5-2003

The Effects of a School-Wide Peer-Administered Praise Intervention on Student Problem Behavior

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THE EFFECTS OF A SCHOOL-WIDE PEER-ADMINISTERED PRAISE INTERVENTION ON STUDENT PROBLEM BEHAVIOR

by

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A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Psychology

Approved:

UTAH STATE UNIVERSITY
Logan, Utah

2003

ABSTRACT

The Effects of a School-Wide Peer-Administered Praise Intervention on Student Problem Behavior

by

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Utah State University, 2003

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This study evaluated the effects of a peer-administered positive behavioral support intervention on a school-wide problem behavior. Utilizing the differential reinforcement of incompatible behaviors method (DRI), peer monitors praised incidences of walking in order to decrease incidences of running in the hallway. A multiple baseline design across two hallway settings was used to evaluate the effect of peer monitors administering verbal praise and praise notes to students who demonstrated the desired behavior, walking. A lottery drawing in which recipients of praise notes received small prizes was conducted at the end of each week during the treatment phase. Results indicated that incidences of running significantly decreased following implementation of the peer-administered positive behavioral support intervention in both settings. In addition, a maintenance phase suggested that treatment effects were maintained when the peer-administered intervention was withdrawn in the

two hallway settings. Results were socially validated by teachers who indicated that they were generally satisfied with the intervention four weeks after termination of the treatment phase. Implications for research and practice are discussed.

(103 pages)

ACKNOWLEDGMENTS

I would like to express my deep gratification to all who assisted me in this project. First, my committee co-chair, Dr. Richard West, provided an exceptional amount of expertise, insight, and resources. Rich was extremely supportive and patient, and made endless accommodations in his busy schedule to meet with me, even on Saturdays at his house, while somehow maintaining a wonderful sense of humor. Dr. Donna Gilbertson, my other co-chair, devoted countless hours of her time to assist in all aspects of the process, from proposal development to summarizing the final results. Her willingness to provide timely feedback was critical to the progress of this project. Finally, Dr. Gretchen Gimpel also provided extremely valuable suggestions and insights in the preparation of this document.

Without the professional and financial support of my employer, the Center for the School of the Future, this project could not have been completed. It is a pleasure to be employed by an organization that supports its employees throughout their educational and professional development. Special thanks to Matt, Ben, Tim, Jen, Tara, Seth, Klint, and Catherine for their efforts and assistance. The staff at Millville Elementary School deserves congratulations for their willingness to accept and implement the intervention. The peer monitors and their parents demand special appreciation due to their extra efforts, including time spent after and during school for training sessions, meetings, and peer monitor sessions. Their diligence, flexibility, and patience throughout the program were incredible. To the peer monitors, Mandy, Andrea, Brooke, Sheena, Brayden, Aubrie, Meg, and Jessica, thanks so much!! Cathy

Toolson, the principal at Millville, Cindy, the faculty advisor to the student council, and Mrs. Fenton were also instrumental to the success of this project.

During my time at Utah State University, I have been very fortunate to become friends with wonderfully motivating and supportive individuals. Without their support, patience, and inspiration, this project would never have been completed to the same degree of efficiency as it was. In particular, this experience would not have been possible without the support and understanding of my boyfriend, Andy Cantor, who was always there when I needed him. His patience, understanding, reality checks, and hugs always made me feel better. In addition, Andy has made progress in accomplishing the difficult task of encouraging me to relax, take breaks, and have fun, which is certainly an ongoing process. Finally, I express my sincere gratitude to my parents for their continued support throughout my educational quest and for encouraging me to fulfill my dreams. I will never doubt that they are extremely proud of me.

Meredith L. Brent

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CHAPTER I

INTRODUCTION

It is generally accepted that praise is an effective strategy to reinforce positive behaviors among children in the school setting, particularly if it is individualized, contingent on behavior, and provides a rationale for the importance of the behavior (Forsyth & McMillan, 1981; Merrett, 1981; Merrett & Tang, 1994; Siero & van Oudenhoven, 1995; Wheldall & Merrett, 1984). Research suggests that feedback contingent on desirable behavior has a significant positive effect on students' perceived control of the task and academic task performance (Siero & van Oudenhoven). In addition, teachers who use more praise have higher levels of on-task behavior in their classrooms (Wheldall, Houghton, & Merrett, 1989).

Student peers can also effectively enhance desirable behaviors with praise. Peer tutoring programs that incorporate praise are commonly used to improve academic performance. Previous findings indicate that peer tutoring programs that involve a tutor and a tutee improve school performance more quickly than when students work independently (Kalfus, 1984). Peer tutoring programs that incorporate praise have produced academic gains equivalent to or greater than traditional teaching methods (Greenwood et al., 1984).

However, praise is rarely a component of interventions that utilize peers to influence student social behavior. Although studies on the relationship between social behavior and peer tutoring are limited, the few existing studies suggest that peer tutoring programs that utilize peer tutors, peer therapists, or peer mentors who

administer praise can effectively modify peer social behavior. For example, one peer praise intervention incorporated peer therapists who were trained through discussion of social contingencies, instructions on the use of behavioral principles, and videotape observation. Results following the intervention indicated an increase in desirable behavior of five target acceptable behaviors, such as talking that did not violate the teacher's rule. Peers were instructed to ignore problem behaviors and respond positively to desirable behaviors demonstrated by the target children. To increase their awareness of adherence to the specified differential reinforcement concepts, peers recorded a "+" after responding to desirable behavior and a "-" after accidentally responding to problem behavior (Solomon & Wahler, 1973). In addition, a peer-administered praise program called Positive Peer Reporting (PPR) also effectively initiated social behavior change for individual students. This program, which was developed to encourage prosocial behaviors from delinquent or socially rejected youth in classrooms and group home settings, utilized teacher-administered token points for students who publicly praised appropriate social behavior of target adolescents. Findings indicated that this peer praise intervention was effective in increasing positive social interactions, peer acceptance ratings, and decreasing daily problem behaviors (Bowers, McGinnis, Ervin, & Friman, 1999; Jones, Young, & Friman, 2000). Therefore, existing studies suggest that peers can positively influence student social behavior through the use of praise (Enright & Axelrod, 1995; Greenwood, Carta, & Hall, 1988; Greenwood et al., 1984; Jason, Ferone, & Soucy, 1979).

However, there are significant limitations in the literature regarding the

relationship between peer influence and student social behavior change. First, research that explores the relationship between peer influence and student social behavior is limited. Second, most existing studies that explore this relationship have not investigated the generalizability or follow-up of the intervention (Kalfus, 1984). Third, few studies report whether peer tutors accurately carried out their responsibility as planned (Greenwood et al., 1988). Fourth, while most of the existing research supports the finding that peers can influence individual behavior as a result of one-on-one interactions, there have been few school-wide investigations of peer influence on behavior change. Therefore, further research regarding the relationship between peer-administered praise and student social behavior change would allow educators to improve the quality and effectiveness of behavioral interventions.

Research findings indicate that school-wide behavior problems, such as running, pushing, and hitting in the hallways are continuously increasing within elementary schools (Beach Center on Families and Disability, 1998; Center for Effective Collaboration and Practice, 2000; Sugai et al., 1999). Teachers report that time and energy spent disciplining students negatively impacts academic instruction (Sugai et al.). Concurrently, pressure is being placed on public schools to achieve more academic and social gains with few resources (Center for Effective Collaboration; Sugai et al.). As such, there is a critical need to develop effective school-wide social behavior interventions.

A better understanding of the effects of peer-administered praise on school-wide social behavior change is needed. Thus, this study is based on the supposition that

peers can be effective in promoting school-wide social behavior through the administration of instructive praise. Specifically, the purpose of this study was to investigate the relationship between peer-administered praise and the improvement of a school-wide behavior problem. Due to administrator and teacher request, the problem behavior of interest was running in the school hallways settings. This target behavior was selected to increase program acceptability and increase outcome satisfaction (Kazdin, 1994; Wolf, King, & Huck, 1968). The method of differential reinforcement of incompatible behavior (DRI) was utilized. As such, peers reinforced the incompatible behavior of walking in order to decrease incidences of running. Other features evaluated in this study that have not previously been investigated in a school-wide peer tutoring intervention include peer treatment integrity and maintenance of treatment effects.

CHAPTER II

LITERATURE REVIEW

Effects of Praise

Approval is considered anything that is generally thought to be related to "happiness," and includes positive facial expressions, close proximity (e.g., sitting next to student at lunch), contact (e.g., shaking hands, patting back), privileges such as being a team captain or enjoying extra recess time, or things such as prizes, food, or badges (Madsen & Madsen, 1981). Praise is a specific type of approval that includes verbal comments indicating approval, commendation, or achievement (Madsen, Becker, & Thomas, 1968). Terms associated with praise include approval, positive reinforcement, positive approach, affirmative reinforcers, and positive feedback. For the purposes of this review on the effects of praise, all of the studies reviewed included a positive verbal statement. Additional forms of approval were included in some studies reviewed, such as a lottery drawing for tangible prizes or public recognition of positive behavior. All praise statements were intended to be rewards for improvements in behavior or performance.

Numerous school interventions that utilize teacher-administered praise as an independent variable have resulted in improvement of specific student behaviors. When utilizing principles of applied behavior analysis, positive reinforcement is arranged to follow a target behavior in order to increase or maintain it, concurrently decreasing an opposite or incompatible behavior (Sulzer-Azaroff & Mayer, 1977). For example,

Brantley and Webster (1993) noted marked decreases in problem behaviors, including talking without permission, physically touching others, and getting out of seat after implementation of a group contingency management system. This treatment package incorporated teacher-administered check marks next to individual names in a highly visible place following desired behaviors and weekly rewards chosen by students, which is contingent upon individual performance. In an investigation of the effects of teacher-administered praise by Ferguson and Houghton (1992), teachers from three different primary schools were instructed to administer at least one contingent positive statement to each of 24 target children during specified 30-minute lessons. Results indicated that all but one of the target children increased their levels of on-task behavior during academic teacher-based activities. Specifically, five children displayed increases in mean levels of on-task behaviors between 1% and 10%, 14 children displayed increases between 11% and 20%, and three children by 21% or more (Ferguson & Houghton). An investigation of a praise intervention by Martens, Hiralall, and Bradley (1997) incorporated teacher goal setting for the number of positive verbal comments directed toward each student during a daily activity period, identification of up to four desired behaviors to increase for each of the two students, and feedback from the researchers indicating whether the goal was met. Subsequent to implementation, frequency of positive student behavior increased including orientation to schoolwork, attending to instruction, and responding to teacher directives. Additionally, the teacher completed the Intervention Rating Profile, a measure of treatment acceptability that assesses level of agreement of aspects of the intervention on a 6-point Likert scale (IRP-

15; Martens, Witt, Elliott, & Darveaux, 1985). The intervention was judged by the teacher to be acceptable on 14 out of 15 items on the scale. Therefore, previous literature indicates that teacher praise can effectively improve student social behavior.

Factors That Increase Effectiveness of Praise

Quality factors have been identified in the literature that enhances the effectiveness of praise statements. Specifically, if the praise statement is contingent upon behavior, specifically describes the behavior, and occurs immediately after the behavior occurred, the praise statement is much more influential in changing student behavior than general, nonspecific praise that does not include or specify the desired behavior to be changed (e.g., "good job," "way to go;" Phillips, Phillips, Wolf, & Fixsen, 1973; Scheer, 1978). It is also noteworthy to consider the findings of Pfiffner, Rosen, and O'Leary (1985) in which an all-positive approach, meaning that the teacher used the same rates of positive feedback per child and withdrew all negative consequences, was not effective in reducing problem behaviors. In comparison, individualized reward systems were utilized in two conditions. The first condition incorporated positive and negative consequences contingent upon behavior. The second condition involved enhanced positive consequences that included increased praise statements and tangible rewards contingent upon behavior. Results indicated rates of on-task behavior improved significantly after implementation of individualized reward systems in both conditions. As such, findings suggest that praise statements that are contingent upon the target behavior, specific, and immediate are more effective than

general praise.

Contingent Praise

Contingent praise is considered a reinforcing event that occurs only as a consequence of the specified behavior (Sulzer-Azaroff & Mayer, 1977). If feedback is explicitly referenced to effort, the perceptibility of the contingency between feedback and task behavior is enhanced (Madsen & Madsen, 1981). Subsequent to the administration of contingent praise, significant positive effects on perceived controllability and better task performance have been observed. Because noncontingent praise does not link performance with the affirmative attention, findings indicate that noncontingent praise does not increase the probability of the desired behavior (O'Leary & O'Leary, 1977). In a cross-age peer-tutoring project that incorporated contingent praise, corrective feedback, and re-presenting questions, Jason, Frasure, and Ferone (1981) found that first grade tutees scored significantly higher on measures of academic performance in comparison to first graders in a control classroom. As a result of a peer-tutoring program that incorporated positive verbal statements following a tutee's correct response, positive findings were observed in academic, behavioral (i.e., lower rates of noise, disturbance of other's property, and other inappropriate actions), and consumer satisfaction indices (Jason et al.). Unfortunately, no attempt was made to isolate contingent praise in these investigations of praise-based interventions.

Specific Praise

The effectiveness of praise as a behavior management strategy increases when

the praise statement specifically describes the positive behavior (Brophy, 1981). Results of an investigation on the effects of teacher behavior-specific praise statements compared with teacher nonbehavior-specific praise statements indicated significant increases in on-task behavior in children with emotional and behavioral disorders when rates of behavior-specific praise statements increased (Sutherland, Wehby, & Copeland, 2000). As a result of a teaching program that included behavior-specific praise, the percentage of correct answers on receptive-labeling tasks increased within language-delayed children (McGee, Krantz, Mason, & McClannahan, 1983). Likewise, subsequent to implementation of a peer-tutoring program that incorporated specific praise statements, compliance to requests increased and social behavior improved (Martella, Marchand-Martella, Young, & Macfarlane, 1995). Therefore, empirical evidence suggests that positive results may be more likely if praise statements specifically describe the positive behavior.

Immediate Praise

Immediate feedback appears to be more effective than delayed feedback in the acquisition of a new skill (Skinner, 1938). Additionally, evidence suggests that immediate feedback is more effective than delayed feedback in the acquisition and maintenance of academic skills (O'Reilly, 1994).

Components of Praise Interventions

Previous research suggests that various components of praise interventions can facilitate behavior change. First, research indicates that written praise statements can

contribute to behavior change when combined with verbal praise. Written praise statements, often referred to as praise notes, are typically written by the teacher and given to the student to serve as a tangible form of positive reinforcement. Marked and long-lasting improvements in academic performance have been observed subsequent to the administration of teacher-administered praise notes (Hickey, 1979; Imber, 1979). For example, Hickey found that teacher-administered praise notes were associated with specific academic improvements, including improved completion of assigned tasks, report grades, and parent approval. When utilized as part of a school violence prevention program, praise notes were related to a more peaceful school environment (Embry, 1997). Findings also indicate that praise notes, particularly when entered into a lottery drawing in which tangible prizes are administered to students, can enhance the effectiveness of praise (Embry).

Research suggests that a contingent lottery system, in which individual students' names or praise notes are entered into a drawing for a tangible prize to reward appropriate behavior, can positively influence student academic performance and behavior (Schilling & Cuvo, 1983; Witt & Elliot, 1982). For example, decreases in talking without permission and greater preparation for class were observed after implementation of a contingency based lottery system with learning disabled and mentally retarded students (Schilling & Cuvo). Additionally, a decrease in inappropriate behavior, including off-task behavior, was observed following a classroom-wide intervention that incorporated a contingency-based lottery system (Kariuki & Martin, 1999).

Differential Reinforcement of Incompatible Behavior

Numerous behavioral strategies are utilized to decrease problem behavior. One method employed to decrease a problem behavior, referred to as DRI, involves positively reinforcing an incompatible behavior (Alberto & Troutman, 1995). With DRI, a behavior that is mutually exclusive with the problem behavior is selected to be praised. Hence, the appropriate response makes it physically impossible for the student to engage in the problem behavior. Reinforcing the desired response increases the strength and/or rate of the desirable behavior, thereby decreasing the frequency or occurrence of the problem behavior (Richards, Taylor, Ramasamy, & Richards, 1999). For example, engaging in play with a toy would be positively reinforced for a child with stereotypic hand movements, which would inevitably decrease the opportunities that she can engage in hand movements (Favell, 1973). Differential reinforcement of incompatible behaviors has been effective in modifying a variety of behaviors including sleeping in class, classroom disruption, stereotypic behaviors, and inappropriate speech (Alberto & Troutman).

Complications With Implementation of Teacher Praise

Results of a number of studies have demonstrated that teacher praise effectively increases positive behaviors across settings. However, evidence suggests that teachers seldom use these practices unless provided with guidance and support. Observations of natural rates of teacher approval in the classroom indicate that teacher praise is typically infrequent, noncontingent, global, and determined by students' personal qualities rather

than achievement or conduct (Brophy, 1981; Wickstrom, 1995). Although increases in positive behavior have been shown as a result of praise for academic and social behaviors, data consistently shows that teachers are more likely to praise correct answers than criticize negative answers, yet are more likely to criticize poor conduct than praise good conduct. In other words, more approval is provided for academic behaviors, while more disapproval is directed at inappropriate social behavior. An investigation of teachers' rates of approval in response to students' academic and social behavior indicated that positive responses were three times as frequent as negative responses for academic performance. However, negative responses were five times more frequent than positive responses for social behavior (Merrett & Wheldall, 1987). All studies included in a review of teacher-administered praise indicated that praise for good conduct was the least frequent teacher response (Beaman & Wheldall, 2000). An investigation of naturally occurring rates of approval and disapproval statements made to children who typically complied with teacher requests, or high-rated children, and children who typically did not comply with teacher requests, or low-rated children, made by teachers indicated that 10 of 55 low-rated (18%) children received praise for compliance compared with 20 of 75 high-rated (27%) children who were praised (Strain, Lambert, Kerr, Stagg, & Lenkner, 1983). Brophy suggests that teachers expect pupils to behave well and believe that students should not need praise for social behavior. Evidently, despite considerable literature testifying to its effectiveness, there is little evidence to suggest that teachers systematically and consistently employ contingent praise as a form of positive reinforcement, particularly for appropriate social

behavior (Beaman & Wheldall). Additionally, evidence of normative data regarding justification for specific rates of approval does not exist in the literature.

A second serious concern with the implementation of teacher praise is the degree that teachers implement the treatment as planned, which is termed treatment integrity (Gresham, 1989). Even after teachers agree to implement interventions to improve classroom management, there is a lack of evidence that teachers actually implement these interventions. Existing investigations of teacher-administered praise-based interventions generally indicate low rates of treatment integrity. Teachers frequently object to being responsible for the implementation of a classroom or school-wide intervention, complaining that they lack personnel and resources to carry out interventions like those suggested in research literature (Witt & Elliott, 1982). One study that investigated teacher treatment integrity found that 100% of teachers ($n = 33$) implemented the interventions less than 10% of the time (Wickstrom, Jones, LaFleur, & Witt, 1998).

Effectiveness and Benefits of Peer-Administered Praise Interventions

Due to complications with teacher-administered praise interventions, peers have been utilized to influence student academic and social behaviors. Existing empirical evidence regarding the effects of peer-administered praise interventions for academic and social behavior will be reviewed.

Peer Tutors for Academic Behavior

Results from a number of studies have demonstrated that peer-tutoring programs

that utilize praise of various degrees of flexibility, including an unstructured, minimally structured, and structured nature, can be effective in modifying academic performance in children (Kalfus, 1984). Unfortunately, existing investigations of peer tutoring programs have not attempted to determine the effectiveness of praise as an isolated variable. Instead, the majority of studies examine the impact of numerous components within a peer-tutoring program on student performance. For example, implementation of a peer modification program to teach proper speech articulation to boys at *Achievement Place*, a rehabilitation program for predelinquent boys, resulted in significant improvements in the correct use of target words and performance on standard tests of articulation. The speech correction procedure involved positive and corrective feedback after subject responses, modeling, and contingent points given to peer modifiers based on identifications of incorrect words by the subject (Bailey, Timbers, Phillips, & Wolf, 1971). Additionally, previous research indicated that the spelling skills of peer tutors improved nearly an equivalent amount on words that they taught as on words that they were tutored on.

After showing tutees an index card with a spelling word written on it, the tutor provided praise or corrective feedback, placed the card into either a box with a "plus," indicating correct, or a box with a "minus," indicating incorrect. Tutors and tutees chose a special activity from a reinforcement menu contingent upon results of spelling test results following the peer tutor session. In addition, teachers provided praise or fines for on-task performance or fines for off-task performance after observations of tutorial sessions (Dineen, Clark, & Risley, 1977). As such, research suggests that peer-

administered interventions can effectively improve academic tasks.

Effects of Academic Peer Tutoring on Social Behavior

While the results of numerous studies indicate that peers can improve academic performance, there are few studies that have specifically investigated the effect of peer-administered praise on social behavior. No attempt was made to isolate praise as an independent variable within investigations of multicomponent peer tutoring interventions. Regardless, several studies indicate that positive social behavior change can result from academic peer tutoring programs that utilize praise. Academic peer tutoring programs that incorporate praise have resulted in improvements in student relations, increased sociometric ratings of peer affiliation, and reductions in behavior problems (Greenwood et al., 1988). In addition, improvements in adjustment, including decreases in moodiness and acting-out, as well as academic performance were observed in peer tutors after cross-age and peer academic tutoring interventions that incorporated contingent praise statements, representing questions, and corrective feedback. Children were praised, given feedback, and awarded a star that was publicly displayed by the observer for good conduct during peer tutoring sessions. Involved children viewed their participation in the peer-tutoring program as valuable since it gave them a more active role in the learning process (Jason et al., 1979). Positive results were observed as a result of an intervention in which both students with and without disabilities learned academic material together in a cooperative environment. Students learned new material and then helped all group members to learn the material through direct

instruction and positive or corrective feedback. More positive relationships and more frequent interactions both in and out of the classroom were observed between both students with and without disabilities following the cooperative learning tasks (Johnson, Johnson, Warring, & Maruyama, 1986). Findings also suggest that academic peer tutoring strategies can effectively improve peer relations among students of different sex, racial status, disability status, and academic ability levels (Greenwood et al.).

Peer-Administered Social Behavior Interventions

In addition to peer tutoring programs that target academic performance, interventions that utilize peers as social behavior change agents have been developed. Peers have been trained to perform various roles within social behavior interventions. Among these roles, peers have been trained to be peer therapists, peer monitors, and peer mentors. Reinforcement techniques such as verbal praise are frequently emphasized within peer-tutoring programs in order to enhance student social behavior change (Enright & Axelrod, 1995). Investigations of peer-administered social behavior interventions that utilize praise as a component within the intervention package indicate that this strategy can contribute to improvements in student social behavior (Enright & Axelrod; Ervin, Miller, & Friman, 1996; Franca, Kerr, Reitz, & Lambert, 1990). Although it is unclear what effect praise as an individual component had on behavior change, programs that incorporate peer-administered praise in addition to techniques such as modeling, prompting, and corrective feedback have successfully reduced drop-out rates while traditional remediation programs such as grade retention and suspension

from school have not proven to be effective in reducing drop-out rates (Enright & Axelrod). One peer praise-based intervention involved teacher-administered rewards for children who publicly reported positive features of target peers' behavior with points toward privileges. Results indicated that this intervention produced a significant increase in the use of cooperative statements made by target peers and improvements in peer status (Jones et al., 2000). Therefore, it appears that peer-administered praise can effectively improve student social behavior.

The majority of existing empirical research regarding the effectiveness of peer-administered praise on social behavior change investigates the effects on individual change rather than classroom-wide or school-wide change. The effectiveness of peer-administered praise interventions to facilitate individual student social behavior change has been demonstrated in several studies. For example, an intervention that involved peers publicly reporting positive aspects of a socially rejected girl increased her positive social interactions, which was defined as helping others, engaging in conversation, working cooperatively, or any other pleasant interaction. After the teacher asked for positive comments for five minutes at the end of class, she awarded points to students who made specific, genuine, and direct comments about the target student's behavior. (Ervin et al., 1996). Improvements in social behaviors for both tutors and tutees were observed following a peer tutoring intervention that utilized peer-administered praise to modify the behavior of target peers with behavior problems (Kalfus, 1984). Also, peer counselors trained in conflict resolution to assist individual students as part of a school-wide antibullying campaign reported positive feedback, including increased self-

confidence, sense of responsibility, and a sense of contribution. Additionally, a decreased need to report students on a formal school report was observed. Peer counselors were trained to care, listen, and help peers to find their own solutions and advised not to give advice or tell peers what to do. Specifically, peer counselors reported positive responses, including increases in self-confidence, sense of responsibility, and positive feelings due to making a positive contribution to the school environment (Price & Jones, 2001). Therefore, existing research suggests that peer-administered interventions benefit both the individual tutor and tutee. However, research on the effects of peer-administered praise interventions on the entire student body is lacking.

Benefits of Peer-Administered Interventions

There are a number of important benefits of peer-administered interventions including a decrease in teacher effort, cost effectiveness, training of peers, monitoring peers, and performance feedback. These variables will be individually discussed below.

Decrease in Teacher Effort

A clear benefit to a peer-tutoring program is the subsequent decrease in teacher effort (Kalfus, 1984). Considering the fact that many schools have a large teacher-to-student ratio and high standards for teacher accountability, teachers typically have minimal time for additional school improvement programs (Sugai et al., 1999). The utilization of peer tutors as behavior change agents alleviates the need for teachers to increase their ample workload (Enright & Axelrod, 1995; Fowler, 1986).

Cost-Effectiveness

Practically speaking, peer-tutoring programs are cost-effective because they rely on abundant resources (i.e., students) while staff resources may be limited. Other programs to improve student academic skills such as computer-assisted instruction, increased learning time, and reduced class sizes require additional technology equipment or paid employee hours, which inevitably increase restricted school budgets (Greenwood et al., 1988).

Training

Research has been conducted to identify beneficial components included in peer-tutor trainig. First, peer monitors should be trained on prerequisite skills necessary to implement the intervention. Also, peer tutors should observe models of appropriate tutoring and tutee behavior, participate in role-play activities, and receive feedback from a supervisor on performance (Enright & Axelrod, 1995). Greenwood (1997) found that peer training significantly increases positive changes in behavior or academic performance and increases reliability and accuracy of treatment implementation.

Monitoring

Similar to concerns with treatment integrity with teacher-administered interventions, peer treatment integrity was a concern for peer tutoring interventions. Few studies investigate whether tutors accurately carry out their responsibility (Greenwood et al., 1988). It seems likely that monitoring peer monitors will improve peer integrity.

Performance Feedback During Training

Performance feedback provides peer tutors with information regarding the accuracy of their performance in order to enhance and maintain proper behavior change (Kazdin, 1994). Children who have behavioral disorders have been shown to master the tutor or tutee skills in two or less training sessions, when regular feedback is incorporated into tutoring sessions. Integration of positive praise and error correction into feedback performance enhances training progress because it identifies when a peer accurately carries out the strategies before the intervention begins (Enright & Axelrod, 1995).

School-Wide Intervention Programs

Research findings indicate that problem behaviors are continuously increasing within elementary schools (Beach Center on Families and Disability, 1998; Langdon, 1997). Over the past 20 years, administrators indicate that student behavior problems have become more violent, pervasive, and destructive (Center for Effective Collaboration and Practice, 2000). Investigations have indicated that school-wide safety, violence, behavior problems, and lack of discipline are among the top 10 concerns about public education among school administrators (Langdon). The general public also rated the frequency and pervasiveness of behavior problems, lack of discipline, and violence within schools as among the top ten concerns facing public education (Rose, Gallup, & Elam, 1997). Teachers also report that the amount of time spent managing student misbehavior, which takes away from time spent teaching and

learning, is a serious concern (Sugai et al., 1999). Therefore, a need to develop effective school-wide intervention programs has been identified (Sugai et al.).

School-wide intervention programs have several benefits. First, all educators collaborate to define behavioral expectations to be targeted in the intervention program, forming a unified discipline approach (Nelson, Colvin, & Smith, 1996). In addition, when a school-wide intervention program effectively improves student behavior, the teacher is able to spend more time on academic instruction instead of student discipline. School safety is also increased if school-wide behavior problems are reduced, because behavior problems such as bullying, violence, or out-of-seat behavior increase the potential for accidents or harm inflicted on other students. Because a school-wide intervention targets all students, more students will learn new skills or appropriate behaviors than if individuals are targeted. Another potential benefit of school-wide interventions is that behavior changes will ideally generalize to other behaviors, settings, or situations within the school (Greenwood et al., 1988). Despite these benefits, the identified need for school-wide intervention programs, and the fact that previous research indicates that peers are a viable option for implementing praise, few studies have investigated the use of peers for interventions that target behavior change for school-wide populations.

Positive Behavioral Support Interventions

Public schools are facing increasing demands to create positive and safe school environments in which students learn skills and behaviors in order to be successful

adults (Center for Effective Collaboration and Practice, 2000). In fact, schools are continuously being asked to achieve more initiatives with proven results, such as to improve literacy, enhance character, and facilitate school-to-work transitions for students (Sugai et al, 1999).

To reach these goals, many administrators have made a commitment to prevent and redirect misbehavior before the need to formally address the problem arises. As a result, more emphasis has been placed on school-wide interventions that can effectively target all students in order to prevent behavioral problems (Center for Effective Collaboration and Practice, 2000). Strategies employed by administrators to reduce school-wide problem behaviors typically include coercive strategies, punishment, or office referrals. However, none of these strategies have proven to be effective in reducing challenging and violent behavior (Beach Center on Families and Disability, 1998). Therefore, empirical investigations of prevention practices effective in reducing school-wide problem behaviors have recently become a focus of educational research (Colvin, Sugai, Good, & Lee, 1997).

Positive behavioral support (PBS) interventions have recently received increased attention due to empirical findings that support their effectiveness in achieving desired behavior changes among students (Sugai et al., 1999). The positive behavioral support approach is based on several principles. First, positive reinforcement for appropriate behaviors is a focus of PBS interventions (Sugai et al.). Teachers and other school staff members tell students what they did correctly and praise them for their appropriate behavior. Second, positive behavioral support interventions attempt to achieve a

uniform discipline approach with common expectations and consequences for student social behavior among school administrators and staff members (Center for Effective Collaboration and Practice, 2000). Related, active participation and commitment of school administrators is stressed because research findings suggest that positive results increase when the entire school staff is committed to universal prevention (Sugai et al.). Involvement of all school employees allows the implementation of prevention strategies to be consistent across school settings, including hallways, playgrounds, and cafeterias. Finally, PBS interventions incorporate data collection and analysis to monitor improvement and guide decisions regarding current and future interventions (Sugai et al.).

Results of an investigation of the effectiveness of PBS interventions with individuals with developmentally disabilities indicate that PBS is effective in one half to two thirds of the cases using stringent criteria. When PBS is based on functional assessment, success rates nearly double (Carr et al., 1999).

Transition Setting Behaviors

There are a number of school-wide problem behaviors that are commonly reported by school personnel that occur in nonclassroom settings. In fact, approximately 50% of the problem behaviors reported to the school office originate from nonclassroom settings such as cafeterias, hallways, buses, and playgrounds (Taylor-Green et al., 1997, as cited in Colvin et al., 1997). Evidence suggests that teachers rarely incorporate praise statements when monitoring transition settings. An

investigation of teacher rates of disapproval and approval in transition areas found a predominance of disapproval statements administered by teachers during transition times (Wyatt & Hawkins, 1987). Transition settings may set the stage for problems in many schools, partly due to the fact that behavioral expectations differ from teacher to teacher and staff supervision is limited in these areas (Colvin et al.).

One school-wide problem behavior commonly reported by teachers is running in transition areas, including hallways and cafeterias. A survey completed by 62 teachers and administrators at a middle school with 641 students indicated that teachers were displeased with hallway behavior, indicating that school safety and academic time were compromised due to high incidences of running and misbehavior. Survey results also indicated that teachers intervened approximately 50% of the time. Reasons for not intervening included (a) teachers felt that they were too busy, (b) they did not feel supported by administrators and other teachers, and (c) they did not know students who were misbehaving (O'Brien, 1998). Despite the fact that teachers did not agree on how often to intervene after observing running in the hallways, data indicated that they wanted a unified hallway policy to be implemented (O'Brien).

In contrast to the high rate of problem behaviors reported by school staff in hallways and other transition areas, few interventions have been implemented in these settings. One such school-wide intervention plan was implemented to reduce problem behaviors in transition areas including the entrance to the school building at the beginning of school, the entrance to the cafeteria at lunchtime, and the exit of the school building at the end of the day. Teachers administered precorrection, defined as an

instructional event designed to prevent the occurrence of problem behavior and to facilitate the occurrence of more appropriate behavior, and active supervision strategies, or specific and overt behaviors designed to prevent problem behavior and promote rule-following behavior. Subsequent to teacher-administered precorrection and active supervision strategies, reductions in student problem behaviors such as pushing, running, and hitting were observed (Colvin et al., 1997). While this intervention explored the effectiveness of a school-wide behavior change in transition areas, it relied on teacher effort and did not incorporate the administration of praise. Other limitations of this study include the lack of a follow-up phase, the absence of direct observations to determine teacher treatment integrity, and the fact that the study was conducted over a short period of time at the end of the year (Colvin et al.). Therefore, further research is needed to determine the effectiveness of planned contingencies, such as praise, to influence appropriate behavior change in transition settings.

Summary

This review of literature suggests that more research is needed to determine the effectiveness of a peer-mediated positive behavioral support intervention to improve a school-wide social behavior. A major problem in schools is an increasing number of school-wide discipline problems and disruptive behaviors. School-wide problem behaviors in transition areas, such as running, are commonly cited as major concerns for teachers and administrators (Beach Center on Families and Disabilities, 1998). However, few empirical investigations of school-wide positive behavioral support

interventions that incorporate peer-administered praise have been conducted.

It is relatively well established that praise is an effective strategy for inducing behavior change among students (Jason et al., 1979; McGee et al., 1983; Siero & van Oudenhoven, 1995; Sutherland et al., 2000). Although teacher-administered praise produces significant improvements in student on-task behavior, the percentage of approval responses provided by teachers is typically low, particularly in transition areas (Wyatt & Hawkins, 1987). This study was based on the supposition that peers can effectively use praise to increase incidences of walking in school hallways. While peer-tutoring programs are effective in improving academic skills, few studies have investigated the effectiveness of peer-administered social behavior interventions. The existing empirical investigations of peer tutoring programs for social behavior have found that they are effective in improving social skills and decreasing negative social behaviors among students. However, most studies involve individualized programs to reduce behavior problems in contrast to school-wide positive behavioral support interventions. If effective, the implementation of a peer-mediated positive behavioral support intervention will increase incidences of the desired behavior, increase school safety, increase academic time, clarify expectations for students, and decrease teacher effort.

The method of DRI behaviors was employed in order to decrease incidences of the problem behavior. In other words, because running was targeted for reduction, walking was reinforced because these two behaviors cannot occur simultaneously. Because running was easier to observe and code, this study investigated the relationship

between a peer-mediated positive behavioral support intervention program and incidences of running in the hallway. Specific research questions were as follows.

1. What is the effect of a school-wide positive behavioral support intervention package that includes verbal instructive praise, written praise notes, and a weekly lottery system on running in the hallways in an elementary school?

2. To what extent will this treatment be maintained over time?

CHAPTER III

METHOD

Setting

The setting was an elementary school (K-5th grade) in Cache School District located in a rural community in northern Utah. The town has a population of 1202 citizens. The school has 22 teachers and 10 additional staff members. Baseline and intervention sessions for the study were conducted in two settings. The first setting was the hallway on the south side of the school cafeteria from which students leave after lunch to go to recess. The second setting was an area of the south hall of the school building closest to the exit where the school buses park upon arrival or departure. Both settings were common hallway areas through which most students must walk in order to comply with the daily school schedule. These areas were chosen because the school principal and teachers identified them as problem areas where student problem behaviors were highest. The two hallway settings provided natural environments for the data collection of the frequency of student problem behaviors. The areas where data was collected were approximately 20' x 7' rectangular shapes defined by the field of view of a hidden video camera.

Setting 1: Exit Hallway

Data were collected in the first problem area, which was located where students transition through the south hallway to the building exit doors to get on the school buses at the end of the day. Peer monitors administered praise to students walking

appropriately in a 20' x 7' area. Existing natural markers, such as classroom and school building, identified this area. Peer monitors were located in this area for 10 minutes from 3:15-3:25 p.m. each day during Peer Treatment Phase I and II of the intervention.

Setting 2: Cafeteria Hallway

Data were also collected in the second problem area, which was located where students make a transition from the cafeteria, through the hallway, and to the playground after lunch. The dimensions of this area were also 20' x 7' and identified by existing markers. Peer monitors were located in this area for 10 minutes from 12:25-12:35 p.m. each day during Peer Treatment Phase II of the study.

Participants

Student School Population

Four hundred forty-nine elementary school students enrolled in a local public elementary school were the participants in this study. Because all students could potentially receive praise for appropriate hallway behavior and were monitored for running behavior through transition areas during peer monitor session, they were included in the study. Individual student behaviors were observed and recorded; however, data were analyzed by the group population of students rather than by individual. Because all students in the elementary school were potential participants, the only qualifying characteristic for inclusion in the study is that they were present in the specified areas during observation periods.

Eighty-five percent of the students in the school were Caucasian, 11% were

Hispanic, 1.6% were American Indian, .5% were Asian, 1.1% are Pacific Islander, and there were no African American students enrolled when the study was conducted. Seventeen percent of the students qualified for free lunch and 22% qualified for reduced lunch. Prior to implementation of the intervention, all parents signed a consent form allowing their children to be videotaped at school. A letter to all parents explaining the purpose of the study was sent home with children (see Appendix I).

Peer Monitors

Peer monitors implemented the peer praise intervention, which will be referred to as the Peer Mediated Rewards (PMR) intervention, used in this study. Ten peer monitors were selected in successive steps. First, the faculty advisor to the student council and the principal selected students from the fourth- and fifth-grade student council members. These students were nominated based on the criteria that they were considered leaders by their peers, responsible, and displayed good judgment. Next, the student researcher and faculty advisor to the student council discussed the purpose of the study, possible benefits, and potential negative effects with nominated student council members. Each nominated student then decided if he or she would like to be a peer monitor for this intervention. If a student was interested, he or she was required to provide written assent and written parental consent for his or her participation (see Appendices A and B). Two of the 10 students who began the training process did not become a peer monitor. One of the students was asked to terminate his role as a peer monitor due to inappropriate playground behavior. The other student did not complete the training due to schedule conflicts. Eight of the 10 nominated students successfully

completed the selection and training process and became peer monitors.

Experimental Design and Conditions

A multiple baseline design across two hallway settings was utilized to assess the effects of peer implementation of a praise intervention on school-wide running behavior. Behaviors in two settings identified by school staff as having high frequency of problematic student behaviors were observed, namely the southern hallway of the school and the hallway outside the cafeteria. This study consisted of the following conditions.

Baseline

The first phase was the baseline phase with no intervention in effect. During this phase of the study, the video camera was positioned and programmed to record running behavior in both settings during the designated transition times. An observer collected the videotapes with session recordings at the end of each day. Observers then recorded incidences of running in the two hallway settings by using the observation and recording procedures described above on the same day the video was recorded so that timely phase decisions could be made. After a stable baseline was established, the treatment phase was implemented. Stability was determined by following guidelines of visual analysis as described by Parsonson and Baer (1978). For example, Parsonson and Baer suggest that baselines that are stable or drift in the direction opposite to improvement allow more confidence to be placed in attributing change to the effects of the intervention. Another guideline outlined by Parsonson and Baer is that more data

points are necessary to determine stability when there are clear indications of variability, overlap, or drift in the data. As such, these guidelines were followed when making phase change decisions and after consensus was reached between the student researcher and the major professor.

PMR Treatment I: Setting 1: Exit Hallway

The PMR intervention consisted of a number of steps. Peer monitors made praise statements to students who were appropriately walking. Praise statements included the following components:

1. *Contingent:* The praise statement was provided if and only if a student was not running. Therefore, the peer monitor only gave praise statements to students who were walking and ignored students who were running.

2. *Specific:* The peer monitor described to the student exactly what he or she did that was appropriate. Therefore, if a student was walking, the peer monitor said, "Thank you for keeping our school safe by walking down the hall," while handing the student a praise note with the same written message on it.

3. *Immediate:* The peer monitor delivered the praise statement as soon as possible after the appropriate behavior occurred. The peer monitor gave the praise statement and praise note during the 10-minute session. If students who were appropriately walking complained that they did not receive a praise note, peer monitors were instructed to say, "You were also doing a very good job walking. If you continue to walk, I bet you'll get one next time."

After a stable baseline was established, or counter-therapeutic trends were

observed, peer monitors implemented the intervention phase in the first setting. During this phase, peer monitors followed the series of steps specified in training sessions when providing written praise notes and verbal praise statements (see Appendix G). The praise note recipient was instructed to write his or her own name on the back of the praise note and give it to their teacher to place in the lottery cup.

PMR Treatment II: Setting 2: Cafeteria

When frequency counts of running stabilized in the first setting, the intervention was implemented in the south hallway nearest the cafeteria. Peer monitors handed out praise notes accompanied with verbal praise statements in the same manner as in the first hallway setting.

Maintenance. The final phase of this study was a maintenance phase. It occurred after the termination of the PMR intervention and a hidden video camera recorded student behavior during the same times and in the same settings as during the treatment phase. However, peer monitors and treatment variables were not present during this phase. Data observers coded the incidences of running using the same recording procedure as during the intervention phase. Due to technical difficulties and user error, 13 peer monitor sessions were not recorded.

Dependent variables. The primary dependent variable was the incidences of running because this study examined the effectiveness of an intervention that is designed to increase appropriate hallway behavior (i.e., walking) among students. Because running was more obvious and less frequent than walking, this behavior was chosen to observe and code. Running was defined as when both of the student's feet

were off the ground at the same time, which includes hopping, skipping, and jumping. Speed walking was not included in this definition of running.

Dependent measures. Observations of all sessions were conducted for 10 minutes in each hallway setting. Session duration was determined by the observation that all students moved through these settings immediately before, during, or after the bell rang and exited within 10 minutes.

All experimental sessions were recorded by a hidden video camera located in each transition area. Video cameras were inconspicuously placed close to the ceiling in order to record the same 20' x 7' area in which peer monitors were responsible for administering praise. Each video camera was connected to a VCR that was programmed to record each peer monitor session. The entire 10-minute peer monitor session was recorded and coded whether the peer monitor reported to the session or not. The running time of the recording was displayed on the videotape in minutes and seconds so observers were aware of the beginning and end of each 15-second interval and times of intervals would correspond exactly between observers. The time correspondence allowed an interrater reliability check to be conducted for every peer monitor session. The VCR was located in the school janitor's closet, which was situated between the two settings. Placement of the cameras in this hidden location prevented student awareness of the videotaping of the peer monitor sessions. A data observer collected the videotape in use and replaced it with a new videotape each day throughout the study.

Frequency recording sheet. Observers used a frequency recording sheet to

record incidences of running per interval and total incidences per session (see Appendix D). Data observers watched each videotaped peer monitor session and coded incidences of running using a frequency coding procedure with 15-second intervals. Every time a student was determined to be running during a 15-second interval, that incidence of running was coded with a checkmark. Hence, more than one incidence of running could be coded within one 15-second interval. If no incidences of running occurred during an interval, a "0" was recorded at the end of the 15-second interval. After the entire session was coded, the total number of incidences of running for each interval was recorded at the bottom of the space for that interval on the frequency recording sheet. Next, the total number of incidences of running per session was recorded at the bottom of the frequency recording sheet.

Observer training for running observations. The independent observers were undergraduate psychology students at Utah State University. The student researcher trained the observers in the coding methods in a series of steps. First, the operational definition of running was explained and discussed. Then, observers were given verbal and written instructions on how to record incidences of running. Next, observers viewed practice video sessions and coded data according to the provided instructions. Incidences of running were systematically recorded on the frequency recording sheet. Guided practice was conducted until observers were in perfect agreement with the student researcher with a Pearson product-moment correlation of 1.00. Two observers joined the data collection procedure after the formal training was completed; therefore, the student researcher met with them individually for guided practice sessions. Both

observers were required to be in perfect agreement with the student researcher before they were eligible to code data.

When the videotape coding method of data collection was piloted with trained data observers, high rates of reliability were required. Interrater reliability rates of 1.0 were required before the onset of the intervention phase. If low interrater reliability had been apparent (i.e., below 1.0 for more than three consecutive sessions), a review session of the operational definition and additional coding practice would have been held for observers. However, because low interrater reliability was not apparent for more than three consecutive sessions, a review session was not needed.

Interrater reliability. Interrater reliability data were collected for 100% of observations during all phases of the study. In other words, two different observers coded the incidences of running for each session at separate times. Data were summarized by instances of running within 15-second intervals. Estimates of interrater reliability for these data resulted from computing the Pearson product-moment correlation formula (Gelfand & Hartmann, 1975). The Pearson product-moment correlation assesses the extent to which observers covary in their scores. In other words, a correlation in the elevated range (.80-.90) indicates that agreement was high in regard to the total incidences of running coded during each session. Medians of the interrater reliability correlations during baseline condition were .979 in the exit hall and .960 in the lunch hall. During the treatment phase, medians of interrater reliability correlations were .974 in the exit hall and .966 in the lunch hall. Medians during the maintenance phase were .989 in the exit hall and .986 in the lunch hall. Data regarding

interrater reliability are reported in Figure 1.

Independent Measures

Praise notes. A praise note that said "Thank you for making our school a safe place by walking quietly in the hall" was given to students who were walking appropriately in the designated setting (further explanation provided in the Procedure section). There was a line on the back of the praise note where the recipient was instructed to write his or her name for identification during the lottery drawing. Praise notes were color coded so that a different color was used for each setting and day of the week (see Appendix C). Praise notes that were given to the teacher by the student recipient were kept in their teacher's lottery cup. A data observer gathered the praise notes from the lottery cups in each classroom at the end of each week during the treatment phase. A data observer then counted and tabulated the praise notes,

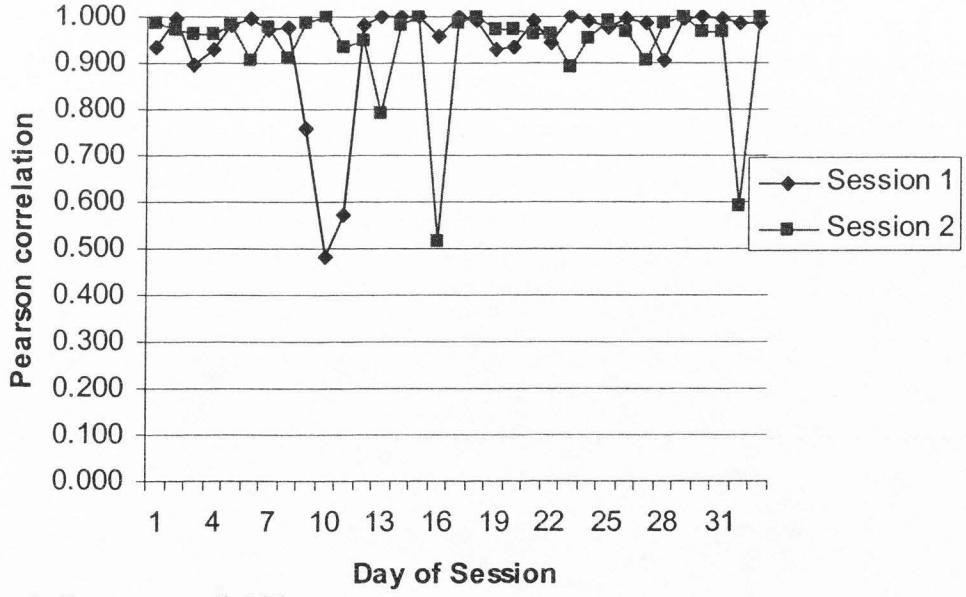

Figure 1. Interrater reliability.

summarizing by daily tabulation. These data aided in the verification of the treatment effect and peer monitor treatment integrity. However, on several occasions, data observers forgot or were unable to collect praise notes from every classroom due to tardy arrival to the school. Ten praise notes were randomly drawn for prizes from the pool of praise notes administered to be selected as winners of the lottery drawing. At that point, the names of the winners were announced over the intercom and winners chose a small prize out of a group of prizes. On Day 46, the number of prizes increased from 10 to 20 in order to increase saliency of the treatment effect. After the names of the prize recipients were publicly announced over the intercom by a peer monitor and a data observer, the winners reported to the school's front office to choose a prize worth approximately $1 (i.e., candy, toy).

Contingency-based lottery drawing. A lottery drawing was conducted by a data collector or student researcher and a peer monitor at the end of each week during the treatment phase. Specifically, the data collector and peer monitor gathered all praise notes that were returned to teachers' jars and randomly drew 10 or 20 names. The names were announced over the intercom as winners of the lottery drawing and they were provided positive reinforcement. Winners were asked to report to the front office, where they chose a tangible prize worth approximately $1.

Praise note tabulations. Praise notes administered by peer monitors were tabulated on a weekly basis in order to investigate peer monitor treatment integrity. During the treatment phase, praise note tabulations indicated that the administration of praise notes was variable but was 10 or more during most peer monitor sessions.

Procedure

Daily Treatment Sessions

Peer monitors were given a schedule of their assigned times and locations to monitor on a weekly basis. Two peer monitors were designated as leaders, meaning that they were responsible for checking the monitor areas to ensure that the scheduled peer monitor was present. When the peer monitor was not in the designated location at the appropriate time, the peer leader prompted the scheduled peer monitor or monitored the areas himself or herself. The scheduled peer monitor picked up praise notes from the office secretary before reporting to the specified transition setting. Peer monitors then implemented the PMR intervention as soon as the session time began and students from the general student population entered the target area. At the end of the 10-minute session, the peer tutor returned the envelope of praise notes that were not distributed during the session to the front office secretary.

Peer Monitor Intervention Training

Three 1-hour peer intervention training sessions were held during weekly student council meetings with the faculty advisor to the student council and the student researcher. Training included: (a) discussing the rationale for peer monitors and the importance of the peer monitor role; (b) teaching the effects of positive reinforcement, the specific components of the verbal praise statements, and the operational definition of running; (c) modeling appropriate praise note administration; (d) modeling inappropriate praise note administration; (e) student role plays of appropriate praise

note administration; and (f) administration of feedback from student researcher and faculty advisor. During peer monitor training sessions, the faculty advisor used a checklist to ensure that all areas specified were taught to the peer monitors (see Appendix E). The faculty advisor indicated with a check mark that each concept was taught correctly and accurately.

Peer monitors practiced praise note administration during role plays in the hallway and received feedback from the faculty advisor and student researcher until three consecutive correct performances were observed. Implementation of the treatment did not begin until this standard was met. A data observer observed the peer monitors after the training (approximately once each week) throughout the treatment phase and recorded how many of the specified steps for praise note administration were followed. The data observer utilized the peer monitor rating sheet when he or she was physically present to observe the peer monitor during the peer monitor session (see Appendix F).

Peer scripts and schedules. Each peer monitor received a peer script, a condensed instruction sheet, to follow when administering praise notes and verbal praise (see Appendix G). A weekly schedule that detailed which peer monitor was assigned to each peer monitor session was placed in teachers' mailboxes at the beginning of each week throughout the treatment phase.

Teacher Training

The student researcher discussed the purpose and procedures of the study with all classroom teachers before implementation of the intervention. Teachers were trained

on how to educate their students about the role of the peer monitor as well as the appropriate way to walk in the hallway in order to receive a praise note. The principal reminded teachers to teach this lesson to their class over the school intercom the day before the treatment was implemented.

Teachers were responsible for placing a lottery cup in a designated location in their classrooms at the beginning of the intervention. After a student earned a praise note, he or she was instructed to give it to his or her classroom teacher who put it in the lottery cup.

Teachers. All classroom teachers were given training materials that described the purpose of the study and specific methods to teach students to walk in a manner that would make them eligible to receive a praise note. Classroom teachers explained the appropriate behavior and details regarding the intervention procedures to their students. Teachers were also instructed to explain to all students that the recipient of a praise note should give the praise note to the teacher to place in the lottery cup. Teachers distributed letters to each student to take home to their parents describing the school's participation in the study and the objectives of the intervention, which were to improve school safety and improve a school-wide social behavior (see Appendix I).

According to verbal reports provided by the faculty advisor to the student council and peer monitors toward the end of the treatment phase, several teachers felt as if the intervention was unfair. Some students were not able to receive praise notes because their schedules did not allow them to be in either of the two settings when peer monitor sessions were conducted. Also, peer monitors reported that students did not

feel as if they were adequately reinforced for their efforts. In an attempt to increase support among faculty members and the student body, and to gain additional control of the target behavior, several measures were taken. First, a memo was written by the student researcher and given to all teachers that addressed these concerns (see Appendix J). Specifically, the fact that this intervention could be expanded or modified in the future was emphasized. In addition, the fact that the amount of weekly lottery prizes provided to students would increase from 10 to 20 was discussed. Also, the student researcher announced the decision to administer prizes to all fourth-grade students whose classroom was located in a trailer outside of the school building because this location significantly decreased their opportunities to walk through the settings of peer monitor sessions. Data were shared with the school principal that showed the positive effects of the intervention. Finally, a gift certificate was provided to the faculty advisor to the student council to thank her for her support and hard work throughout the intervention. All of these efforts were carried out on Day 45 of the study.

Teacher training materials. Prior to implementing the intervention, teacher training materials were provided to each classroom teacher describing the intervention. Materials included methods of teaching their students about the role of the peer monitor and the hallway behavior that would enable them to earn a praise note.

Peer Treatment Integrity

We defined "peer treatment integrity" as the degree to which the peer carried out the intervention as designed (Gresham, 1989). Peers were expected to deliver verbal praise statements and a praise note to every fifth student who was walking in the

hallway. Peers were instructed to: (a) count for 5 seconds after each praise note given out, (b) look at his or her monitor area, (c) walk to a student who was walking, and (d) issue a verbal praise statement and a praise note. The treatment required the peer to complete these four steps for each administration of praise. While peer monitors were initially advised to hand out one praise note to approximately one of every five students who were walking, they were advised to increase the rate of administration to one in every three students on Day 23. This modification was made to increase potency of the independent variable because incidences of running was not zero as expected.

Treatment integrity was measured during 17% of the 10-minute transition sessions. Either a data observer or the student researcher conducted one observation during 17% of the peer monitor sessions, or 11 of the sessions, to ensure peer monitor treatment integrity. In other words, each peer monitor was observed approximately once out of every five of his or her scheduled sessions. If a peer monitor was observed to miss two or more of the specified steps, a brief booster session was conducted. This never occurred. If the peer monitor was observed to have difficulty conducting the procedure correctly a second time, the peer monitor would have been given a different opportunity to provide school service. However, none of the peer monitors required a booster session.

A data observer or the student researcher used the peer monitor rating sheet to rate the peer monitor's ability to administer praise effectively when conducting peer treatment integrity checks. Checkmarks were placed next to each step that the peer monitor successfully completed as specified in the treatment protocol, including a

checkmark for each component of the praise statement. The total number of checkmarks was recorded at the bottom of the page (see Appendix G). Ratings for each observed peer monitor session ranged between 83% and 100% during the sessions that were checked by a data collector. During one scheduled peer monitor integrity check, the peer monitor did not report to his session; therefore, a Peer Monitor Rating Sheet could not be completed.

Due to verbal reports and observations of missed peer monitor sessions or variations in times reported to settings, the student researcher encouraged peer monitors to report to their scheduled sessions as indicated and administer praise notes more frequently. Praise note tabulations did not correspond to peer monitors' verbal reports of number of praise notes administered. Peer monitors were given small prizes on Day 45 of the treatment phase in order to increase their motivation. Immediately following the treatment phase, a pizza party was provided for all peer monitors to reward them for their efforts throughout the intervention.

Peer monitor rating sheet. A data observer or student researcher used a Peer Monitor Rating Sheet to rate the ability of peer monitors to administer praise according to the specified steps (see Appendix F).

Social Validity

A rating scale of treatment acceptability was placed in each teacher's school mailbox on the final day of the study, which corresponded with the last day of the school year. Teachers were asked to complete the rating scale and return it to the student researcher in a self-addressed stamped envelope (see Appendix H).

CHAPTER IV

RESULTS

Comparisons of Means From Each Phase

Figure 2 displays the incidences of running during the baseline, peer treatment phase, and maintenance phase across two settings. Table 1 presents the mean, median, and range of the incidences of running behavior across three experimental conditions in both settings. In each setting, three evaluations were used to assess differences in running performance between baseline, treatment and maintenance phases: visual inspection of the time-series data, comparison of mean percentages of running incidences, and inspection of the percentages of the overlapping data points between the three phases.

Exit Hall

During the baseline condition, high levels of running occurred with a mean of 45.3 in the exit hallway setting. Running performance was highly variable during baseline but with no apparent increasing or decreasing trend. After implementation of the PMR intervention, the baseline mean of 45.3 decreased to a mean of 21.6 during the treatment phase. Incidences of running substantially decreased within the first two sessions. A comparison of the median of the last three days of baseline to the median of the first three days of treatment phase indicates an abrupt decrease in incidences of running such that the ratio was 45:23. The low level of running remained below baseline performance until a slight increasing trend of behavior was obtained in the

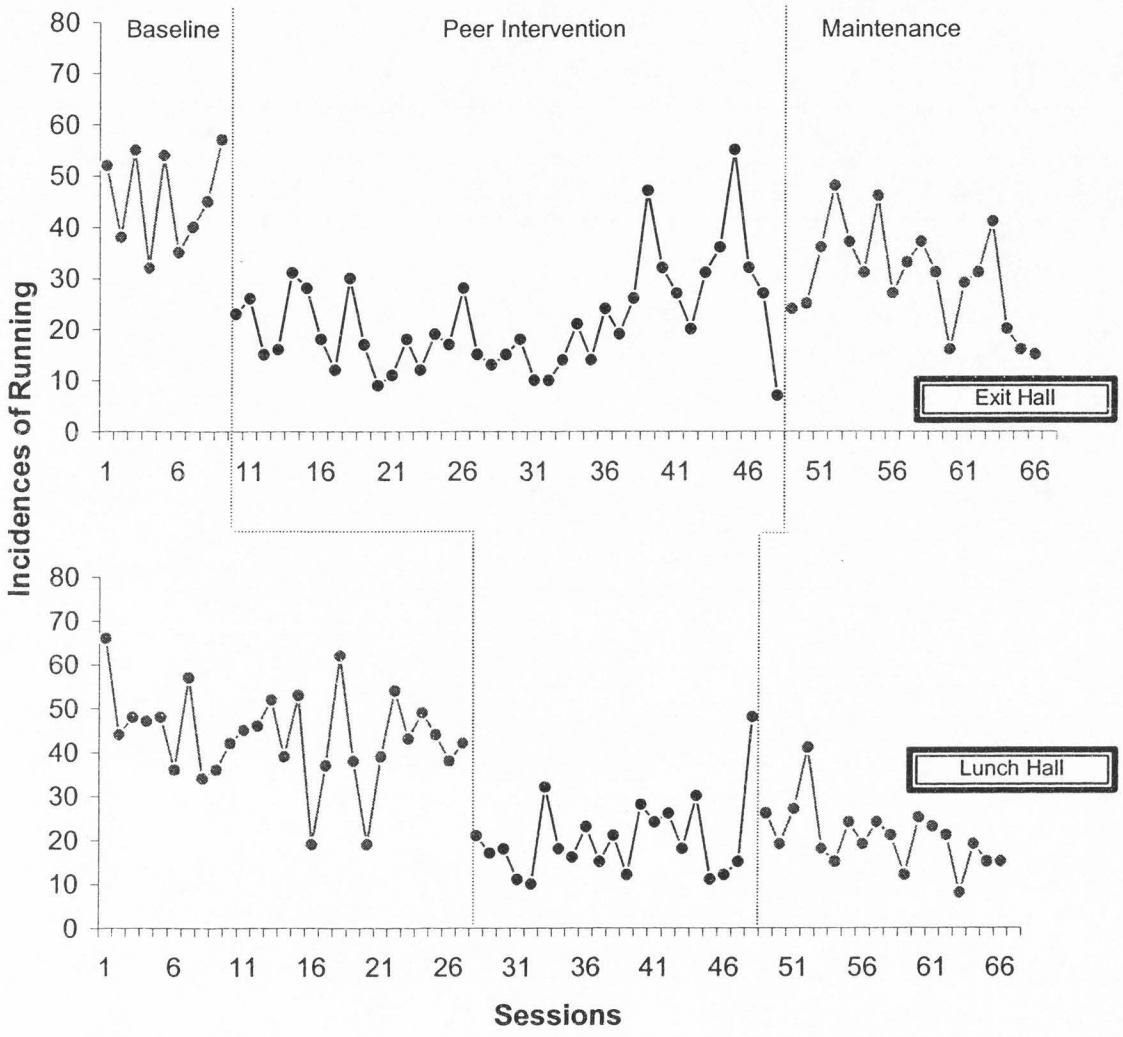

Figure 2. Incidences of running in two hallway settings across experimental conditions.

Table 1

Means, Medians, and Range of Incidences of Running in Two Hallway Settings

Setting	Mean	Median	Range
Exit hall			
Baseline	45.3	45	35-57
Treatment	21.6	19	7-47
Maintenance	34.4	31	15-48
Lunch hall			
Baseline	43.6	39	19-66
Treatment	20.3	18	10-48
Maintenance	20.6	19	8-41

direction opposite of the desired treatment effect after 7 weeks of the PMR intervention. As evident in the data presented in Figure 2, incidences of the target behavior gradually increased after Day 39 in the exit hall. A decrease in running was observed following the enhanced treatment integrity phase that started on Day 45.

After the removal of treatment, levels of running slightly increased in comparison to the treatment phase level to a mean level of 34.4. Specifically, incidences of running initially increased after two sessions but steadily decreased downward to a performance level similar to the peer intervention phase within five sessions.

Lunch Hall

During the baseline condition, a high level of running was observed with a mean of 43.6. Similar to the exit hall, high variability in running was obtained during

baseline in the lunch hall setting with very little evident change in the trend of running behavior. A significant decrease in the mean of the target behavior was observed in the second setting immediately after implementation of the treatment phase. Specifically, the baseline mean of 43.6 fell to a mean of 20.3 during treatment phase in the lunch hall. The ratio of the last three days of baseline to the first three days of treatment was 42:18 in the lunch hall. The degree of trend of performance during the peer intervention phase remained relatively stable with percentage of running behavior consistently below baseline performance. A slight upward trend in the target behavior can be observed in the lunch hall even after the enhanced treatment integrity phase on Day 45 of the study.

A comparison of the average level of performance between the intervention and maintenance phases indicates that the decrease in running obtained with implementation of the peer intervention was maintained for 4 weeks after the termination of the intervention in both settings. Incidences of running initially increased when treatment was removed with a steady decrease in trend nearing the same level observed when treatment was implemented. The study terminated on the final day of the school year; therefore, stability could not be attained prior to the end of the maintenance phase.

The apparent variability of the data within and across phases and settings was relatively high; however, this is typical of a large group of children whose schedules and behavior are unpredictable. There were no notable changes in the degree of variability within or across settings or phases. However, an analysis of the changes in level between phase conditions along with changes in descending and ascending trends of performance suggest clear intervention effects on behavior over time.

Overlap of Data Points Between Adjacent Phases

Due to the amount of variability obtained during each experimental phase, the number of overlapping data points between adjacent phases and percentages of overlapping data points was computed. Therefore, the amount of times that the incidences of running during the intervention and maintenance phase fell at or above the lowest incidence of running observed during baseline condition could be compared. A high number of overlapping data points or a high percentage would indicate that few data points fell above or below the prior experimental condition, indicating little change in running behavior during the subsequent experimental condition. Table 2 summarizes the percentage of overlap between experimental conditions in both settings.

It can be noted that there was minimal overlap between baseline condition and the peer treatment phase in either setting. Specifically, there was a 7.69% overlap in the incidences of running between baseline and treatment conditions in the exit hall and a 42.9% overlap in the lunch hall. In contrast, there was a 94.4% overlap in the incidences of running between treatment and maintenance conditions in both settings (see Table 2). Therefore, a minimal amount of overlap in data points was seen between baseline and treatment phases in both settings. In contrast, there was a significant

Table 2

Percentage of Overlap Between Adjacent Phases

Setting	Baseline to treatment	Treatment to maintenance
Exit hall	7.7%	94.4%
Lunch hall	94.4%	94.4%

amount of overlap in data points between treatment and maintenance phases in both settings.

Social Validity Ratings

Social validity rating questionnaires were completed by teachers at the end of the study to assess acceptability and feasibility of the peer-administered praise treatment program as a school-wide problem behavioral intervention. Ten of the 20 social validity rating scales were returned. The social validity questionnaire consisted of 10 questions that were rated on a Likert scale of 1 to 6, with a rating of 6 being the highest, or "*Strongly Agree.*" An endorsed rating of 6 points, or "*Strongly Agree,*" would indicate that the item was highly acceptable by the teacher.

Overall, comments provided by teachers were primarily positive. Results indicated that the item rating of "*Slightly Agree*" (4) occurred most frequently across social validity items, with a mean of 33.33%. The second most common item rating was "*Agree*" (5) with a mean of 20.83%, followed by "*Strongly Agree*" (6), with a mean of 12.50% (see Table 3). Specific concerns noted by teachers included unequal opportunities for reinforcement among students due to the short duration of peer monitor sessions and varying schedules and locations of students within the school

Table 3

Mean Percentage of Social Validity Item Ratings

Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
10.42%	11.46%	11.46%	33.33%	20.83%	12.50%

building during sessions. Additional teacher concerns included the possibility that providing tangible reinforcers would increase students' dependency on tangible rewards or that the presence of a peer monitor was necessary in order to achieve an improvement in the target behavior. Findings regarding individual item ratings of treatment acceptability are reported in Table 4 in which "Disagree" was considered ratings of 1-3 and "Agree" was considered ratings of 4-6.

Table 4

Social Validity Ratings of Peer-Administered Praise Intervention

Praise intervention	Disagree (%)	Agree %	Mean rating
This is an acceptable intervention for student problem behavior.	30	70	3.4
Most teachers would find this intervention appropriate for behavior problems in addition to the one targeted for this intervention.	30	70	3.7
I would suggest the use of this intervention to other teachers.	33	77	3.6
I would be willing to use this intervention in the classroom setting.	12.5	87.5	3.6
This intervention would not result in negative side effects for the child.	20	80	4.6
This intervention would be appropriate for a variety of children.	20	80	4.3
The intervention was a fair way to handle students' behavior problems.	40	60	3.9
I liked the procedures used in this intervention.	40	60	3.8
This intervention was a good way to handle students' behavior problems.	40	60	3.7
Overall, this intervention would be beneficial for students' behavior problems.	40	60	3.7

Note. Sample $n = 10$

Ratings were provided based on the following scale: 1=Strongly Disagree, 2=Disagree, 3=Slightly Disagree, 4=Slightly Agree, 5=Agree, and 6=Strongly Agree

Disagree was considered ratings of 1-3 and Agree was considered ratings of 4-6.

CHAPTER V

DISCUSSION

The data indicated that incidences of running decreased during the PMR intervention phase in this study. Results of this study are consistent with previous research that indicated peer-administered praise treatments could effectively improve student behavior (Brantley & Webster, 1993; Ferguson & Houghton, 1992; Hickey, 1979; Martens et al., 1997; O'Reilly, 1994; Witt & Elliot, 1982). The slight upward trend in the target behavior at the end of baseline followed by an abrupt decline in running when peers implemented the intervention in both settings provides strong support for the beneficial influence of the PMR intervention. In fact, mean incidences of running decreased to less than half of baseline levels during the treatment phase in both settings. Although a slight upward trend at the end of the treatment phase was noted, little overlap of data points was evident between baseline and treatment phases.

The slight upward trend noted at the end of the treatment phase suggests a reduction in control of the target behavior. Possible reasons for reduced control include a loss in the power exerted by the reinforcers or an apparent lack of unified support by schoolteachers and administrators. Reduced control of the target behavior at the end of the treatment phase was addressed by increasing the amount of positive reinforcement and tangible reinforcers for students and addressing teacher concerns on Day 45 of the study. Specifically, more praise notes were administered by peer monitors, the amount of prizes awarded at weekly lottery drawings was doubled, students who were unable to receive praise notes due to location and schedule conflicts were given prizes, and peer

monitors were also awarded tangible reinforcers for their efforts. Despite these efforts, stability was not attained at the end of the treatment phase so that a sufficient maintenance phase could be completed prior to the end of the school year. However, a downward trend was observed in the exit hall in the direction of the desired change at the end of the treatment phase. While there was an initial decrease with a slight increase in frequency of running in the lunch hall during the treatment phase, there was an abrupt increase in running immediately after the PMR intervention was withdrawn.

Results of this study extend the findings of several previous investigations of peer-administered praise interventions in several ways. First, while peer tutors, peer mediators, and peer monitors have been utilized to improve academic performance behavior, they have rarely been trained to influence social behavior problems. Additionally, this study represents one of the few attempts to empirically evaluate the effects of peer-administered positive behavioral support strategies to target a school-wide behavior problem in contrast to an individual behavior or concerns involving a few students. Our results suggest that peers can help to achieve the goal for peers to positively influence student social behavior.

This study represents a methodological advantage in that the use of videotape to record peer monitor sessions significantly increased the precision of analysis related to the treatment effect. For example, the ability for two observers to code sessions independently and review each session when incidences of the target behavior were difficult to discriminate allows more confidence to be placed in the data. The high interrater reliability obtained for the majority of peer monitor sessions was most likely

related to videotape coding procedures. Although low interrater reliability was obtained for five peer monitor sessions, these sessions were not of particular significance because they were not temporally close to phase changes and did not correspond with sessions with especially high or low levels of the target behavior. Of particular value to practitioners and teachers is that a hidden camera allowed peer monitor performance to be observed without the presence of an adult. Receiving observations of students in this manner increases our confidence in concluding that peer-administered praise interventions can be effective with minimal teacher effort. Despite the fact that 13 peer monitor sessions were not recorded due to technical difficulties and user error, the methods employed in this study greatly increased the ability to determine the effectiveness and performance of peer monitors in general.

Furthermore, this study demonstrated a method to directly measure the procedural integrity with which the peers implemented the intervention while most peer tutor or peer monitor programs designed to improve student social behavior have failed to provide evidence of treatment integrity among peer tutors or peer monitors (Greenwood et al., 1988). The observation of peer monitors appropriately delivering praise during monitor sessions and praise note tabulations provide support for the ability to correctly deliver a positive behavioral support intervention. Despite the fact that results of peer monitor integrity checks indicate that the peer monitor did not report to his or her scheduled session once and was late for another session, peer monitor treatment integrity checks indicated that peer monitors successfully completed 100% of the specified procedures on nine occasions and successfully completed 83% of the

specified procedures on one occasion. As indicated by Figure 1, no peer monitor was present in the videotapes sessions on numerous occasions. However, peer monitors frequently stated that they reported to the hallway setting. Therefore, it is possible that peer monitors reported to the setting before or after the designated recording time. In general, treatment integrity checks suggest that peers are capable of learning and adhering to specified positive behavioral support intervention procedures in general.

Additionally, investigation of maintenance of treatment effects following the implementation of a peer-administered intervention is uncommon. However, in this study, maintenance effects without the presence of the peer monitors was observed for 4 weeks following the termination of the intervention. The extended maintenance phase demonstrated that running behavior initially increased when the peer intervention was withdrawn, however, running behavior steadily decreased in both settings to a level that was similarly obtained during the peer treatment phase. However, stability was not achieved before the final day of the school year. Fading was not incorporated into the maintenance phase due to the principal's request that peer monitors not be excused from class during end-of-year testing. Thus, the independent variable was withdrawn abruptly rather than gradually. It is also interesting to note that the incidences of running decreased on the final days of the school year when we would expect students to display more incidences of running due to excitement and anticipation of the summer break, special end-of-the-year activities, and increased irregularity in daily schedules.

Maintenance of responding over time can also be considered generalization (West & Young, 1992), which is defined as "the occurrence of relevant behavior under

different, nontraining conditions without the scheduling of the same events in those conditions as had been scheduled during training conditions" (Stokes & Baer, 1977, p. 350). The demonstration of short-term maintenance effects provides support that peer monitor effort resulted in improvements in hallway behavior over time.

There are several explanations for the maintenance of treatment effects without the presence of programmed reinforcers. For example, running may have come under control of other reinforcers in the setting, such as increased teacher-administered praise or the influence of other students who were modeling the positive behavior (Baer, Wolf, & Risley, 1968). It is also possible that walking down the hallway in an appropriate manner may have become self-rewarding. Future investigations will need to assess which specific factors contributed to the maintenance of treatment effects in a peer-administered praise program.

There are several limitations of this study that might be addressed in future studies. First, a limitation of not only this study but the literature base on the effects of praise on student social behavior is the lack of understanding of which component of the intervention package was most important (i.e., that praise was administered immediately, specifically, contingent upon behavior, the written praise notes, or the lottery system) has the most pronounced effect on student behavior. The fact that praise is effective in improving student social behavior has been well-documented (Merrett, 1981; Merrett & Tang, 1994; Siero & van Oudenhoven, 1995); however, it is important to determine which components of the intervention package were the most important when administered by peers in order to design and implement effective and efficient

interventions in the future. An analysis of the effect of individual intervention components was not under direct investigation during this study but will be an important consideration for future research.

Another limitation of this study concerns a lack of control over treatment integrity checks of peer monitors, which included praise note tabulations, viewing of videotaped peer monitor sessions, and peer monitor treatment integrity checks. First, praise note tabulations did not correspond with the number of praise notes administered by the peer monitor. However, administered praise notes may not have been returned to teachers' cups to be collected and counted. Verbal reports from peer monitors who missed sessions indicated that they forgot, could not report to scheduled sessions due to academic demands or personal conflicts, or felt overworked. Also, praise notes were not collected from each classroom at the end of each week because data observers forgot to go to each classroom or were running late when conducting lottery drawings prior to school dismissal on Friday afternoons. In addition, data observers may have misallocated the day of praise note administration because praise note colors, which indicated the day of praise note administration, varied from week to week throughout the treatment phase due to budget restraints (i.e., malfunctioning color printer, deficient coloring markers). Therefore, weekly praise note tabulations could not be considered a clear indicator of peer treatment integrity.

In addition, if the peer monitor was not present in the setting for the entire duration of the 10-minute recording viewed by data observers, it seemed evident that the peer monitor did not follow the treatment protocol as specified. While it is

important to recognize that the peer monitors did not report to the session at the scheduled time, it is also important to note that the VCR was programmed to record each setting for exactly 10 minutes when the peer monitor was instructed to administer praise notes each day. Therefore, it is possible that the peer monitor appropriately administered praise notes for the precise duration, yet the times that he or she reported to the setting did not correspond with the programmed recording time of the VCR. On several occasions, it was evident that the peer monitor reported to at least a portion of his or her scheduled session because the peer monitor was observed to be within the view of the video camera for part of the session. It is noteworthy to acknowledge that the entire 10-minute peer monitor session was recorded and coded whether the peer monitor reported to the session or not. Praise note tabulations also helped to verify if the peer monitor reported to his or her scheduled session.

Therefore, although various procedures incorporated into this study served as indicators of treatment integrity, firm conclusions regarding treatment integrity could not be made as a result of these measures. To fully understand the functional relationship between peer monitor treatment integrity and behavior change, future investigations could incorporate longer videotaped recordings to provide additional data regarding peer monitor attendance and the duration of treatment implementation. It would also be of particular interest to determine how far a peer monitor can deviate from the treatment protocol in order to achieve desired results. From an applied perspective, it will be important to incorporate clearer demonstrations of peer monitor treatment integrity into future investigations of peer-administered praise interventions.

Despite the inability to make firm conclusions regarding peer monitor treatment integrity, treatment integrity decreased at the end of the treatment phase. Indications of this supposition include increased variability of times or absences of peer monitors in videotaped sessions and no praise notes counted in praise note tabulations. Decreased treatment integrity appeared to occur after approximately Day 39 of the study. There are several possible reasons for decreased treatment integrity among peer monitors. Due to the fact that only eight students successfully completed peer monitor training sessions, each peer monitor was scheduled to monitor one or two sessions each week. Future peer-administered praise interventions may benefit from increasing the number of students trained to fulfill the peer monitor role in order to reduce the responsibilities held by each peer monitor. In addition, peer monitor sessions were only scheduled during lunch, recess, or immediately prior to school dismissal. Because these times are often social opportunities as well as transition times for all students, it seems likely that they were less desirable or less convenient times for students to serve as peer monitors. Also, although literature suggests that students who serve as leaders are viewed favorably by other students and experience positive feelings and satisfaction as a result of their role (Duanic, Smith, Robinson, Miller, & Landry, 2000; Price & Jones, 2001), it is also plausible that peer monitors were viewed negatively if students were dissatisfied with the intervention. As apparent leaders of this intervention, peer monitors verbally reported that they felt responsible and uncomfortable if students were dissatisfied, which may have decreased their motivation to implement the treatment according to the

specified protocol. A logical extension of this study would be to investigate the effects of the peer monitor role on students who occupied this role, particularly on self-esteem.

Peer monitors may not have felt adequately reinforced for their leadership responsibilities and efforts. Specifically, positive reinforcement for peer monitor efforts was only in the form of verbal praise from the student researcher until 4 days before the end of the treatment phase. At the same time, peer monitors witnessed numerous recipients of praise notes receive tangible reinforcers during weekly lottery drawings. Although reparations were made to increase the amount of positive reinforcement administered to peer monitors during the final stages of the intervention, it is difficult to determine the impact of these efforts. In addition to the deliverance of tangible reinforcers, it may have been helpful to share results indicating improvements with the peer monitors.

Several comments are warranted concerning student and teacher verbal reports on the intervention process. Praise notes appeared to be powerful reinforcers for students initially, possibly due to the fact that they were linked to tangible prizes following lottery drawings or public recognition. However, peer monitors reported that praise notes lost their strength of reinforcement among students toward the end of the treatment phase due to the fact that too few students received tangible prizes for their efforts. Several teachers expressed concerns that the program was unfair to students who did not walk through either of the two settings during peer monitor sessions may have contributed to decreased interest and motivation among peer monitors as well as other students. It has been suggested in the literature that teacher support is necessary

for positive behavioral support interventions to be effective and efficient (Colvin & Sprick, 1999). Although not directly analyzed in this study, the inconsistent treatment integrity noted in this study indicates the need for future research that focuses more clearly on specific factors that may serve to maintain high treatment integrity as well as student motivation to improve the effectiveness of peer-administered positive behavioral support interventions.

Additionally, data observers were utilized for various tasks such as viewing peer monitor sessions and coding the target behavior as well as praise note tabulations and peer monitor treatment integrity checks. These diversified roles may have increased the observers' knowledge of the desired treatment effect despite efforts to conceal the desired treatment effect. Although we are unaware of the influence of diversified roles on data observers, it would be beneficial to maintain specialized roles for each data observer in order to reduce observer drift.

From a practical standpoint, this intervention required little teacher time, did not remove peer monitors from ongoing activities for training or monitor sessions, and involved few changes in the existing classroom routine in order to achieve the desired behavior change. In other words, the intervention identified existing resources and utilized an efficient strategy to instigate school-wide social behavior improvement. The PMR intervention may also have served a secondary function in that it helped teachers with a task that had previously been their sole responsibility. Although these aspects of the intervention were not directly assessed, it seems plausible that this intervention strategy would be viewed favorably by consumers (Witt & Elliot, 1982).

Future research investigating the effectiveness of peer-administered praise intervention could take a number of directions. First, replications of the present results on additional social behaviors would provide additional support for training students as social change agents. Second, more attention could be focused on which specific components of the intervention were particularly effective. Was it the receipt of praise and influence of peers, public acknowledgment, or tangible reinforcers that led to improved behavior among students? An experimental analysis should be conducted in order to determine the components within the intervention necessary for behavior change.

In addition, future investigations should examine the long-term effects of the present intervention. This study conducted a 1-month maintenance phase with observations of the original two hallway settings without the presence of peer monitors. It would be valuable to assess whether improvements in behavior generalize to other settings or over the course of the entire school year. If maintenance effects are not observed, it would be valuable to conduct booster sessions with peer monitors or reassign peer monitor roles to other students.

In conclusion, the present study suggests that peer-administered positive behavioral support interventions are a practical and valuable strategy to improve school-wide social behavior. Additionally, relatively minimal effort and time demands were required from teachers to achieve desired results. Finally, the present study replicates the findings of previous investigations indicating that peer-administered praise

interventions can be effective (Enright & Axelrod, 1995; Kalfus, 1984) while strengthening the internal validity of the procedures.

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APPENDICES

Appendix A

Peer Monitor Student Assent Form

Effects of Peer-Administered Praise on Student Behavior Study

I understand why our school is participating in this research project with Utah State University. I understand all of the duties and responsibilities of the role of the peer monitor. I am interested in making a positive change in our school and would like to be a peer monitor. I agree to make an effort to do my best in this role.

Signed:_____

Appendix B

Parent Consent Form

Dear Parents of Millville Elementary School student council members:

Millville Elementary School is collaborating with researchers from the Center for the School of the Future at Utah State University in an attempt to alleviate a school-wide problem behavior, namely running in the hallway. An intervention has been planned in which peers will praise other students for walking in the hallway. Since research suggests that praise is an effective method to affect behavior change among students, praise will be administered by peers to reward positive hallway behavior. Peer monitors will administer written praise notes that say, "Thank you for keeping our school safe by walking in the hall," as well as verbal praise to students who are appropriately walking in the hall.

We believe that student council members are the most appropriate students to act as peer monitors since they are currently in a leadership role. Due to their evident leadership skills and ability to be responsible, these students may be better prepared and feel more comfortable in the peer monitor position. Peer monitors will be assigned to monitor the hallway for 10 minutes approximately once every two weeks. Peer monitors will administer praise in one of two hallway settings, when students move from one area to another after the bell rings. It will be necessary for peer monitors to be in the hallway for ten minutes before a class ends or after a class begins (depending on their scheduled monitor session). A sincere attempt will be made to schedule peer monitors so that they will not miss an academic class. In other words, efforts will be made to schedule peer monitors during recess, physical education, music, art, or a character education class. If this is not possible, a student may be excused for ten or fifteen minutes of an academic subject such as math, reading, or writing.

Although we cannot guarantee the consequences for the peer monitors, past research on peer-tutoring procedures suggests that peer tutors typically benefit from their role. Research findings that peer monitors are seen as leaders, their relationships with other students improve, and their self-esteem improves. There is a risk that peer monitors will be singled out from their peers, others will be jealous of their role, or they

will be seen as outcasts. However, research indicates that peer monitors significantly benefit from this role and receive a positive status since they are providing positive reinforcement and rewards to other students and are not condemning them in any way.

By signing this form, you are giving consent for your child to participate in this study. You are indicating that you have been informed of the purpose of the study, the responsibilities of the peer monitor, and possible benefits and negative effects of the peer monitor role. If you have any questions or concerns, please contact Meredith Brent, Student Researcher or Richard West, Principal Investigator at Utah State University at 797-2338. Thank you for your cooperation.

Sincerely,

Meredith Brent, BA
Student Researcher

I, _____, hereby agree to my child's participation in Meredith Brent's peer-administered praise study. This study will consist of data collection conducted by observers in the school hallway settings during the term of the project, Spring of 2002 to Summer of 2002. I understand that participation is entirely voluntary and that I may terminate my child's involvement at any time and for any reason without penalty to this study or the school in which my child is enrolled. I understand that my name, my child's name, and other data will remain confidential.

_____ _____

Parent Signature Date

Appendix C

Praise Note

Front

"Thank you for making our school a safe place by walking quietly in the hall"

Back

Your Name

Appendix D

Frequency Recording Sheet

Frequency Recording Sheet

SETTING: _____ NAME:_____

TIME:_____ DATE: _____

1 0:00	2 0:15	3 0:30	4 0:45	5 1:00	6 1:15
Total	Total	Total	Total	Total	Total
7 1:30	8 1:45	9 2:00	10 2:15	11 2:30	12 2:45
Total	Total	Total	Total	Total	Total
13 3:00	14 3:15	15 3:30	16 3:45	17 4:00	18 4:15
Total	Total	Total	Total	Total	Total
19 4:30	20 4:45	21 5:00	22 5:15	23 5:30	24 5:45
Total	Total	Total	Total	Total	Total
25 6:00	26 6:15	27 6:30	28 6:45	29 7:00	30 7:15
Total	Total	Total	Total	Total	Total
31 7:30	32 7:45	33 8:00	34 8:15	35 8:30	36 8:45
Total	Total	Total	Total	Total	Total
37 9:00	38 9:15	39 9:30	40 9:45		
Total	Total	Total	Total		

TOTAL for SESSION_____

Appendix E

Peer Intervention Training Checklist

Peer Intervention Training Checklist

SESSION #1

_____1. Discuss rationale for peer monitors to help reduce school problem behaviors
-ask which behaviors that *they* think are unsafe, disruptive, or otherwise troublesome
-describe rationale for why running is problematic (people could get hurt, difficult to learn when noisy, etc.)
-what we are going to do to make the school a better place (praise students for doing the right thing, help students who are behaving appropriately get praise and recognition)
-give operational definition of running

_____2. Discuss the importance of the peer monitor role
-school benefits
-individual student benefits
-peer monitor benefits

SESSION #2

_____1.Teach positive reinforcement concept
-why it is used
-the effectiveness
-self-reflection exercise: when would they respond? After positive praise or negative criticism?

_____2. Teach Praise Statement steps
-why it is used
-the components:

_____3. Immediate ("right away")

_____4. Contingent ("given only when they walk appropriately")

_____5. Specific ("say what they did right")
*Each monitor must provide an accurate example of a praise statement that includes each component before proceeding with training.

_____ 6. Modeled by student researcher

_____7. Role-plays:
-Students divide into groups of two.
-One student is the "walker" (a student walking down the hall), the other is the peer monitor.
-The peer monitor must give an example of a praise statement that is immediate, contingent, and specific

_____8. Praise correct role play steps and correct missed steps

_____ 9. Train until 100% integrity among peer monitors.

SESSION #3

_____ 1. Perform role-plays in the specific settings that peer monitoring and data collection will take place (in the southern hallway near bus exit and south hallway directly outside cafeteria).

Appendix F

Peer Monitor Rating Sheet

Peer Monitor Rating Sheet

_____ Looked at students within their hallway monitor area.

_____ The peer monitor walked to a student and handed him/her a praise note **only after** he or she was observed to be walking appropriately.

_____ The peer monitor administered the praise statement **immediately** following the behavior.

_____ The peer monitor **specifically** described the appropriate behavior.

_____ Peer monitor counted for approximately five seconds after administering the previous praise note.

_____ The peer monitor was observed to complete all of these steps correctly at least two times.

_____ Total Points

Appendix G

Peer Script

DIRECTIONS for **PEER MONITORS**

1. **COUNT** for five seconds.
2. **LOOK** at students in the hallway in your monitor area.
3. If a student is appropriately walking, **WALK** to the student and **HAND** him/her a praise note.
4. At the **SAME TIME** as when you give the praise note, **say an instructive praise statement** (immediate, contingent, specific).
5. Repeat steps 1-4.

Appendix H

Social Validity Rating Scale

Social Validity Rating Scale

The purpose of this questionnaire is to obtain information about your reaction to the peer-administered praise intervention. Please circle the number which best describes your agreement or disagreement with each of the following statements.

1. This is an acceptable intervention for the students' problem behavior.
Strongly disagree 1 2 3 4 5 6 Strongly agree

2. Most teachers would find the intervention appropriate for behavior problems in addition to the one targeted in this intervention.
Strongly disagree 1 2 3 4 5 6 Strongly agree

3. I would suggest the use of this intervention to other teachers.
Strongly disagree 1 2 3 4 5 6 Strongly agree

4. I would be willing to use this intervention in the classroom setting.
Strongly disagree 1 2 3 4 5 6 Strongly agree

5. This intervention would not result in negative side-effects for the child.
Strongly disagree 1 2 3 4 5 6 Strongly agree

6. This intervention would be appropriate for a variety of children.
Strongly disagree 1 2 3 4 5 6 Strongly agree

7. The intervention was a fair way to handle students' behavior problems.
Strongly disagree 1 2 3 4 5 6 Strongly agree

8. I liked the procedures used in this intervention.
Strongly disagree 1 2 3 4 5 6 Strongly agree

9. This intervention was a good way to handle students' behavior problems.
Strongly disagree 1 2 3 4 5 6 Strongly agree

10. Overall, this intervention would be beneficial for the child.
Strongly disagree 1 2 3 4 5 6 Strongly agree

TOTAL SCORE_____

Appendix I

Parent Letter

Dear Parents,

Our school will be participating in a research study conducted by the Center for the School of the Future at Utah State University. The purpose of this study is to determine whether peers can help each other to learn school rules and appropriate behavior. Data observers from the university will document the frequency of specific student behaviors in common areas, such as the hallway, to determine the effectiveness of the school intervention. We have agreed to participate in the study to help make the school an even safer and more peaceful place to learn.

Thank you,

Kathy Toolson
Millville Elementary School Principal

Meredith Brent
Student Researcher, U.S.U.

Appendix J

Memo to Teachers and Faculty of Millville School

Friday May 26, 2002

To the teachers and faculty of Millville Elementary School:

I would like to thank you for your support during the peer monitor praise program. I would also like to take this opportunity to address some of your concerns with the program. It has come to my attention that some faculty are concerned that more students need to be reinforced for their efforts of walking in the hallway. Therefore, we will double the number of prizes administered during the lottery each week so that more students have an opportunity to be reinforced for their efforts. This Friday, I will bring prizes to the students who are not in the hallway during the times that peer monitors are administering praise notes. Third, I would like to discuss additional suggestions that you may have for the future peer-administered praise programs at a later date. Please keep in mind that this is a pilot project that was designed to obtain a sample of data and that the intervention can be modified for future interventions at the school.

Thank you very much,

Meredith Brent