduct the sessions. This may have introduced an additional source of reactivity, as the person who implemented reporting sessions was also present during the observation periods. In order to strengthen the validity of findings in future studies, the use of a blind observer is strongly recommended.

Another limitation reflects the difficulties associated with live coding of observations. Because of the difficulty of simultaneously coding interactions involving multiple children, only the initial interaction was coded. Subsequent interactions with other children were not coded

until the initial interaction ended. Thus, the current data reflects the proportion of intervals in which the participant engaged in interactions with classmates, rather than total number of interactions that occurred during each observation. This shortcoming is significant because different patterns in the initiations of interactions may emerge once the data accounts for simultaneous interactions with other children. In future studies, videotaping observation sessions, and individually coding each interaction between the participant and peers could address this limitation.

Another limitation concerns the evidence for the social importance of the treatment outcomes. As described by Gresham and Lopez (1996), the social importance of treatment outcomes describes whether the intervention produced practical or significant changes for the individual. Kazdin (1997) recommends that this be achieved through the use of peer comparison and subjective evaluations of important individuals. In the current study, the subjective evaluations of peers were solicited through the use of sociometric status and rankings. Thus, the improvement in sociometric status and ranking reflected a practical change in the peer acceptance of participants. However, this study did not compare the participant's levels of interactions to that of other students in the classroom. The inclusion of the typical level of interaction in each classroom establishes normative data, which could serve as a basis of comparison to the individual's level of interactions. Thus, while changes in the quality of interactions were present following the introduction of PPR, the practical significance of these changes remains unclear. It is recommended that future PPR studies employ both subjective evaluation and peer comparison methods as evidence for the social importance of treatment outcomes.

One final limitation concerns the use of the sociometric classification procedure for use in identifying participants. There has been some confusion regarding the use of the term "neglected" in the literature. As noted by Coie et al. (1982), some researchers use the term to

indicate children who withdraw from interactions, while others use the term to describe children who are not mentioned by peers on positive and negative nomination measures. The second definition may result in children who are relatively neglected by their peers, but still in engage in positive interactions and close friendships with a few peers. This may ameliorate the risk of experiencing the maladaptive outcomes associated with social isolation (Newcomb & Bagwell, 1995). Furthermore, minor changes in the sociometric procedure or the social composition of the classroom may produce changes in the sociometric status of students. For these reasons, sociometric status should not be used as the sole criteria in the identification of low accepted students who may benefit from the PPR intervention. Future studies should consider using multiple selection criteria, which could include observations of social withdrawal and teacher nomination as well as the subjective evaluations of classmates.

CONCLUSION

In summary, the results of the current study suggest that PPR improved the quality of social interaction and peer acceptance of neglected-status students in general education classrooms. As in previous investigations, the two participants displayed different patterns responses to the intervention. It was noted that interactions were initiated relatively equally by the first participants and her peers, but interactions with the second participant were predominately initiated by peers. This may have implications regarding the differences in the relative impact of various components for across various participants. This avenue should be further explored future research. On the whole, this study suggests that Positive Peer Reporting appears to be effective for improving the quality of social interactions and increasing the peer acceptance for children experiencing a variety of social difficulties.

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VITA

Lisa R. Libster was born in 1982, in Silver Spring, Maryland. Lisa graduated from Sherwood High School in 2000. After graduation, Lisa attended Towson University, and graduated *Summa Cum Laude* with a Bachelor of Science degree in psychology. Lisa also received honors from the Honors College, and departmental honors in psychology, clinical option. As part of the two-year departmental honors in psychology program, Lisa participated in three internship placements and completed an honors thesis focusing on family perspectives on treatments for autism. Upon graduation, she spent two years working under Dr. Rebecca Landa as a research assistant at the Center for Autism and Related Disorders (CARD) at the Kennedy Krieger Institute. In 2006, Lisa began her studies in school psychology doctoral program at Louisiana State University, under the guidance of Dr. Frank Gresham. She is currently in her third year. Lisa's current research and clinical interests include social skills deficits, academic and behavioral problems, response to intervention, pediatric psychology and school-based mental health.