

Demonstration of the Effects of an Increased Praise Ratio on Student On-Task Behavior

by

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## Abstract

Many authors recommend various praise to reprimand ratios for teachers to use to manage their classrooms (e.g., Flora, 2000; Nafpaktitis, Mayer, & Butterworth, 1985; Wheldall, 2005); however, these recommendations are based on correlational data or secondary findings from studies not directly manipulating the praise to reprimand ratio. The purpose of this study was to use a simple teacher training method to improve the praise to reprimand ratio used in the classroom and measure the resulting effects on the on-task behavior of an entire class of students. All teachers improved praise to reprimand ratios above baseline levels. As teacher praise to reprimand ratios improved, student on-task levels increased for all classrooms.

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## **Introduction**

Student engagement in school is an important issue for teachers to address. When students are engaged in academic instruction, they are more likely to learn. Classroom management strategies have been developed to help teachers maintain student engagement and decrease disruptions to learning. Among the commonly recommended classroom management strategies, increased teacher praise and praise to reprimand ratios are recommended to improve student behavior. Although teacher praise is often recommended, descriptive studies of praise find that teachers are not using praise at recommended levels. Additionally, although specific praise to reprimand ratios are suggested, recommendations are not based on experimental studies. In order for teacher praise to be effective at improving student behavior, teachers must be effectively and efficiently trained. This study used a simple teacher training method to improve teacher praise to reprimand ratios and measured the effects on student on-task.

Academic success depends upon student engagement in the classroom. In order for students to succeed academically, schools must develop methods to promote constructive social behavior (Sugai & Horner, 2008). Traditional school conduct codes outline reactive consequences for teachers and administrators to deliver to those students who violate the rules (Sugai & Horner, 2002). Historically, teachers use reactive, aversive consequence-based strategies to address problem behavior because these strategies produce a quick decrease in problem behavior (DePry & Sugai, 2002). However, reactive responses in schools are not conducive to the positive school environments that reduce antisocial behavior (Sugai & Horner, 2002, p. 26). Reactive strategies require the teacher to deal with problem behavior as it occurs, even in the middle of instruction, because preventative measures are not in place. DePry and Sugai report that when teachers spend large amounts of time dealing with minor behavioral

incidents, it disrupts instructional activities. “In response, some educators are using proactive, instructional strategies to manage these minor behavioral incidents instead of more reactive, punishment-based interventions (e.g., timeout, verbal reprimands)” (DePry & Sugai, p. 262). As part of these proactive strategies, teachers are advised to work to improve student conduct through “frequent positive contacts with students individually and as groups” (Sugai & Horner, 2002, p. 34). The use of praise is one method for increasing positive interactions between teachers and students. Kern and Clemens (2007) identify praise as a proactive, antecedent strategy for use in the classroom.

### **Praise as a Classroom Management Strategy**

Broadly defined, praise is contingent attention or recognition that displays satisfaction with a behavior (Harrop & Swinson, 2000; Lewis, Hudson, Richter, & Johnson, 2004).

Contingent praise is commonly effective at changing student behavior because social attention functions as a reinforcer for many individuals (Iwata, Dorsey, Slifer, Bauman, & Richman, 1982/1994). Students seeking to gain teacher attention will perform behaviors that have historically drawn the teacher’s attention. If a teacher delivers attention in the form of reprimands for disruptions, students seeking attention may engage in disruptive behavior.

However, if a teacher delivers attention in the form of praise for appropriate behavior, students seeking attention will likely engage in the appropriate behaviors. In the classroom, contingent praise has been shown to increase student engagement and attending (e.g., Acker & O’Leary, 1987; Sutherland, Wehby, & Copeland, 2000); study behavior (e.g., Hall, Panyan, Rabon, & Broden, 1968); and academic responding (e.g., Sutherland & Wehby, 2001). Appendix A provides a catalog of experimental studies that manipulated teacher praise and measured student behaviors.



Several early studies in the applied behavior analysis literature produced favorable results for improving student behavior by altering teacher praise. Hall, Lund and Jackson (1968) increased six students' study behavior by increasing positive teacher attention toward appropriate study behavior. Cossairt et al. (1973) found that as rates of teacher praise increased for three teachers, so did the attending behavior of twelve elementary school students. Broden, Bruce, Mitchell, Carter, and Hall (1970) increased the attending behavior of two elementary students by providing teacher praise. Praise was provided for the attending behavior of one student in the pair but not for the attending behavior of the other student in the pair. Results of this study showed that not only did the attending behavior of the student receiving the praise increase, but the attending behavior of the other student also increased without direct teacher praise. This has implications for managing a classroom of students without having to praise each student individually.

Since these early studies, research has also demonstrated a decrease in the frequency of disruptive behavior as teacher praise for appropriate behaviors increased (e.g., Armstrong, McNeil, & Van Houten, 1988; Stormont, Smith, & Lewis, 2007). Armstrong et al. measured the success of a principal's inservice training package to increase rates of praise for ten teachers and subsequently improve the behavior of students nominated by teachers as the most disruptive. Average praise rates of all ten teachers increased, and average disruptive behavior of nominated students decreased after the inservice training package. Stormont et al. decreased student problem behaviors by training three teachers to use precorrective statements and increase their specific praise statements. During intervention, student problem behavior in all three classrooms decreased and all of the teachers increased their use of specific praise statements.

Student on-task behavior has also been examined as a function of increased teacher praise

(e.g., Ferguson & Houghton, 1992; Sutherland et al., 2000; Swinson & Harrop, 2005).

Sutherland et al. demonstrated that as the behavior-specific praise of one teacher increased, the on-task behavior of nine fifth-grade students with an emotional behavior disorder (EBD) increased during social skills instruction. Swinson and Harrop collected rates of praise and reprimands for 19 teachers before and after inservice training on improving the classroom behavior of students. Following training, the authors found that student engagement increased as the teachers' rate of approval increased and rate of disapproval decreased; however, only pre-post data were collected instead of repeated measures of teacher and student behavior. Ferguson and Houghton observed the on-task behavior of eight elementary students from each of three classrooms as the teachers increased positive responses. They found that as the rates of positive teacher statements increased, so did student engagement for 22 of 24 children.

### **Praise to Reprimand Ratio Recommendations**

Praise is a commonly recommended classroom management strategy for teachers (e.g., Emmer, 1987; Shores, Gunter, & Jack, 1993; Sugai & Horner, 2002; Sutherland, 2000; Wehby, Symons, Canale, & Go, 1988). An abundance of articles, studies, and chapters have recommended praise to reprimand ratios that should be used to support positive change in social behavior as part of sound classroom management (e.g., Flora, 2000; Loveless, 1996; Nafpaktitis, Mayer, & Butterworth, 1985; Sprick, 1981; 1985; Walker, Colvin, & Ramsey, 1995; Walker, Ramsey, & Gresham, 2004; Wheldall, 2005). A PsycInfo search for "praise ratio" and "praise to reprimand ratio" returned zero results. PsycInfo searches for "teacher praise" and "teacher approval" resulted in 334 peer-reviewed articles from 1950 to 2009 involving the use of praise or approval in the classroom. These studies were examined for relevance to the use of teacher praise or approval and its effect on student behavior. Studies consisting solely of surveys or verbal

reports were excluded from this analysis. Some frequently cited studies documented changes brought about by increased praise (e.g., Hall, Lund, & Jackson, 1968; Madsen, Becker, & Thomas, 1968; Pfiffner, Rosen, & O’Leary, 1985; Rosen, O’Leary, Joyce, Conway, & Pfiffner, 1984); while other studies demonstrated correlations between ratios and behavior (e.g., Merrett & Wheldall, 1987; Nafpaktitis et al.; Persons, Brassell, & Rollins, 1976; Thomas, Presland, Grant, & Glynn, 1978). Experimental manipulations of praise to reprimand ratios were not found in these articles. Recommended ratios for optimal promotion of appropriate student behaviors have ranged from 3:1 (Sprick) to 10:1 (Nafpaktitis et al.). Although praise ratio recommendations are widespread in classroom management literature, few peer-reviewed articles specifically address ratios and none identify it as a key term.

Review by this author indicates that the majority of evidence for praise to reprimand ratios was derived from descriptive and correlational studies rather than experimental investigations where praise to reprimand ratios were directly manipulated. Evidence based on experimental manipulation “requires individuals to systematically test their assumptions” (Kennedy, 2005, p. 4). Studies in which an independent variable is systematically manipulated are considered to be experiments (Shadish, Cook, & Campbell, 2002). In a randomized experiment, participants are randomly assigned to groups. In quasi-experimental designs, independent variables are also directly manipulated but participants are not randomly assigned to groups. Descriptive or observational studies involve observing without manipulating the variables of interest (Shadish et al.). Descriptive studies may be used to explore possible causes when the source of a phenomenon is unknown but do not involve manipulation of variables. Correlational studies are used to measure the relationship between two variables that may not be directly manipulated (Shadish et al.). If variables are measured at the same point in time for a

correlational study, one does not know which variable caused the other. Nonexperimental designs are problematic for determining cause unless plausible alternative causes are investigated and validly measured. This review focuses on those studies most commonly cited in a citation search of the PsycInfo database and/or specifically cited by ratio recommendation sources because praise to reprimand ratio recommendations refer to the praise literature as a whole instead of one or two seminal works.

**Descriptive studies of praise to reprimand ratios.** Numerous studies have looked at the occurrence of teacher praise statements and reprimands in the classroom (e.g., Heller & White, 1975; Nafpaktitis et al., 1985; Thomas et al., 1978). Within these studies, some researchers examined broader concepts of approval and disapproval, and positive and negative consequences, while some examined only specific types of teacher verbal behavior. Beaman and Wheldall (2000) reviewed 14 studies on the natural rates of approval and disapproval in the classroom and reported that the majority of the studies before 1984 found higher disapproval rates than approval; however, since 1984, most studies have reported higher approval than disapproval rates. Expanded definitions of approval and disapproval used in these more recent studies may account for teachers' apparent shift of comments from more disapproval to more approval. Differences in definitions and the inclusion of other positive and negative consequences besides praise and reprimands make comparing research difficult, but some patterns have emerged.

Although teachers are overall providing more approval than disapproval in the classroom, descriptive research suggests elementary school teachers are not providing more praise than reprimands for student social behavior in their classrooms (e.g., Beaman & Wheldall, 2000; Merrett & Wheldall, 1987; Thomas et al., 1978). Swinson and Harrop (2005) differentiated

between academic and social approval and disapproval, and whether teacher comments were directed at an individual or a group. After inservice training, teachers shifted approval and disapproval to students from comments on academic behaviors to comments on social behaviors. White (1975) described natural rates of teacher approval and disapproval in classrooms across grades 1 through 12 and found that across all grades, disapproval for social behaviors was significantly higher than approval (8% positive). Merrett and Wheldall observed 128 teachers of elementary students and reported academic behaviors receiving more positive comments (75% positive) and social behaviors receiving more negative comments (16% positive). Taken together, these studies provide evidence that praise occurs less frequently than reprimands for social behavior in the classroom. Although it is difficult to draw comparisons across studies that use different definitions of praise and reprimands, the majority of the findings support that there are more praise statements (and fewer reprimands) for academic behavior and less praise statements (and more reprimands) for social behavior (Harrop & Swinson, 2000). Some researchers have reported descriptive data and then stated that the ideal environment should be different from or the opposite of what is reported (e.g., Wheldall, 2005).

**Correlational studies of praise to reprimand ratios.** Some correlational studies have investigated the relationships between praise, reprimands, engagement, and disruptive behavior. Thomas et al. (1978) found the rate of teacher approval and disapproval to be correlated with student engagement (.40 and -.48, respectively). Persons et al. (1976) observed teacher and student interactions at the beginning and end of the school year and found a positive correlation (.66 and .58) between positive teacher events and student attention, a negative correlation (-.39 and -.45) between positive teacher events and student disruption, and a positive correlation (.48 and .60) between negative teacher events and student disruption. In a similar study on natural

rates of praise and reprimands in the classroom, Merrett and Wheldall (1987) found a negative correlation (-.31) between student on task behavior and teacher reprimands for social behavior. Nafpaktitis et al. (1985) studied the relationship of teacher approval and disapproval with student disruption and disengagement. They found that teachers who used a ratio of 10:1 approvals to disapprovals led classrooms with student engagement above eighty percent. The authors concluded that in order to obtain high levels of student on-task behavior, teachers should use a ratio of 10:1 approvals to disapprovals. This conclusion was based upon their observations of positive correlations between teacher approval and student engagement. However, as is the case with correlational data, a causal relationship between praise and engagement was not established. In these studies, the teachers may have been responding to student engagement or the students may be responding to the teacher praise to reprimand ratio.

**Experimental manipulations of praise to reprimand ratios.** Researchers have long attempted to improve student behavior by changing the rate of teacher praise in the classroom. Madsen et al. (1968) used a combination of rules, ignoring inappropriate behavior, and teacher praise to decrease problem behavior. The authors reported the average rates of approval and disapproval under each condition, but did not manipulate praise to reprimand ratios directly. Hall, Lund et al. (1968) increased students' study behavior and decreased disruptive behavior by increasing positive teacher attention towards appropriate study behavior. The authors recorded intervals in which teacher attention occurred and sought to increase teacher attending that occurred while the students were engaging in study behavior. This study did not record the type of teacher verbalization, only whether or not teacher attention occurred while the student was engaged in study behavior and therefore presented no evidence for a particular praise to reprimand ratio. Rosen et al. (1984) withdrew positive and negative consequences from a highly

engaged classroom instead of adding positive and negative consequences to a classroom with low levels of engagement. This study cannot be used to support increasing teacher praise to improve engagement because the authors used students that were already highly engaged in class. The authors did not successfully improve engagement for the classroom. Pfiffner et al. (1985) measured the engagement of eight elementary students in a special education facility for children with behavior problems during three conditions: (a) positive and negative consequences (praise and reprimands or loss of privileges), (b) positive consequences (praise alone), and (c) enhanced positive consequences (praise and tangibles). Similar to Rosen et al., the teacher praise to reprimand ratio was not specifically manipulated and the authors removed either positive or negative consequences from a classroom where students already engaged in high levels of engagement. Cossairt, Hall, and Hopkins (1973) found that as rates of teacher praise toward student attending increased, so did the attending behavior of elementary school students in three classrooms. The purpose of this study was to develop a strategy for improving teacher praise. The resulting increase in student attending was a collateral effect of the experimental manipulation of teacher praise. All of the experimental studies described supported the use of contingent praise, but no studies investigated the use of improved praise to reprimand ratios to improve student behavior.

Critical analysis of the praise literature reveals that studies regarding praise to reprimand ratios consist of descriptive and correlational research. Although experimental studies did examine the benefits of praise as a classroom management tool, no study directly manipulated the praise to reprimand ratio used by a teacher. Descriptive studies show few elementary school teachers are using recommended ratios for social behavior in their classrooms, suggesting that they are unaware of these findings, their professional preparation is not addressing praise to

reprimand ratios, or contingencies within schools do not support the use of these ratios. Correlational studies merely demonstrate that teacher praise and student engagement and disruptions are related, but they do not identify a causal relationship. Appropriately behaved students may result in higher levels of teacher praise instead of increased teacher praise resulting in more appropriate student behavior. Despite the lack of experimental evidence for praise to reprimand ratios, important findings regarding changes in student and teacher behaviors have been reported in experimental studies of praise.

### **Training Teachers**

In order for teacher praise to work effectively as a classroom management strategy, teachers must be properly trained in the use of praise.

The problem is not that praise or contingent teacher attention lacks empirical support, or that they are not effective tools for managing behavior, but rather that the conditions under which teachers are both adequately trained and supported in the development and use of these skills are lacking (Landrum & Kauffman, 2006, p. 49).

Various techniques have been used to improve the verbal behavior of teachers in the classroom, including visual performance feedback (e.g., Reinke, Lewis-Palmer, & Martin, 2007); individual daily feedback (e.g., Stormont et al., 2007; Sutherland et al., 2000); audio-cuing (e.g., Andrews & Kozma, 1990; Van Houten & Sullivan, 1975); daily goals with self-monitoring (e.g., Kalis, Vannest, & Parker, 2007); self-evaluation using audiotaped samples (e.g., Horton, 1975; Sutherland & Wehby, 2001); modeling, roleplay, videotaped and graphed feedback (e.g., Sloat, Tharp, & Gallimore, 1977); principal inservice training (e.g., Armstrong, McNeil, & Van Houten, 1988); and one-time meetings (e.g., Chalk & Bizo, 2004; Ferguson & Houghton, 1992; Swinson & Harrop, 2005).



Methods of teacher training range from simple to complex. Some researchers have used audio-cuing devices to signal teachers during lessons (e.g., Andrews & Kozma, 1990; Van Houten & Sullivan, 1975) to increase praise. Audio-cues require little effort on the part of teachers, but more planning on the part of the researcher to program cues to maintain variable intervals and reduce predictability. Additionally, when audio-cues are not being used, teachers may revert back to previous performance levels (Andrews & Kozma). In contrast, Sloat et al. (1977) used a multi-component training to increase effective use of social reinforcement techniques (praise). Increases in praise were demonstrated before and after the entire training series with the second and sixth components producing the most improvement. However, because the order of training components was the same for all participants, a component analysis cannot be conducted to determine whether some components were more important to changing teacher behavior or if it was the combination of all the components in that particular order that was responsible for the change. As a result, this multi-component package remains too complex to implement with teachers in school settings.

Some researchers have used feedback and goal setting to improve teacher praise (Kalis et al. 2007; Stormont et al. 2007; Sutherland et al. 2000). Reinke et al. (2007) used visual performance feedback and three 30-min group consultation meetings to improve teachers' use of praise. Intervention consisted of the morning presentation of a daily graph for each teacher that contained the amount of behavior-specific praise directed to the target student for all prior days. The teachers increased their use of behavior-specific praise toward the target students, but these levels did not maintain after the intervention was removed. In another study using feedback and goal setting, Kalis et al. (2007) conducted a 20-min instruction to train a teacher to identify praise and behavior-specific praise. The teacher recorded praise during the lesson and at the end

of the lesson, and the researcher provided the teacher with feedback. The teacher increased her general and behavior-specific praise with training and the researcher was able to fade out the verbal prompt and self-monitoring while maintaining higher levels of praise. While feedback and goal setting can produce effective teacher change, recording and graphing teacher praise in order to provide feedback to the teacher results in a large time commitment from staff or outside researchers.

Researchers have instructed teachers in various methods of self-monitoring to facilitate change. Horton (1975) trained teachers to use behavior-specific praise through discussion, viewing a videotape and identifying instances and noninstances, and recording behavior-specific praise while listening to an audiotape. Rates of behavior-specific praise increased for both teachers after training while the teachers continued to receive audiotapes. Sutherland and Webby (2001) investigated the use of teachers' self-evaluation of praise from audiotaped samples of their own instruction to increase teacher praise. Teachers were able to increase their rates of praise using these methods, but authors were concerned with the lack of maintenance of praise rates after intervention. Although these interventions successfully increased teacher praise, like feedback and goal setting, they required a significant amount of time on the part of the researcher or teacher to provide and review feedback.

Within the school system, teacher inservice and other one-session trainings have been used to change the behavior of multiple teachers at one time (Chalk & Bizo 2004; Ferguson & Houghton 1992; Swinson & Harrop, 2005). Armstrong et al. (1998) examined the results of an inservice training held by an elementary school principal to train all 10 teachers in the school. Rates of specific praise increased with the inservice training and were maintained one year later. The authors determined that this intervention was cost effective because it only cost \$1000 to

pay an observer to collect data, 6 hours of training for the principal and 2 hours for the actual inservice training.

Brief teacher training meetings are less time consuming than other methods, yet still can produce increases in teacher praise. Successful teacher training must be cost effective for both the teacher and the school and must produce results that maintain after the removal of the intervention. Repeated meetings between teachers and consultants may not be feasible (Reinke et al., 2007). Audio-cuing interventions (e.g., Andrews & Kozma, 1990; Van Houten & Sullivan, 1975) resulted in immediate changes in teacher behavior, but changes did not maintain over time. Interventions involving feedback (e.g., Horton, 1975; Kalis, Vannest, & Parker, 2007; Reinke, Lewis-Palmer, & Martin, 2007) resulted in improvements in teacher praise, but required significant time and effort on the part of the researcher and teacher. In order to reduce the amount of time spent training teachers, the present study used a one-time meeting strategy to improve praise to reprimand ratios.

### **Purpose**

Teachers need simple and effective classroom management strategies to maintain high engagement and improve academic performance. Therefore, teacher training must also be simple and effective. Teachers must feel comfortable with an intervention in order to use it in their classroom (Reinke et al., 2007). Praise (teacher attention) is one simple strategy to improve student behavior. There are many recommendations for specific praise to reprimand ratios to meet this need. However, no experimental manipulations targeting the praise to reprimand ratio have been conducted. Training must also be efficient and produce the desired results. This study tested the effectiveness of a simple teacher training method that could be conducted by a principal or school psychologist.

The purpose of this study was to use a simple teacher training method to improve the praise to reprimand ratio used in the classroom and to experimentally demonstrate the relationship between an increased praise to reprimand ratio in the classroom and the on-task behavior of an entire class of students during structured academic activities. This study answers the following research questions: 1. To what extent does teacher praise to reprimand ratio change with a simple teacher training method? 2. To what extent is student on-task behavior sensitive to changes in teacher praise to reprimand ratio? 3. To what extent do frequency, content (social or academic in nature), and distribution (to groups or individuals) of praise vary with teacher praise to reprimand ratio? 4. What is the social validity of this method of teacher training and the resulting effects on student behavior? 5. In a preliminary study, to what extent are on-task and disruptive behaviors of individual students sensitive to changes in the teacher praise to reprimand ratio used in the classroom?

## **Method**

### **Participants & Setting**

One kindergarten teacher, two third-grade teachers, one fourth-grade teacher and one fifth-grade teacher from three midwestern suburban elementary schools volunteered to participate in the study. All the schools were participating in a federally funded research project on secondary and tertiary level supports within School-wide Positive Behavior Supports (SwPBS; Sugai & Horner, 2002), and administrators at each school had expressed a desire for incorporating ways of helping teachers meet the 4:1 praise to reprimand ratio recommended by SwPBS literature. To recruit teachers, the first author approached teachers individually after school with an overview of the project. Of the volunteers, two teachers were excluded from the study because student on-task behavior in their classrooms averaged above 80% across two

screening visits using the *Group On-Task/Off-Task (GOTO)*; Kamps, Greenwood, Arreaga-Mayer, Veerkamp, Utley, Tapia, et al., 2008) data collection measure (Appendix B).

Participating teachers were all Caucasian females, ages 25-33 years, with an average of 5 years of teaching experience (range 1-10 years). Four teachers had a bachelor's degree and one teacher had a master's degree.

The fourth-grade teacher nominated three male target students that she described as the most disruptive students in her classroom and a model female peer model as a comparison. Individual parent permissions were obtained for these students. Individual student observations were conducted during reading immediately following classroom observations in that classroom.

Observations were conducted during the first 20 minutes of reading instruction for each classroom. For all of the classrooms, reading consisted of group work and individual work. There were 20 students in the kindergarten class, 15 students in one third-grade classroom, 18 students in the other third-grade classroom, 18 students in the fourth-grade classroom, and 15 students in the fifth-grade classroom.

## **Materials**

To record data, the researcher used paper and pencil as well as a handheld personal digital assistant (PDA) (i.e., Dell Axim X30 Pocket PC).

## **Dependent Variables**

**Teacher.** Teacher praise was defined as verbal statements, physical gestures, or tangibles that indicate approval of behavior over and above an evaluation of adequacy or acknowledgement of a correct response (Table 1). Examples included pats on the back; delivery of tokens (Nafpaktitis et al., 1985); and teacher statements like "Great job," "I like how you raised your hand instead of calling out," and "Group 1 is doing a good job of working quietly."

Teacher praise was scored as a frequency count in one of four categories: praise for academic behavior of a group, praise for academic behavior of an individual, behavioral praise for social behavior of a group, and praise for social behavior of an individual. This allowed for evaluation of teacher praise and reprimand patterns and changes in those patterns as a result of the training. Academic praise was defined as praise statements regarding scholastic performance and answers to questions if the teacher praised the idea or answer (e.g. “Nice work.” “Great idea.” “Good handwriting.” “Very good answer.”). Praise for conduct was defined as praise statements regarding student conduct (e.g. “I like how you’re sitting still in your chair.” “Thank you for raising your hand.” “You’re working so nice and quietly.”). If the teacher gave a praise statement without enough descriptive praise to determine academic or social content, the statement was scored as social praise.

Teacher reprimands were defined as verbal statements, physical gestures, or tangibles (Nafpaktitis et al., 1985) that indicate disapproval of behavior beyond feedback on an incorrect response (Table 1). Examples of reprimands included shaking a finger at a student or putting a finger over the mouth to signal “be quiet”, giving the student a penalty card or moving the student’s name down a notch on the board to signal that the student needed to correct their behavior, and teacher statements like “Stop that,” “You need to get back to work,” and “It’s too loud in here.” Reprimands were scored if the problem behavior was already occurring or had already occurred. Teacher reprimands were also scored as a frequency count in one of four categories: reprimands for academic behavior of a group, reprimands for academic behavior of an individual, behavioral reprimands for social behavior of a group, and reprimands for social behavior of an individual.

**Student.** Student on-task behavior was defined as the student attending to the teacher,

other student speaking about academic content, or materials for the activity; appropriately asking for assistance; or waiting appropriately for the teacher to begin or continue with instruction (Table 1). Student on-task behavior data was collected using the *GOTO* data collection measure (Appendix B). Using this measure, students were divided into groups of 3-6 individuals, based upon their location in the classroom during the observation, with individuals at the same table or in the same row scored as one group. Individual students were not tracked across observations, but the same groups were scored during each observation. On-task behavior was scored using a Table 1

*Operational Definitions*

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Variable	Definition
Teacher academic praise	Verbal statements, physical gestures, or tangibles that indicate approval of scholastic performance
Teacher social praise	Verbal statements, physical gestures, or tangibles that indicate approval of student conduct
Teacher academic reprimand	Verbal statements, physical gestures, or tangibles that indicate disapproval of scholastic performance
Teacher social reprimand	Verbal statements, physical gestures, or tangibles that indicate disapproval of student conduct
Student on-task	Attending to the teacher, student speaking, or materials for the activity; asking for assistance; or waiting for the teacher to begin or continue instruction

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30-s momentary time sample. At the end of each 30-s interval, the observer looked at each group of students and recorded whether every student in that group was on-task at that moment

(marked with a +) or if any single student was off-task (marked with a -). This measurement system allowed for one observer to collect student and teacher data simultaneously, resulting in data for teacher and student behavior during the entire 20-min observation.

**Social validity.** At the end of the study, each teacher completed a social validity assessment (DePry & Sugai, 2002). A five-point Likert scale (1 = strongly agree, 5 = strongly disagree) was used to determine the social validity of the intervention and the teachers' perceptions of the effects on student behavior (Appendix E). The questions asked teachers how easy the packet was to understand and how helpful it was, what was the on-task and disruptive behavior of their students, and how they predict their future use and recommendation of the intervention.

**Individual students.** In one classroom, disruptive behavior for individual students was recorded following observation of teacher behavior and student on-task. Individual student disruptive behavior data was collected using the *Multiple Option Observation System for Experimental Studies (MOOSES)*, Tapp, Wehby, & Ellis, 1995). *MOOSES* is a data collection package that allows users to collect frequency, duration, and interval recordings on a laptop or hand-held personal digital assistant (Appendices C & D). Observations on individual students were also conducted during reading immediately following the *GOTO* observation for the classroom. Multiple probes were taken for each student ranging from 4-7 observations in baseline and 4-5 observations during the initial intervention condition. After the 20-min *GOTO* observation, each student was observed for 10 min using *MOOSES*. Individual student disruptive behavior was defined as inappropriate verbal statements towards others that were argumentative, taunting, name-calling, put downs, or provocative in nature, or nondirective negative verbal or gestural behavior, including misuse of materials (Shores & Jack, 1993). Examples included



refusals to follow directions with arguing statements, chatting during work time if it is not task related, tapping or drumming on objects, throwing objects in the air, and coloring on desk or clothes instead of paper.

### **Data Collection and Analysis**

The first author served as the primary observer in all phases of the study. The primary observer recorded student and teacher behaviors while the teacher conducted the regular reading lesson for that day. *GOTO* observations lasted 20 min and were conducted once per day. A timer flashed every 30s to cue observation intervals. *MOOSES* observations lasted 10 min per target student and began during reading immediately following the *GOTO* observation. Observations were not conducted if the teacher was absent or if the reading lesson was not taught that day. Effect sizes were calculated for teacher percent praise and student on-task using Glass's  $\Delta$  by subtracting the baseline mean from the intervention mean and dividing that by the standard deviation of baseline (Busk & Serlin, 1992). Effect size is used as a general measure of effectiveness of treatment. By calculating an effect size ratio, results can be compared across studies testing the same hypothesis that use different measurements. Effect sizes of 0.2 or less are generally considered small, 0.5 medium, and 0.8 and greater large effect sizes.

**Observer training and interobserver agreement.** Secondary observers were Juniper Gardens Children's Project staff working in the school as part of the SwPBS research project and were trained to an 80% agreement criterion with the primary observer prior to baseline. Training included reading and reviewing the behavior definitions and data collection practice in the classrooms until 80% agreement was obtained for one session. Interobserver agreement was assessed for 42% of sessions and was conducted in each phase of the study. Both observers viewed the classroom from the same vantage point, but at a distance sufficient to ensure

independent data collection. For *GOTO* observations, interobserver agreement for teacher behavior was calculated as the lesser number of statements recorded divided by the larger number of statements recorded within each teacher behavior category and multiplied by 100. Momentary time sampling of groups was cued by the primary observer using a hand signal of the number of the group and allowing 2s to observe before signaling the number of the next group. Interobserver agreement for student on-task behavior was calculated as the number of intervals of agreement divided by the number of intervals of agreement and disagreement and multiplied by 100. For *MOOSES* observations, interobserver agreement was calculated using the Event Interobserver Agreement analyses with a 5s window around each behavior coded by the primary observer (Tapp et al., 1995). If the secondary observer scored the same behavior within the window of the primary observer, an agreement was scored. Interobserver agreement was calculated by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100%.

### **Experimental Design**

This study used an ABAB reversal design. This design allowed for comparison between baseline and intervention conditions and controls for different histories, maturation, testing, instrumentation, regression, selection, mortality, and interaction effects (Campbell & Stanley, 1963) by alternating between conditions to allow for multiple demonstrations of experimental control. Repeated demonstrations in different classrooms allow for increased generalizability.

### **Procedures**

**Baseline.** Observations were conducted during the first 20 min of reading for each classroom. Regularly scheduled reading lessons occurred during baseline and consisted of some large group and independent work. The teacher was informed that we would be watching the

classroom to collect data on the students' current level of on-task behavior before intervention. All teachers were aware that the purpose of the study was to measure the effectiveness of an increased praise to reprimand ratio on improving student on-task behavior. Data collection continued until the teacher praise ratio and student on-task behavior stabilized.

**Intervention.** The intervention consisted of teacher review of a 4-page packet of information on the benefits of a 4:1 praise ratio in the classroom and a meeting with the primary researcher (Appendix F). Within the packet, a rationale for praise was built by presenting information from peer-reviewed articles and published chapters on classroom management. Tips and tricks for increasing praise (e.g., moving and scanning, carrying marbles, delivering tickets or tokens) were described. The packet also summarized the best practices for using praise (i.e., praise is descriptive, contingent on appropriate behavior, sincerely delivered, varied). Teachers were asked to answer three questions regarding the packet: (a) what was most interesting and/or helpful?; (b) what was troublesome or confusing?; (c) what strategy seems most appropriate for your classroom? The first two questions were included to ensure that teachers had read the packet. The third question was used to help teachers establish a plan for improving the praise to reprimand ratio used in their classroom. The intervention packet was delivered to each teacher at least 3 days before the meeting was scheduled to be conducted to review the information covered in the packet.

Each meeting was conducted before class on the morning of the first day of intervention data collection. The meeting lasted 15 min and consisted of the researcher briefly reviewing the information presented in the packet. The researcher recorded the teachers' answers to the two questions from the packet and also asked the teachers to identify at least one strategy that they would like to use in their classroom to help them increase their praise. A strategy was identified

so that teachers would have a method by which they could change their own behavior. This also allowed the primary researcher the opportunity to observe whether or not the teacher was using the selected strategy, although there was no requirement to do so. No data were presented to the teacher on their baseline levels of praise and reprimands at this time. Observations were conducted during regularly schedule academic lessons as during baseline.

**Reversal.** After teacher praise and student on-task levels stabilized during intervention, the primary observer met briefly with the teacher. These meetings lasted no longer than 5 min and consisted of the researcher asking the teacher to discontinue the use of the strategy identified to improve the praise to reprimand ratio. Data collected during baseline on the frequency of teacher praise and reprimands were presented. This condition remained in effect until teacher praise ratios and student on-task behavior stabilized. The purpose of the reversal was to serve as a clear demonstration that student behavior responded systematically to the presence and absence of a positive ratio of praise to reprimands.

**Intervention reinstatement.** During intervention reinstatement, the researcher asked the teacher to return to the strategies used during intervention. No data collected during the previous intervention phase were presented at this time.

**Follow-up.** During follow-up, the researcher revisited the classroom after not observing for a time period. The researcher did not meet with the teacher prior to or after observation. No data collected previously were presented. Follow-up observations were planned for 1-2 weeks after the end of intervention reinstatement, the following fall semester (4-7 months later), and the subsequent spring semester (1 year later).

## **Results**

During the intervention, all the teachers improved their praise to reprimand ratios above

baseline levels. As teacher praise to reprimand ratios improved, class-wide student on-task levels increased for all classrooms. As teacher praise to reprimand ratios changed, frequency of praise increased, with the majority of praise addressing social conduct and directed to individuals instead of the group. Teachers rated the intervention and the results favorably. For the individual students, three students exhibited decreased disruptive behavior and one student exhibited increased student on-task behavior increased during intervention.

### **Teacher and Classroom Student Behavior**

Intervention began with a meeting to review the teacher packet. The teachers were asked to answer two questions (most interesting/helpful and troublesome/confusing) regarding the content of the packet and identify the strategy they planned to use. Ms. W. reported that the most helpful part was that the packet put all the tips and research together in one place; she reported that nothing was confusing. Ms. W. identified the strategy of praising appropriate behavior in one student when another student is engaging in inappropriate behavior. She also stated that she would use tokens to distribute to students for appropriate behavior. Ms. T. reported that the most helpful tip was using tokens to remember to praise; she reported that the confusing part was that she thought she was already using some of these strategies. Ms. T. identified the strategy of distributing tokens to students when she praised. Ms. C. reported that the most helpful part was to vary the kind of praise she used; she reported concern with how difficult it might be to reach a praise to reprimand ratio of 4:1. Ms. C. identified the strategy of having a certain number of tokens with her to try to get rid of by praising students. Ms. G. reported that the most helpful part was all the possible techniques and strategies to help her remember to praise; she reported concern with insuring the praise was earned and not delivered too much. Ms. G. identified the strategy of praising appropriate behavior in one student when another student is engaging in

inappropriate behavior. She also stated that she would use tokens to distribute to students for appropriate behavior and work on increasing descriptive praise. Ms. P. reported that the most helpful part was the summary of best practices regarding praise; she reported concern for dealing with students who report they don't want the tokens used in the classroom. Ms. P. identified the strategy of moving and scanning the classroom frequently to catch students being good.

Teacher use of identified strategies was not recorded throughout the study because the focus of the intervention was improving the praise to reprimand used by the teacher. Delivery of tokens was included in the definition for teacher praise, but the goal of the meeting and teacher packet was to increase teacher verbal statements of praise. The tokens were suggested as ways to cue the teacher to praise students. All the teachers and students had access to the school token system. Teachers gave out tokens to students throughout the day since the beginning of the school year. Students could then purchase items from the school store (usually open once a week). Prizes included candy, school supplies, toys, and some more expensive electronics.

Teacher praise to reprimand ratio and student on-task for the group were graphed and visual inspection was used to determine sensitivity to intervention for each classroom. Figures 1 through 5 display the percent of teacher comments that were praise, the frequency of teacher praise and reprimands, and student on-task for all five classrooms. Along the x-axis are sessions and along the y-axis are percentage of praise, frequency of praise and reprimands, and percentage of intervals students were on-task during reading. Teacher praise to reprimand ratio is graphed as percentage of teacher comments that were praise, where 50% equals a neutral 1:1 praise to reprimand ratio. Points above 50% represent a positive praise to reprimand ratio with more praise statements than reprimands. Points below 50% represent a negative praise to reprimand ratio with more reprimands than praise statements.

Ms. W. (Figure 1) had a mean percent praise of 9.7% (range, 0% to 26.3%) in baseline, 89.1% (range, 80.0% to 100%) in intervention, 9.4% (range, 0% to 50.0%) in reversal, and 87.1% (range, 70.0% to 100%) in reinstatement of intervention. During follow-up observations, Ms. W. had a praise percentage of 0% at 2 months, and 0% at 7 months. Ms. W. had a mean frequency of 1.5 praise statements (range, 0 to 5) and 8 reprimands (range, 2 to 14) in baseline, 19 praise statements (range, 12 to 44) and 2 reprimands (range, 0 to 4) in intervention, 0.3 praise statements (range, 0 to 1) and 3.9 reprimands (range, 1 to 8) in reversal, and 14 praise statements (range, 7 to 21) and 2.7 reprimands (range, 0 to 6) in reinstatement of intervention. During follow-up observations, Ms. W. had a frequency of 0 praise statements and 6 reprimands at 2 months, and 0 praise statements and 0 reprimands at 7 months. In Ms. W.'s classroom, the mean percentage of intervals of classroom on-task behavior were 51.7% (range, 48.0% to 55.3%) in baseline, 67.2% (range, 56.0% to 80.0%) in intervention, 64.8% (range, 54.2% to 84.2%) in reversal, and 88.3% (range, 85.0% to 95.0%) in reinstatement of intervention. During follow-up observations, the percentage of intervals of classroom on-task behavior in Ms. W.'s class were 59.0% at 2 months, and 79.2% at 7 months.

Ms. T. (Figure 2) had a mean percent praise of 29.8% (range, 13.8% to 46.7%) in baseline, 65.9% (range, 50.0% to 76.2%) in intervention, 14.6% (range, 14.6% to 14.7%) in reversal, and 43.8% (range, 29.0% to 58.5%) in reinstatement of intervention. During follow-up observations, Ms. T. had a praise percentage of 18.2% at 1 week. Ms. T. had a mean frequency of 8.5 praise statements (range, 4 to 17) and 20.3 reprimands (range, 8 to 28) in baseline, 23 praise statements (range, 5 to 41) and 12 reprimands (range, 2 to 20) in intervention, 6 praise statements (range, 5 to 7) and 35 reprimands (range, 29 to 41) in reversal, and 17 praise statements (range, 9 to 24) and 20 reprimands (range, 17 to 22) in reinstatement of intervention.

During follow-up observations, Ms. T. had a frequency of 2 praise statements and 9 reprimands at 1 week. In Ms. T.'s classroom, the mean percentage of intervals of classroom on-task behavior were 52.5% (range, 49.6% to 57.5%) in baseline, 78.7% (range, 69.7% to 86.7%) in intervention, 51.6% (range, 45.6% to 57.5%) in reversal, and 75.3% (range, 73.1% to 77.5%) in reinstatement of intervention. During follow-up observations, the percentage of intervals of classroom on-task behavior in Ms. T.'s class were 32.0% at 1 week.

Ms. C. (Figure 3) had a mean percent praise of 52.5% (range, 27.3% to 77.8%) in baseline, 76.2% (range, 63.3% to 86.8%) in intervention, 53.1% (range, 31.3% to 68.8%) in reversal, and 72.6% (range, 62.1% to 84.6%) in reinstatement of intervention. During follow-up observations, Ms. C. had a praise percentage of 75.0% at 1 week, 50.0% at 4 months, and 83.3% at 1 year. During the 20-min GOTO observations, Ms. C. had a mean frequency of 5.3 praise statements (range, 1 to 12) and 5.2 reprimands (range, 1 to 10) in baseline, 23 praise statements (range, 19 to 33) and 7 reprimands (range, 5 to 11) in intervention, 10 praise statements (range, 5 to 16) and 8.8 reprimands (range, 5 to 13) in reversal, and 22 praise statements (range, 18 to 33) and 8 reprimands (range, 6 to 11) in reinstatement of intervention. During follow-up observations, Ms. C. had a frequency of 3 praise statements and 1 reprimand at 1 week, 5 praise statements and 5 reprimands at 4 months, and 20 praise statements and 4 reprimands at 1 year. In Ms. C.'s classroom, the mean percentage of intervals of classroom on-task behavior were 64.4% (range, 37.8% to 75.6%) in baseline, 85.0% (range, 80.7% to 90.8%) in intervention, 67.5% (range, 53.8% to 76.0%) in reversal, and 79.2% (range, 71.6% to 87.1%) in reinstatement of intervention. During follow-up observations, the percentage of intervals of classroom on-task behavior in Ms. C.'s class were 82.1% at 1 week, 76.0% at 4 months, and 70.0% at 1 year.

Ms. G. (Figure 4) had a mean percent praise of 12.2% (range, 0% to 61.1%) in baseline,



57.6% (range, 0% to 88.9%) in intervention, 21.3% (range, 16.7% to 27.3%) in reversal, and 89.6% (range, 81.5% to 94.1%) in reinstatement of intervention. During follow-up observations, Ms. G. had a praise percentage of 0% at 2 weeks, 0% at 4 months, and 0% at 1 year. Ms. G. had a mean frequency of 2.2 praise statements (range, 0 to 11) and 6.8 reprimands (range, 4 to 10) in baseline, 7.3 praise statements (range, 0 to 16) and 3.4 reprimands (range, 2 to 6) in intervention, 2 praise statements (range, 1 to 3) and 7.3 reprimands (range, 4 to 10) in reversal, and 23 praise statements (range, 14 to 32) and 2.7 reprimands (range, 1 to 5) in reinstatement of intervention. During follow-up observations, Ms. G. had a frequency of 0 praise statements and 4 reprimands at 2 weeks, 0 praise statements and 0 reprimands at 4 months, and 0 praise statements and 2 reprimands at 1 year. In Ms. G.'s classroom, the mean percentage of intervals of classroom on-task behavior were 67.0% (range, 55.0% to 75.6%) in baseline, 83.7% (range, 76.3% to 90.8%) in intervention, 75.4% (range, 62.5% to 86.3%) in reversal, and 85.6% (range, 83.1% to 89.2%) in reinstatement of intervention. During follow-up observations, the percentage of intervals of classroom on-task behavior in Ms. G.'s class were 55.0% at 2 weeks, 93.1% at 4 months, and 85.6% at 1 year.

Ms. P. (Figure 5) had a mean percent praise of 41.6% (range, 12.5% to 63.6%) in baseline, 62.2% (range, 0% to 85.7%) in intervention, 20.4% (range, 0% to 33.3%) in reversal, and 56.5% (range, 0% to 09.7%) in reinstatement of intervention. During follow-up observations, Ms. P. had a praise percentage of 71.4% at 2 weeks. Ms. P. had a mean frequency of 8.8 praise statements (range, 3 to 14) and 12.8 reprimands (range, 7 to 21) in baseline, 16 praise statements (range, 0 to 37) and 6.2 reprimands (range, 1 to 10) in intervention, 6 praise statements (range, 0 to 11) and 17 reprimands (range, 11 to 22) in reversal, and 16 praise statements (range, 0 to 39) and 5.7 reprimands (range, 2 to 10) in reinstatement of intervention.

During follow-up observations, Ms. P. had a frequency of 25 praise statements and 10 reprimands at 2 weeks. In Ms. P.'s classroom, the mean percentage of intervals of classroom on-task behavior were 72.1% (range, 61.7% to 88.5%) in baseline, 83.0% (range, 78.1% to 90.0%) in intervention, 67.3% (range, 65.0% to 71.3%) in reversal, and 85.2% (range, 80.0% to 90.7%) in reinstatement of intervention. During the follow-up observation, the percentage of intervals of classroom on-task behavior in Ms. P.'s class was 78.7% at 2 weeks.

Effect sizes for teacher percent praise ranged from 1.18 to 6.30 (Table 2). Effect sizes for classroom student on-task ranged from 1.20 to 9.44 (Table 2). Effect sizes are one way to summarize treatment effects and compare these effects to other studies. In this study effect sizes for teacher percent praise and classroom student on-task were large; however, effect sizes are subject to the same errors as other statistical estimates and "large" is a relative term.

Table 2

*Effect Sizes*

Teacher	% Praise	Classroom On-Task
Ms. W.	6.30	3.51
Ms. T.	2.76	9.44
Ms. C.	1.18	1.20
Ms. G.	1.86	1.69
Ms. P.	1.28	1.44

A praise to reprimand ratio of 4:1 was presented to teachers as a recommendation to improve student social conduct in the teacher packet. The intervention resulted in an improvement in the social praise to reprimand ratio delivered by all teachers (Table 3). Three teachers (Ms. W, Ms. T, and Ms. C) achieved more positive praise to reprimand ratios in the first

intervention condition than in the second intervention condition, although both conditions were elevated above baseline. For the remaining teachers, praise to reprimand ratios were higher in the second intervention condition. Four teachers (Ms. W, Ms. T, Ms. G, and Ms. P) displayed more negative praise to reprimand ratios in the second baseline condition than during initial baseline.

Table 3

*Teacher Social Praise to Reprimand Ratios*

Condition	Ms. W	Ms. T	Ms. C	Ms. G	Ms. P
Baseline	1:5.3	1:2.4	1:1	1:3.1	1:1.5
Intervention	9.6:1	1.9:1	3.3:1	2.2:1	2.6:1
Baseline 2	1:15.5	1:5.8	1.1:1	1:3.7	1:2.8
Intervention 2	5.3:1	1:1.2	2.8:1	8.4:1	2.9:1
Follow-Up	0:6	1:4.5	2.8:1	0:6	2.5:1

As teacher praise to reprimand ratios improved, other facets of teacher commenting changed as well (Table 4). Teacher data are presented for the overall (combined academic and social) praise to reprimand ratio, percent of academic comments that were praise, percent of social comments that were praise, percent of commenting directed to social behavior, and percent of commenting directed to individuals for each study condition. The overall praise to reprimand ratio improved during intervention conditions. Academic praise did not vary significantly throughout the study for most teachers. For Ms. T, overall academic commenting decreased, resulting in a decrease in academic praise as well. Social praise increased during intervention conditions. Teachers directed more comments toward social behavior of students during intervention, as well. Social praise during intervention primarily took the form of praise to individuals instead of praise to groups.

Table 4

*Distribution of Teacher Comments*

Condition	Comments	Ms. W	Ms. T	Ms. C	Ms. G	Ms. P
Baseline	Overall ratio	20:32	89:123	53:32	71:34	90:81
	Academic praise	100%	91.7%	95.8%	100%	60.3%
	Social praise	9.7%	29.8%	52.5%	12.2%	41.6%
	Social comments	73.1%	81.6%	74.1%	42.9%	76.0%
	Individual comments	75.0%	49.1%	80.0%	80.0%	77.2%
Intervention	Praise ratio	198:18	127:62	104:28	102:27	96:31
	Academic praise	92.9%	100%	75%	87.5%	100%
	Social praise	89.1%	65.9%	76.2%	57.6%	62.2%
	Social comments	68.5%	94.7%	91.7%	65.9%	88.2%
	Individual comments	86.1%	57.7%	86.4%	81.4%	89.8%
Baseline	Praise ratio	27:35	12:70	55:35	12:22	34:54
	Academic praise	84.4%	0%	100%	100%	89.3%
	Social praise	9.4%	14.6%	53.1%	21.3%	34.5%
	Social comments	53.2%	100%	83.3%	82.4%	78.4%
	Individual comments	75.8%	47.6%	68.9%	79.4%	75.0%

**Teacher Satisfaction**

Table 5 summarizes the results of the teacher satisfaction surveys. The average response across teachers ranged from “strongly agree” to “agree”. Individually, all items were scored as “strongly agree” or “agree” with one “not sure”. For the question “What did you like most?” teachers gave the following answers: noticing positive behavior; students’ response; teaching

Table 4 continued

*Distribution of Teacher Comments*

<i>Condition</i>	<i>Comments</i>	<i>Ms. W</i>	<i>Ms. T</i>	<i>Ms. C</i>	<i>Ms. G</i>	<i>Ms. P</i>
Intervention	Praise ratio	64:10	42:39	115:32	71:8	139:41
	Academic praise	90%	50%	100%	66.7%	84.1%
	Social praise	87.1%	43.8%	72.6%	89.6%	56.5%
	Social comments	67.6%	88.9%	82.3%	94.9%	86.1%
	Individual comments	81.1%	54.3%	76.9%	93.7%	80.6%
Follow-Up	Praise ratio	4:7	2:12	37:11	21:8	30:10
	Academic praise	83.3%	0%	83.3%	100%	100%
	Social praise	0%	18.2%	69.4%	0%	71.4%
	Social comments	54.5%	78.6%	79.2%	20.7%	87.5%
	Individual comments	63.6%	57.1%	83.3%	75.9%	75.0%

more; reading packet; high student motivation; [students gave] more attention to task; [the intervention] encouraged good behavior. For the question “What could be improved?” teachers gave the following answers: Get an overview before beginning; inclusion of all staff for support; more frequent updates and graphs; it took time away from instruction to praise; have more feedback (results).

**Individual Student Behavior**

The on-task behavior percentage, student disruptive frequency, and personal praise to reprimand ratio for each student were recorded to determine sensitivity to intervention for each behavior. Table 6 displays percentage on-task, frequency of disruptive behavior, and teacher praise and reprimands for all three target students and one peer.

Table 5

*Social Validity Assessment Results*

Statement	Ms W	Ms T	Ms C	Ms G	Ms P	Avg.
Packet was easy to understand.	1	1	1	1	1	1
Strategies were helpful.	2	1	1	1	1	1.2
Easy to use a 4:1 praise ratio.	1	1	2	2	1	1.4
Student engagement increased.	1	2	1	2	2	1.6
Disruptive behavior decreased.	1	3	2	2	2	2.0
Would recommend 4:1 praise ratio.	2	1	1	2	1	1.2
Continue to use 4:1 praise ratio.	2	1	1	2	1	1.2

*Note.* 1 = Strongly Agree, 2 = Agree, 3 = Not Sure, 4 = Disagree, 5 = Strongly Disagree.

### **Discussion**

The purpose of this study was to use a simple teacher training method to improve the praise to reprimand ratio used in the classroom and to experimentally demonstrate the relationship between an increased praise to reprimand ratio in the classroom on the on-task behavior of an entire class of students during structured academic activities. Review of the teacher packet and meeting with the researcher resulted in improvements to teachers' praise to reprimand ratios. Some teachers maintained an improved praise to reprimand ratio after the final intervention condition. Student on-task behavior for the group increased as teacher praise to reprimand ratios improved. The frequency of teacher praise toward student social conduct increased and was directed to individuals more often than groups. Teachers reported satisfaction with this teacher training method and the resulting effects on student behavior. Individual students responded differently to the change in teacher praise to reprimand ratio with some

students exhibiting no change in behavior and others exhibiting decreased disruptive behavior or increased engagement.

Table 6

*Individual Student Data*

Student	Mean % On-Task		Disruptive Behavior		Praise to Reprimand Ratio	
	BL	INT	BL	INT	BL	INT
	Student T1	80.5 (58.5-97.3)	71.8 (58.0-93.8)	7 (3-10)	2 (0-3)	1:1 (1:1-1:3)
Student T2	89.2 (78.3-100)	92.3 (80.8-100)	2.7 (0-10)	2.5 (0-5)	1:1 (1:3-2:1)	1:1 *
Student T3	75.9 (39.0-98.8)	96.7 (90.0-100)	12 (0-22)	7 (2-10)	1:1 (1:2-3:1)	1:1 (1:1-2:1)
Student P1	83.8 (65.7-99.0)	95.4 (86.3-100)	7.2 (0-14)	3.3 (0-6)	1:1 *	1:1 *

Note. Ranges that equaled the average are noted with a \*.

**Teacher Behavior**

Four of the five teachers selected the use of tokens as a strategy to improve their praise to reprimand ratio. Although the use of the strategy was not recorded, anecdotal evidence from direct observation suggests that these four teachers used the tokens during intervention and ceased using tokens during reversal. For the fifth teacher that selected moving and scanning as her strategy, data during intervention conditions may be variable because the strategy she selected did not involve a visual prompt like the tokens.

Based on the data from these teachers, the simple training method was effective in improving teacher praise to reprimand ratios. Ms. W. had a negative praise to reprimand ratio during baseline observations. After training, she improved her ratio dramatically. Although her praise to reprimand ratio trends downward during intervention, all ratios were much improved from baseline. The downward trend may be due to the fact that the teacher's initial increase in ratio was so dramatic. After a few days, she settled in to a more manageable ratio of praise to reprimands. Ms. T. used a neutral to negative praise to reprimand ratio in baseline. After training, her praise to reprimand ratio stayed above 1:1. For Ms. T., the final baseline and intervention conditions were shorter due to the approaching end of the academic school year. Ms. C. had a variable baseline with the majority of points falling at or below a neutral praise to reprimand ratio. Despite the increasing trend, intervention began due to increasing disruptive behavior in the classroom. After training, she immediately improved her praise to reprimand ratio. Although a functional relationship was not established between baseline and initial intervention, subsequent condition changes established a functional relationship. Ms. G. had a low and variable baseline with praise to reprimand ratios falling below 1:1. The intervention meeting was scheduled with the teacher prior to the fourth observation day in baseline. A fifth baseline observation was conducted prior to the scheduled teacher meeting to accommodate the fourth data point. On the first observation in intervention, the students were presenting posters they had made about the book they were reading, resulting in few comments from the teacher. This may account for the high levels of on-task, despite the teacher not increasing praise. After training, her praise to reprimand ratio was initially neutral and then increased to more positive ratios. Ms. P. had a neutral praise to reprimand ratio in baseline. After training, she improved to more positive ratios with the exception of one day. On that particular day, she reported to the



researcher that she had slept through her alarm, locked herself out of her car, and twisted her ankle that morning and that she was not having a good day. During the second intervention condition, Ms. P. also had a few low days. The researcher observed in the classroom and noted that the teacher was praising the students during the transition into reading lesson, which was not recorded. Teachers did not necessarily meet the ratio of 4:1 recommended in the packet, but did improve their ratios above baseline. This means that while the simple training intervention may have recommended a certain ratio, and teachers were able to change their behavior toward the goal, some teachers were unable to match a specific ratio. More specific training or feedback may be necessary to achieve a specific ratio although general training can produce improvements.

For some teachers, the teacher training and experiencing the conditions was enough to maintain behavior change; for other teachers, it was not. Maintenance observations were conducted to determine how the teachers' natural ratios of praise to reprimands changed following intervention. Observations were conducted shortly after completion of intervention (between 1 week and 2 months), in the fall of the next school year (between 4 to 7 months later), and in the spring of the following year (1 year later). Ms. W. returned to baseline levels of praise to reprimand ratio at 2-month and 7-month observations. Ms. W. was unavailable for further maintenance observations because she was out on maternity leave. Ms. T. returned to her baseline praise to reprimand ratio at the 1-week maintenance observation. Further maintenance observations were not conducted for Ms. T. because the study concluded. Ms. C. maintained a high praise to reprimand ratio 1 week following intervention and 1 year later. At four months, her praise to reprimand ratio was at baseline levels. This was the fall semester of a new academic year, and it is possible that Ms. C. had returned to her former ratio because she had not taught

students in the summer months. Over summer break, Ms. C. did not have the opportunity to practice the newly learned skill of using a higher praise ratio with her students. By the spring semester, Ms. C. had time to practice the improved praise to reprimand ratio. Ms. G. returned to baseline levels of praise to reprimand ratio following intervention at 2 weeks, 4 months, and 1 year later. Ms. P. maintained a praise to reprimand ratio from intervention at the 2-week maintenance observation. Ms. P. was unavailable for further maintenance observations because she moved to a new school district at the end of the school year. Out of these 5 teachers, 2 teachers maintained intervention levels of praise to reprimand ratios immediately following intervention. More research is needed to determine what maintains behavior change after intervention is removed.

Based upon the repeated demonstrations of experimental control within each classroom and across classrooms, student average on-task as measured by *GOTO* is sensitive to changes in teacher praise to reprimand ratio. In all the classrooms, on-task levels were elevated above baseline levels during intervention while the teacher was using a more positive praise to reprimand ratio than in baseline. During initial baseline, student on-task was low in Ms. W's classroom. During intervention, on-task was elevated, but began to decrease for the first 4 sessions. These sessions were preceding winter break. Upon return from winter break, intervention resumed and engagement levels were significantly higher. During the reversal condition, on-task immediately dropped from intervention levels, but spiked to a high level upon the arrival of a student teacher in the classroom. The student teacher was not a participant in the study and as the students got used to her presence, student on-task decreased to original baseline levels. Upon reinstatement of intervention, on-task immediately increased to high levels. In Ms. T's classroom, on-task levels were low during baseline and reversal conditions, but elevated

during intervention conditions. In Ms. C's class, on-task averages were low during baseline and reversal conditions. During intervention conditions, student on-task improved above baseline levels. In Ms. G's class, intervention conditions produced higher levels of on-task than baseline and reversal conditions with a small overlap when switching from intervention to baseline. This delay in a change in students' behavior could be a carryover effect from intervention. Student on-task averaged below 70% during baseline and reversal conditions in Ms. P's class. During intervention, on-task was elevated above baseline levels. The high level of on-task on the first day of baseline occurred on the 100<sup>th</sup> day of school and the kindergarten class had a show and tell session immediately following the reading lesson where they presented their personal collections of 100 items they brought to school with them. The high levels of on-task may be related to the students' interest in the special event that day.

Various components of praise changed as teacher praise to reprimand ratio changed. Teacher comments were tallied and divided into three categories: praise or reprimand, social or academic content, and directed to an individual or a group. Three teachers increased the overall frequency of commenting as they improved the praise to reprimand ratio. For these teachers, frequency of commenting and praise ratio cannot be separated to determine which component was responsible for changes in student behavior. Future researchers should determine ways to control for frequency of praise while targeting praise to reprimand ratios. Percent of comments regarding social conduct was measured across conditions. One teacher (Ms. P.) provided proportionally more comments regarding social conduct during intervention; two teachers (Ms. G. & Ms. T.) increased comments regarding social conduct throughout the study; one teacher (Ms. W.) decreased comments regarding social conduct throughout the study; the other teacher (Ms. C.) did not vary the proportion of comments towards social conduct. The variability across

teachers may be due to the general teacher training method. Instead of training teachers on a specific technique or targeting praise toward particular behaviors, the current study presented information on and targeted a 4:1 praise to reprimand ratio without specifying the content. Teachers allotted their praise toward the content they deemed relevant to their classroom. With regard to distribution across individuals or groups, all the teachers were fairly consistent in distributing the majority of comments to individuals across conditions. One teacher (Ms. T.) delivered roughly half of her comments to groups across conditions. The distribution towards individual comments may make improving the praise to reprimand ratio easier because there are more opportunities to identify individuals for praise. Future researchers should investigate whether it is more efficient to deliver comments to individuals or groups.

### **Teacher Satisfaction**

The social validity of this study was measured through a survey to participating teachers. All five teachers completed and returned the survey. All teachers rated the intervention as easy to understand, helpful, and easy to use. Almost all teachers marked that they noticed an increase in on-task behavior and a decrease in disruptive behavior while using the intervention. For some classrooms, the average change in student on-task was only around 10%, but a relatively small improvement can mean a significant increase in time gained in instruction. Also, all teachers marked that they would recommend and continue to use the intervention. The reports reflect a simple and effective intervention with a high level of satisfaction. However, not all teachers maintained positive praise to reprimand ratios after intervention. The discrepancy between what was reported and what was actually observed could be the result of teachers attempting to please the researcher by reporting favorable results. A solution might be to have someone within the school and not affiliated with the researcher present the satisfaction survey. It could also be that

when teachers stopped focusing on the intervention intently, the praise to reprimand ratio drifted and teachers were unaware of the drift. More practice in intervention may result in stronger habits of higher praise to reprimand ratios.

### **Individual Student Behavior**

Intervention had different effects across individual students. Data were collected on individual students in Ms. T.'s classroom to determine the effects of changes in teacher praise to reprimand ratios on individual student on-task and disruptive behavior. Due to time constraints, data were collected on individual students during the initial baseline and intervention conditions only, resulting in an AB design. Decisions to change conditions were based on teacher and group behavior, not individual student data. For student T1, intervention resulted in a decrease in verbal disruptive behavior as the student began to receive a positive praise to reprimand ratio from the teacher. No change in on-task was observed. For student T2, no change was observed in on-task or disruptive behavior as the student began to receive a positive praise to reprimand ratio from the teacher. For student T3, a slight increase in on-task and a slight decrease in verbal disruptive behavior were observed during intervention from baseline. The student, however, did not personally receive a more positive praise to reprimand ratio than during baseline. For student P1, no change was observed in on-task or disruptive behavior between baseline and intervention. The student did receive individual praise from the teacher during intervention. For most of these students, the praise to reprimand ratio received from the teacher did not change significantly. The differences across students may be due to some students being more sensitive to teacher attention as a reinforcer than others. Another explanation is that some students may need more individualized interventions to produce behavior change. The peer nominated was just as disruptive as some of the target students nominated, yet never drew the teacher's reprimands.

Although the teacher increased her praise statements to the class as a whole, the students nominated as the most difficult did not receive the praise.

### **Limitations**

One limitation of this study is the use of *GOTO* to measure student on-task behavior. With the *GOTO* measure, students are grouped together and not tracked individually. Because of this, it is not possible to determine if specific, individual students were consistently off-task or if various different students were off-task. Both situations would result in an off-task score for the group. It is possible that the same student was off-task at every interval resulting in a mark of off-task for the entire group of students and possibly bringing down the classroom average for on-task behavior. The data may reflect a low classroom average for overall on-task behavior when it is really only one or two students whose behavior needed to improve. Data for individual students were collected in one classroom to examine the effects of the intervention on students nominated as disruptive.

Another possible limitation is the small number of replications of intervention and its effects in the study. Multiple classrooms of different grade levels and from different schools were selected as participants in order to expand the generalizability of the results to a variety of other teachers and classrooms. Replications with more participants will also improve the generalizability of the results. The teachers in the current study were from similar suburban schools already participating in School-wide Positive Behavior Supports (SwPBS). Participation from teachers in urban and rural schools and schools not participating in SwPBS would enhance the generalizability of results. Stronger effects may be found in schools with more negative praise to reprimand ratios.

Although not a specific target, an additional limitation is that teachers did not to achieve

and maintain the 4:1 praise to reprimand ratio recommended in the teacher packet. Teachers were asked to identify a strategy that they thought would help them achieve the 4:1 praise to reprimand ratio. Teachers could change strategies or discontinue use of strategies as they deemed appropriate. Regardless of the use or nonuse of an identified strategy, all teachers improved the ratio of praise to reprimands used in their classroom with the packet and meeting. Future researchers should examine whether particular ratios are more beneficial than others. Future researchers should also investigate specific strategies to assist teachers in achieving and maintaining those ratios.

Additionally, a limitation of this study is the lack of measurement of the use of the teacher-selected strategy. Although the focus of this study was on the change in teacher praise to reprimand ratio and not the use of any particular strategy, data on the use of the selected strategy would measure the fidelity of implementation. Differences in selected strategies or the consistency of use of strategies may help to explain why some teachers achieved higher praise to reprimand ratios than other, or why some teachers failed to maintain the use of an improved praise to reprimand ratio. Future researchers should investigate teacher selection of strategies to determine which ones have social validity and assist teachers in achieving and maintaining changes in their behavior.

It is also possible that the use of tokens used by some teachers functioned as a reinforcer alone, and not that teacher praise changed the behavior. Because students were familiar with the token systems used by the teacher and there were already tangible items associated with the token economy of the school, it is possible that students found the tokens reinforcing and responded to token delivery instead of teacher praise. Future researchers should compare the use of tokens to teacher praise for improving student behavior. Future researchers should also work

to separate the effects of token use when investigating strategies to help teachers praise.

## **Conclusions**

This study used a simple training method to improve teacher praise to reprimand ratios. Similar to previous research (e.g., Beaman & Wheldall, 2000; Merrett & Wheldall, 1987; White, 1975), teachers in this study used more reprimands than praise for student social conduct during baseline. This reiterates the significant and prevalent problem of teachers using reprimands and other reactive measures to respond to inappropriate behavior. However, research shows that proactive measures, such as frequent teacher praise, are more effective for classroom management (Kern & Clemens, 2007; Sugai & Horner, 2002). In order to change teacher behavior from reactive measures to proactive measures, teacher training must be simple and effective. The intervention consisted of a teacher packet and consultation with the researcher in a brief meeting. With this simple training method, all five teachers began using a positive praise to reprimand ratio. This training method produced success like other studies using meetings to train teachers (e.g., Chalk & Bizo, 2004; Ferguson & Houghton, 1992; Swinson & Harrop, 2005), but by providing written material for the teacher to read prior to meeting, the amount of time spent in the meeting was reduced. In addition to effectively improving teacher praise to reprimand ratios, this study served as an experimental manipulation of praise to reprimand ratios and measured the effects of an increased ratio on student on-task behavior. Previous researchers (e.g., Cossairt et al., 1973; Ferguson & Houghton, 1992; Sutherland et al., 2000) have successfully improved student on-task behavior by increasing the frequency of praise toward specific behaviors or individuals. By targeting an improved praise to reprimand ratio without targeting specific behaviors or individuals, this study increased the overall on-task behavior of all five classrooms.

The current study expanded upon previous research by developing a simple and effective



method of changing teacher praise to improve student behavior. Unlike other research, this study targeted the teacher praise to reprimand ratio instead of simply increasing the frequency of praise. Teachers improved their praise to reprimand ratios and student on-task behavior improved in the classrooms. Future researchers should compare specific praise to reprimand ratios to determine if particular praise to reprimand ratios produce different results. Future researchers should also investigate how to assist teachers in maintaining change over time.

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Appendix A  
Experimental Studies Changing Teacher Praise

<i>Article</i>	<i>Teacher Training</i>	<i>Student Measures</i>
Abramowitz, O'Leary, & Rosen, 1987	Not described	Engagement, Academic
Acker & O'Leary, 1987	Feedback	Engagement, Academic
Andrews & Kozma, 1990	Audio cues, Feedback, Instructions	Engagement
Armstrong, McNeil, & Van Houten, 1988	Visual cues, Feedback, Meeting, Inservice workshop	Disruptive behaviors
Brodin, Bruce, Mitchell, Carter, & Hall, 1970	Meeting	Engagement
Chalk & Bizo, 2004	Self-monitoring, Meeting	Engagement, Academic
Cossairt, Hall, & Hopkins, 1973	Visual cues, Feedback, Meeting, Instructions	Engagement, Academic
Devlin-Scherer, Devlin-Scherer, Wright, Roger, & Meyers, 1997	Feedback, Meeting, Other	Engagement
Ferguson & Houghton, 1992	Meeting	Engagement
Gable & Shores, 1980	Not described	Academic

Appendix A continued

<i>Article</i>	<i>Teacher Training</i>	<i>Student Measures</i>
Hall, Lund, & Jackson, 1968	Visual cues	“Study” behavior
Hall, Panyan, Rabon, & Broden, 1968	Feedback, Meeting	“Study” behaviors
Hiralall & Martens, 1998	Feedback, Meeting, Instructions	Engagement
Horton, 1975	Self-monitoring, Video training	None reported
Houghton, Wheldall, Jukes, & Sharpe, 1990	Meeting, Video training	Engagement
Kalis, Vannest, & Parker, 2007	Self-monitoring, Instructions	Academic
Keller, Brady, & Taylor, 2005	Visual cues, Self-monitoring, Meeting	None reported
Kent & O’Leary 1976	Not described	Disruptive behaviors
Lannie & McCurdy, 2007	Feedback	Engagement, Disruptive behaviors
Madsen, Becker, & Thomas, 1968	Visual cues, Feedback, Meeting	Engagement, Disruptive behaviors
McAllister, Stachowiak, Baer, & Conderman, 1969	Not described	Disruptive behaviors

Appendix A continued

<i>Article</i>	<i>Teacher Training</i>	<i>Student Measures</i>
O'Leary, Kaufman, Kass, & Drabman, 1970	Instructions	Disruptive behaviors
Park, Singer, & Gibson, 2005	Not described	Academic, Task performance
Pfiffner, Rosen, & O'Leary, 1985	Not described	Engagement
Reinke, Lewis-Palmer, & Martin, 2007	Feedback	Disruptive behaviors
Rosen, O'Leary, Joyce, Conway, & Pfiffner, 1984	Instructions	Engagement
Slider, Noell, & Williams, 2006	Instructions, Video training	None reported
Sloat, Sharp, & Gallimore, 1977	Instructions, Feedback, Meeting, Video training	None reported
Stormont, Smith, & Lewis, 2007	Feedback, Meeting	Disruptive behaviors
Sutherland & Wehby, 2001	Self-monitoring, Meeting	Academic
Sutherland, Wehby, & Copeland, 2000	Feedback, Meeting	Engagement
Swinson & Harrop, 2005	Inservice workshop, Feedback	Engagement
Trolinder, Choi, & Proctor, 2004	Self-monitoring, Meeting	Engagement
Van Houten & Sullivan, 1975	Audio cues, Self-monitoring	None reported

Appendix A continued

<i>Article</i>	<i>Teacher Training</i>	<i>Student Measures</i>
Van Houten, Nau, MacKenzie-Keating, Sameoto, & Colavecchia, 1982	Audio cues	Disruptive behavior
Whitley & Sulzer, 1970	Meeting	Disruptive behaviors
Workman, Kindall, & Williams, 1980	Not described	Engagement, Disruptive behaviors



## Appendix C

### Definitions for Observation Codes for Mini-MOOSSES

#### **FREQUENCY CODES**

##### **STUDENT BEHAVIOR**

**bd CHILD DISRUPTIVE BEHAVIOR:** A general category of inappropriate behaviors including the inappropriate use of any materials and inappropriate verbal behaviors. Also includes refusals to comply to directions with arguing statements. Chatting during work time is also inappropriate verbal behavior if it is not task related. Code as one occurrence unless topography (what it looks like) changes or behavior ceased for **3s** or longer.

##### **EXAMPLES:**

A child is rocking in his/her chair, begins tapping pencil, and falls out of the chair. (bd, bd, bd)

Throwing or tossing material (but not at a person). (bd)

Making non-verbal noises (tapping an object, drumming on desk or stomping a foot). (bd)

Destroying property, such as a worksheet, or snapping a pencil. (bd)

Coloring desk, chair, clothes, etc. instead of paper (bd)

“No.” (bv)

“I don’t have to.” (bv)

“Make me.” (bv)

“I’m not going to do it.” (bv)

“This is stupid.” (bv)

Talk outs during instruction in large groups(unless teacher asks any student to respond or for a choral response.) (bv)

##### **NON-EXAMPLES:**

Throwing materials or other things at a person. Code as “bp”

Kneeling on chair.

During floor time when child is expected to be in a criss-cross seated position, the child is laying over on the floor. Code as “outofp.”

During floor time when child is expected to be in a criss-cross seated position, the child stands up without bending over with bottom up in the air. Code as “outofp.”

Answering questions without hand raising if permitted by the teacher. (ca)

Making obscene hand gestures at another person. (bp)

### **TEACHER BEHAVIOR**

**pr\_in/pr\_gr- TEACHER PRAISE (individual/to group)-** *Individual* praise is to the target

only. *Group* is inclusive of the target student, may be large or small groups and is praise **not** directed toward an individual.

\*\*\*\*\*This code is used for **current, ongoing behavior!**\*\*\*\*\*

**Teacher praise was defined as verbal statements, physical gestures, or tangibles that indicate approval of behavior over and above an evaluation of adequacy or**

**acknowledgement of a correct response.** Individual praises are to the target student only. Score praise for a verbal statement or physical gesture of intended reinforcement (hugs, pats) or tangibles (tokens, points) that indicate **approval of behavior over and above an evaluation of adequacy or acknowledgement of a correct response to a question.** This includes requests for children to give themselves a pat, high five, etc.

Tone of voice may also be indicative of praise *provided that the content can be clearly heard.* Long and detailed praise statements count as one episode, unless at least 3 seconds have passed between the end of one statement and the beginning of the next, *or*

*the content changes.*

**EXAMPLES: (can be combined with expressive gestures)**

“Good work, Yvonne!” (pr\_in)

“Billy, I like the way you did that!” (pr\_in)

“Your handwriting is improving!” (pr\_in)

“Everyone is sitting quietly, great!” (pr\_gr)

“David, since you are sitting quietly you may read first.” (pr\_in)

“Thank you for raising your hand first!” (pr\_in)

Good! (either pr\_gr/pr\_in) – context specific.

**NON-EXAMPLES:**

Thank you. – ignore **do not code.**

That’s correct. – ignore **do not code.**

I’ve got Johnny’s paper. – ignore **do not code.**

Right.– ignore **do not code.**

Everyone is sitting quietly.– ignore **do not code.**

Teacher looks at the target child and smiles.– ignore **do not code.**

**rep\_in/rep\_gr- TEACHER REPRIMAND (to individual/group)-**

*Indicators:* Reprimands occur *after* the behavior is occurring and is to correct or stop the behavior.

\*\*\*\*\*This code is used for current, ongoing behavior!\*\*\*\*\*

**Teacher reprimands were defined as verbal statements, physical gestures, or tangibles that indicate disapproval of behavior beyond feedback on an incorrect response.** Group reprimands include those to groups in the class. Verbal comments such



as scolding, negative statements about behavior with the intent to stop the student from misbehaving or gestures, used with the same intent as verbal only with gestures are considered reprimands. Verbal content must be able to be clearly distinguished. Tone will likely be stern or punitive, although reprimands can be delivered in a pleasant tone *and sometimes sound like precorrects* (SEE INDICATORS). Threats should also be counted as reprimands. Statements of negative consequences by the teacher are also included in this category. Code reprimand at the end of the first reprimand statement, and code them separately if at least 3 seconds have passed between the end of one reprimand and the beginning of the next. Statements are coded as reprimands when they are intended to correct behavior as it is occurring or after it has occurred.

**EXAMPLES:**

“Johnny, quit wasting time and get back to work.” (rep\_in)

“Start paying attention or your name is going on the board.” (rep\_in)

“Stop bothering Kim.” (rep\_in)

“I told you to sit down.” (rep\_gr/rep\_in) – context specific

Teacher raises her finger to her mouth to gesture to students to keep quiet. (rep\_gr)

Teacher asks Jane to “have a seat” when Jane gets out of her seat during independent seatwork.

(rep\_in)

“People are going to have to start bringing their pencils to school instead of taking them from me.” (rep\_gr)

“Are you awake?” (Student has eyes closed during lesson) (rep\_in)

Teacher takes pencil away from student who is playing with it and not following instructions.

(rep\_in)

“Your behavior at recess was inexcusable.” (rep\_gr/rep\_in) – context specific

“That’s 10 minutes off recess.” (rep\_gr/rep\_in) – context specific

“Go flip a card” (colored card system) (rep\_in)

“If you keep talking, you are going to lose your recess!” (rep\_gr/rep\_in) – context specific

### **NON-EXAMPLES:**

“Try harder on your math worksheet, I know you can do better.” – ignore **do not code**.

Students come back from lunch and the teacher asks them to “have a seat”. – ignore **do not code**.

“This is incorrect.” – ignore **do not code**.

“We’re getting ready for math. I want eyes and ears on me.” (precor\_gr)

Teacher looks at the target child and raises his/her eyebrows. – ignore **do not code**.

Teacher looks at the target child and frowns. – ignore **do not code**.

## **DURATION CODES**

### **STUDENT BEHAVIOR**

#### **On-task/Off-task (Engagement/Disengagement)**

**\*\*The general rule is: Is the student doing what they are supposed to be doing?**

**eng-** Student is appropriately working on the assigned/approved activity. Signs of this behavior include (a) attending to the material and the task, (b) making appropriate motor responses (writing, following rules of a game, looking at the teacher or student speaking), (c) asking for assistance (where appropriate) in an acceptable manner (e.g. raising hand), and (d) waiting appropriately for the teacher to begin or continue with instruction (staying quiet and staying in seat).

**deng-** Student is not participating in an approved/assigned activity. They are not attending to the material or task, making appropriate motor responses, asking for assistance in an

acceptable manner, or waiting appropriately for the teacher to begin or continue with instruction. Only score after the student has not been attending for 3 seconds.

**EXAMPLES: Target child (TC)**

TC has been asked by the teaching assistant to leave a teacher-led activity and come talk to her; this takes more than 3 seconds. (noncomp,deng)

TC is writing on an assigned workbook page. (eng)

TC gets up from seat and washes hands for 7 seconds (up without permission). (OutofP, deng)

TC is reading out loud with the class when directed to do so. (eng)

TC stares away from the teacher, student talking, or instructional materials for more than 3 seconds. (deng)

TC puts her head down on her desk for 3 seconds and then continues her work. (eng)

The teacher asks the students to stand up to stretch before an activity and the TC remains seated for more than 3 seconds. (noncomp,deng)

TC is currently disengaged. The teacher asks the class to follow along in the book and engage in choral responding. The TC is not engaging in choral reading with the class, but begins looking at the page and following along with his finger. (noncomp, eng)

TC has been out of the classroom, comes back into the classroom and takes 8 seconds to return to her desk (up without permission or is dawdling). (trans,deng, OutofP)

TC gets up to sharpen her pencil and returns to her work within 3 seconds (or is on the way back to her desk without dawdling). (OutofP, eng)

TC gets up to get a Kleenex and immediately returns to his seat. (Out ofP, eng)

TC goes to the teacher's desk to ask a question and then returns to her seat. (OutofP, eng)

TC looks out the window for less than 3 seconds and then returns to the task. (eng)

Appendix D

Mini-MOOSSES screenshot

The screenshot shows the MiniMoose Data Collector software interface. The window title is "Pocket\_PC" and the application name is "MiniMoose Data Col". The interface includes a menu bar (File, Zoom, Tools, Help), a status bar (8:46), and a recording path: "Recording into: \\My Documents\\Col...".

The main area contains a grid of buttons for recording data. The buttons are organized into several columns and rows. A "Timer" panel is visible on the right side of the main area, featuring "Start" (green), "Stop" (red), and "Fix" buttons, with a digital display showing "0".

Three callout boxes provide explanations for specific code categories:

- Frequency codes for teacher comments:** A callout points to the top-left section of the button grid, which includes codes like "comp", "noncomp", "ca", "na", "pr\_in", "pr\_gr", "rep\_in", "rep\_gr", "precor\_in", and "precor\_gr".
- Frequency codes for student disruptive behavior:** A callout points to the middle-right section of the button grid, which includes codes like "bd", "bv", "bp", "1on1", "ind", "small", and "large".
- Duration codes for student engagement:** A callout points to the bottom section of the button grid, which includes codes like "target1", "target2", "target3", "tatt", "patt", "outofp", "inpos", "deng", "eng", "tran", and "tranoff".

The bottom of the window features a "File Tools Help" menu and a keyboard icon.

Appendix E

Teacher Satisfaction Survey

Please circle your response to the following questions using this rating scale.

**1=Strongly Agree    2=Agree    3=Not Sure    4=Disagree    5=Strongly Disagree**

1. The 4:1 praise ratio reading packet was easy to understand.

**1                    2                    3                    4                    5**

2. The strategies provided in the 4:1 praise ratio reading packet were helpful.

**1                    2                    3                    4                    5**

3. It was easy for me to use a 4:1 praise ratio after reading the information provided in the 4:1 praise ratio reading packet.

**1                    2                    3                    4                    5**

4. The students' engagement increased with the use of a 4:1 praise ratio.

**1                    2                    3                    4                    5**

5. The students' disruptive behavior decreased with the use of a 4:1 praise ratio.

**1                    2                    3                    4                    5**

6. I would recommend the use of a 4:1 praise ratio to other teachers.

**1                    2                    3                    4                    5**

7. I will continue to use a 4:1 praise ratio in my classroom.

**1                    2                    3                    4                    5**

8. Overall, what did you like most about the 4:1 praise ratio?

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9. This training and the 4:1 praise ratio information would be better if . . .

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10. Any other comments or suggestions . . .

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## Appendix F

### Teacher Packet

#### **Rationale for Praise**

“Everyone does things because of the consequences of doing them. Every action we engage in results in some consequence. When our behavior results in a naturally occurring, desirable consequence, this experience motivates us to continue behaving that way.” (Alberto & Troutman, 2003, p. 282).

“Although many appropriate behaviors are maintained by naturally occurring reinforcers, this natural process may be insufficient to maintain all desirable behaviors. Teachers often find students for whom naturally occurring reinforcers currently fail to maintain appropriate behavior. . . . These students may find the laughter of other students more reinforcing than the teacher’s approval.” (Alberto & Troutman, 2003, p. 282).

“Reinforcement describes a relationship between two environmental events, a behavior (response) and an event or consequence that follows the response. The relationship is termed *reinforcement* only if the response increases or maintains its rate as a result of the consequence.” (Alberto & Troutman, 2003, p. 282).

“Praise is any verbal or non-verbal action by the teacher that indicates approval of or satisfaction with student behavior.” (Loveless, 1996, p. 59).

“A nice feature about teacher praise is that it does not take a lot of training, complex materials, forms or data collection prowess. In fact, of all the interventions available for classroom use by a teacher, praise is probably the least cumbersome. A basic requirement, however, is that the teacher be able to leave his/her desk or worktable and move around the classroom so that he/she is in a position to praise appropriate behavior and academic efforts as

they naturally occur.” (Loveless, 1996, p. 60).

“Reprimands should only be used when the reinforcement rate from teacher and classroom personnel exceeds the reprimand rate. This means that the number of praise statements should exceed the number of reprimands. A current guideline is about 4:1. For every one reprimand, there should be four praise statements. If the ratio is too low, the teacher must find more behaviors for which to praise students.” (Loveless, 1996, p. 61).

### **Summary of Rationale for 4:1 praise**

- Using a higher rate of praise than reprimands creates a more positive learning environment which is fundamental to the schools SW-PBS efforts.
- Research has shown that providing praise for appropriate behaviors can increase the rate of those behaviors.
- For those children that misbehave to gain teachers attention (even if negative), reprimands for inappropriate behavior may actually increase it or help maintain it.

### **Tips for Increasing Praise**

“There are four types of praise you will find helpful in managing your classroom. They are nearby praise, across-the-room praise, praise while helping [another student], and praise while teaching.” (Paine, Radicchi, Rosellini, Deutchman, & Darch, 1983, p. 48).

“There are four component skills involved in using your attention to improve students’ behavior: moving, scanning, praising, and following up on previous efforts to manage students’ behavior.” (Paine et al., 1983, p. 45-46):

**Moving** means simply moving slowly but steadily about the room while students perform independent seatwork activities. . . . Moving should be done in an unpredictable pattern. . . . The process of moving involves many stops as you pause to look at a



student's work, answer a question, or help a student momentarily with a difficult task. But these pauses should be brief, or other students in the room may stop working when they feel your attention is focused elsewhere.

**Scanning** goes hand in hand with moving and stopping, and it sets the stage for the next skill – praising students who are doing well. To scan, simply look around the room at various student while you are moving – and glance around the room when you stop. It keeps you continuously aware of what any student in the class is doing at a given time and gives you an instant impression of how the class as a whole is behaving.

Skillful **praising** is the essence of using your attention effectively to manage student behavior. It involves noticing when students are doing well; calling out their names publicly or speaking to them privately (whichever is most appropriate to their age and ability level); and describing clearly, but briefly, the behavior you want to encourage.

Sometimes you can praise one or two student in order to communicate indirectly to another student to return to work. . . .[The] practice of watching students to catch them working, then praising them for their behavior is what we refer to as **following up** on the indirect communication to return to work (Paine et al., 1983, p. 45-46).

### **Summary of Tips for Increasing Praise / Reminders to Praise**

- Praise the good behavior of one child when you see problem behavior in another child.
- Carry tokens or tickets and deliver them to students with each praise statement.
- Keep tickets equal to your goal number of praise statements and try to unload all of them.
- Put up signs around the classroom prompting you to praise students.
- Transfer marbles from one jar (or pocket) to another for each praise statement.
- Set a timer for a couple of minutes and praise every time the timer sounds.

## **Best Practices in Delivering Praise**

“The I-FEED-V rules apply when delivering praise.” (Loveless, 1996, p. 60-61).

“I stands for immediately.”

“F stands for frequently reinforcing the student.”

“The first E stands for enthusiasm.”

“The second E stands for eye contact.”

“D stands for describe the behavior.”

“V stands for variety.”

“Good praise follows the if-then rule. The if-then rule states that if the student is doing something you want to encourage . . . then (and only then) you should praise the student for it.” (Paine et al., 1983, p. 46).

“Good praise often includes students’ names. With younger students, you can often get considerable efficiency out of your attention by praising publicly. This means praising out loud or calling out praise statements to students who are some distance away from you. . . . With older students, especially those in the intermediate grades, public praise sometimes will not work. . . . Instead, praise students privately by speaking softly or whispering to the student when you are nearby.” (Paine et al., 1983, p. 47).

“Good praise is descriptive. . . . Descriptive comments simply describe what the student is doing at any given time – focusing on actions – and use words like “did” and other action verbs.” (Paine et al., 1983, p. 47).

“Good praise is convincing. Good praise convinces the student that you really mean what you say. When praising younger students, try to sound enthusiastic; put expression into your voice and vary your tone rather than using a flat or monotone voice. However, with older

students – perhaps beginning with second or third graders – enthusiastic praise begins to sound artificial or “gushy”. For this age group, you will need to convince students of your sincerity in other ways. Moderate your tone to convey that you are impressed with their work, but make your praise more subtle than you would with younger students. (Paine et al., 1983, p. 47-48).

“Good praise is varied. To avoid having your praise statement become empty, tiresome, and ineffective, vary them by praising different students for different things, depending on what they most need encouragement for.” (Paine Paine et al., 1983, p. 48).

“Good praise is nondisruptive. If you find that your public praise seems disruptive to students the first few days that you start using it, you should not be concerned. Initially, students might look up from their work at you, look at the student being praised, or giggle when you praise out loud. If the praise continues to disrupt students after a week of trying the procedures, however, you can simply tell the students that sometimes you will be talking out loud when they are working, and that when you do so, they should continue to work unless you are talking specifically to them or to the whole class. You can also praise students who do not look up, look around, or giggle when you praise others.” (Paine et al., 1983, p. 48).

### **Summary of Best Practices in Praise**

- *Praise in public, correct/reprimand in private.* Studies have shown that people prefer to receive criticism in private but are proud to be praised publicly. NOTE: Occasionally, some students shy away from public praise. Praise these students privately instead and consider pairing with incentives such as privileges (at least initially).
- *Praise immediately.* The closer in time praise is to the behavior, the greater the impact of praise on that behavior. Try to catch students being good.
- *Praise frequently.* New skills are acquired and appropriate behaviors are shaped up more

quickly with frequent praise than with less frequent praise.

- *Praise only when it's earned.* People tend to dismiss praise if it is delivered when it is unearned.
- *Praise the behavior.* When possible, specifically describe what behavior you are praising. This lets the student being praised and other students know what behaviors meet with your approval.

### **Examples**

“In one actual classroom situation, a teacher tried to keep her students under control by reprimanding them when they misbehaved. Like most children, these students valued the teacher’s attention, even though it was mostly negative, and were willing to do whatever was necessary to have her notice them. Since she only paid attention when they misbehaved or broke the rules, they began acting up and breaking the rules more often. The more they misbehaved, the more she paid attention to them; and the more she paid attention to them, the more they acted up. They were caught in an endless negative cycle. Finally, someone else observed what was happening and suggested that the teacher redirect her attention, providing it for positive, rather than negative, behavior. The change worked wonders. It took time for the students to realize what was required of them to receive the teacher’s attention, but the teacher was persistent – and eventually successful. She ignored mild acting up which seemed to be done just to get her attention, dealt with more troublesome misbehavior by temporarily suspending certain classroom privileges for the violators, and most importantly, gave students considerable attention for following the rules, working accurately, and completing assignments.” (Paine et al., 1983, p. 43).

### **Other Examples/Ideas**

- *Fill each child's bucket.* Imagine that each student has a bucket that can be filled by

positive interactions and emptied by negative interactions. Try to keep every bucket full by praising 4 times more than reprimanding.

- *The sandwich technique.* When you have to give corrective feedback, begin by praising something you like. Then, describe what needs to be changed. Finally, end by praising another behavior you like. Or, if more appropriate at the time, find another student to praise, reprimand the student with problem behavior, and then either praise for corrected behavior or praise another student for appropriate behavior.

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## Figure Captions

*Figure 1.* Ms. W. Percent Praise, Frequency, and Classroom On-task Behavior

*Figure 2.* Ms. T. Percent Praise, Frequency, and Classroom On-task Behavior

*Figure 3.* Ms. C. Percent Praise, Frequency, and Classroom On-task Behavior

*Figure 4.* Ms. G. Percent Praise, Frequency, and Classroom On-task Behavior

*Figure 5.* Ms. P. Percent Praise, Frequency, and Classroom On-task Behavior

Figure 1

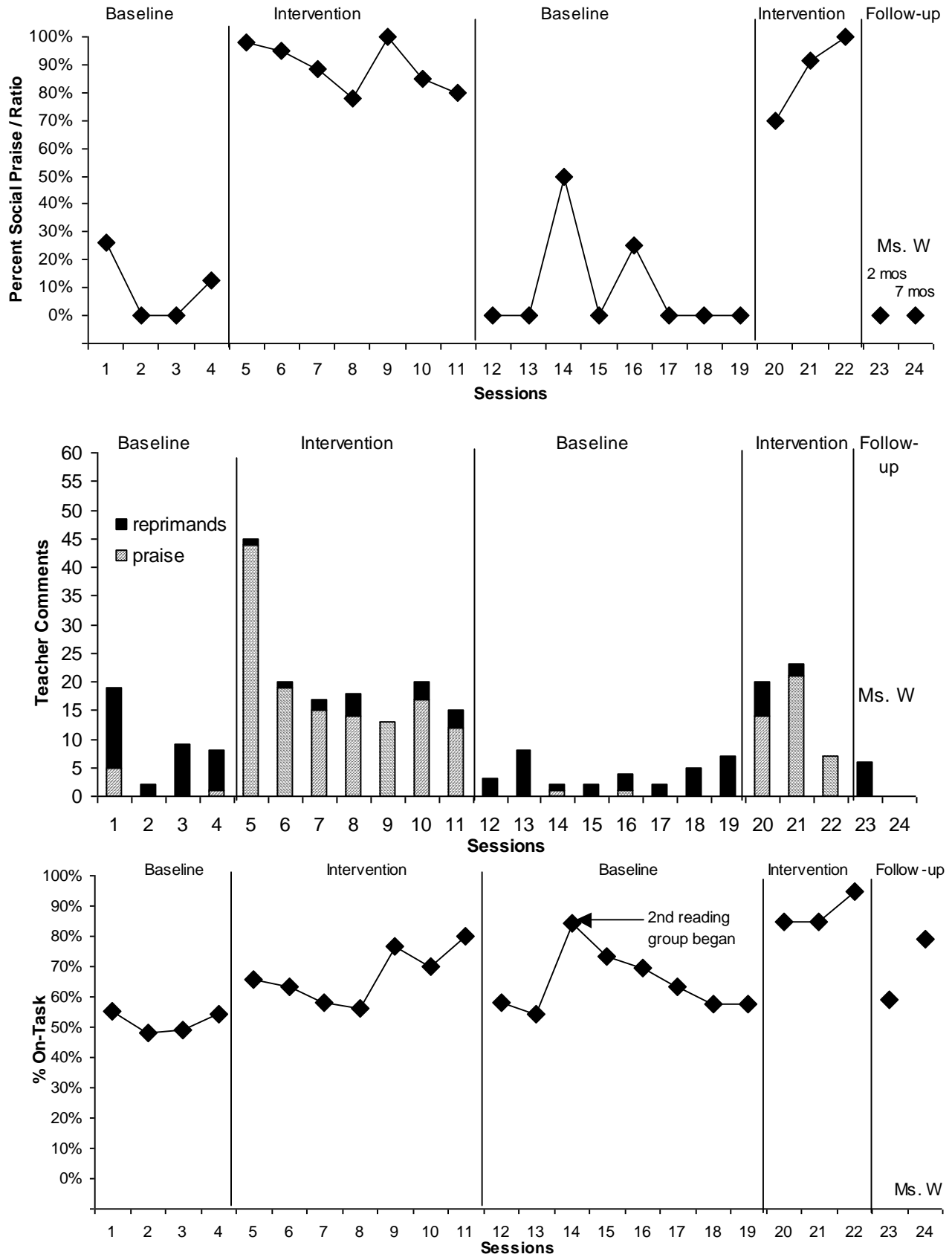


Figure 2

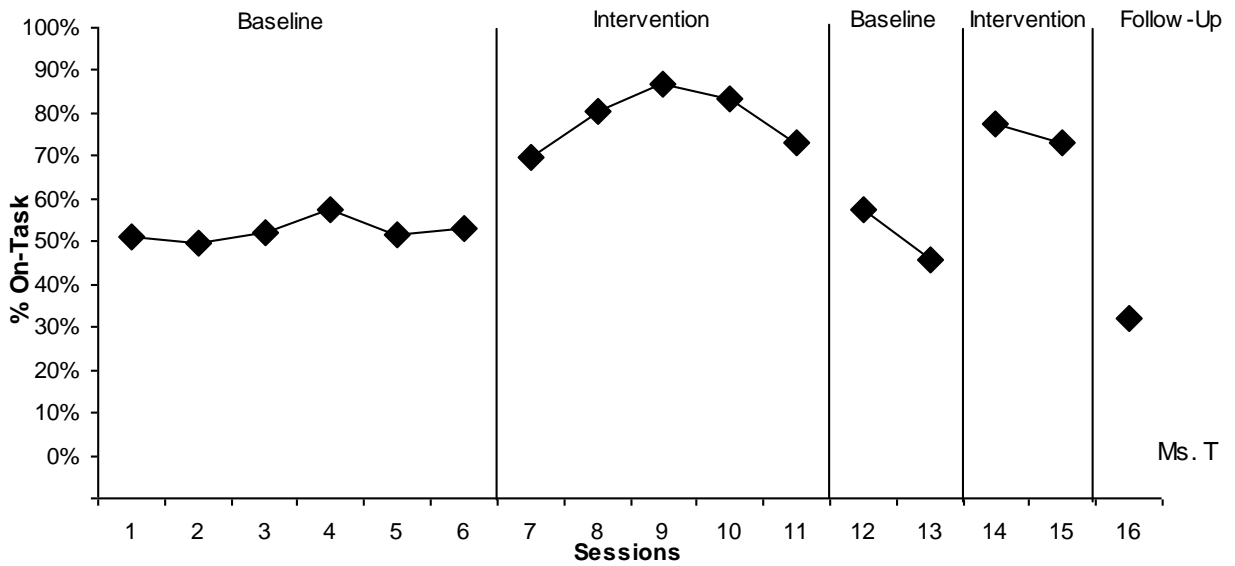
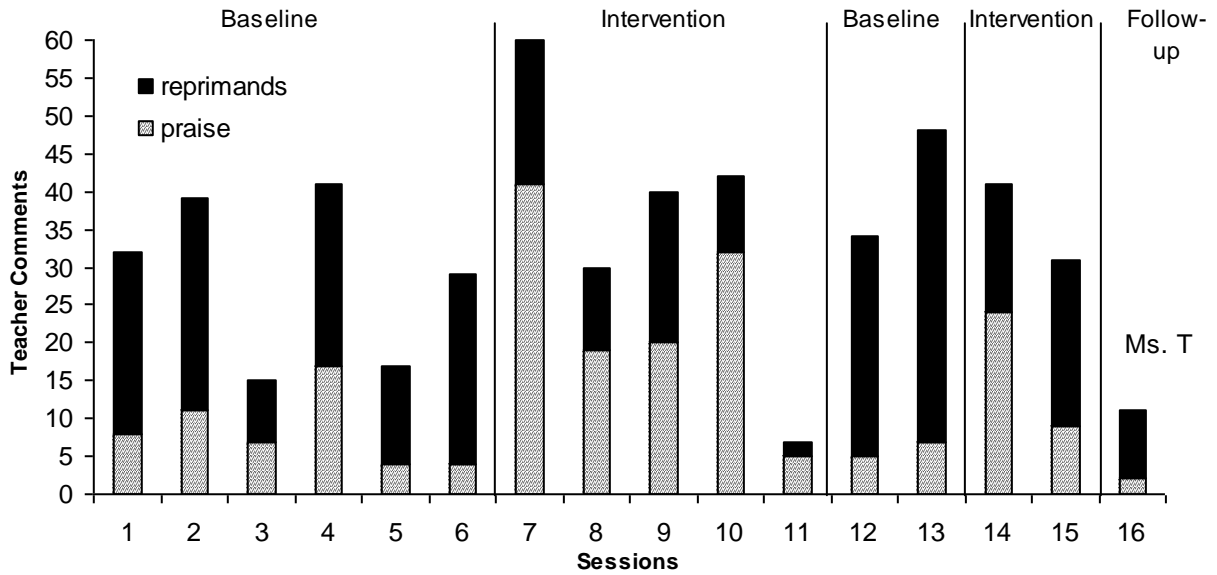
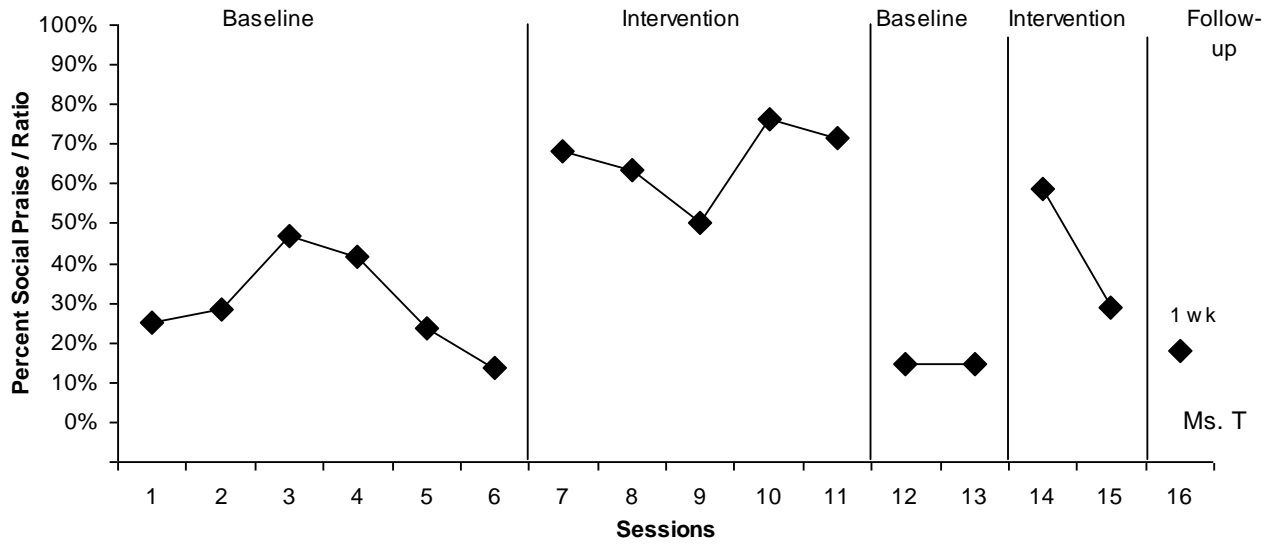




Figure 3

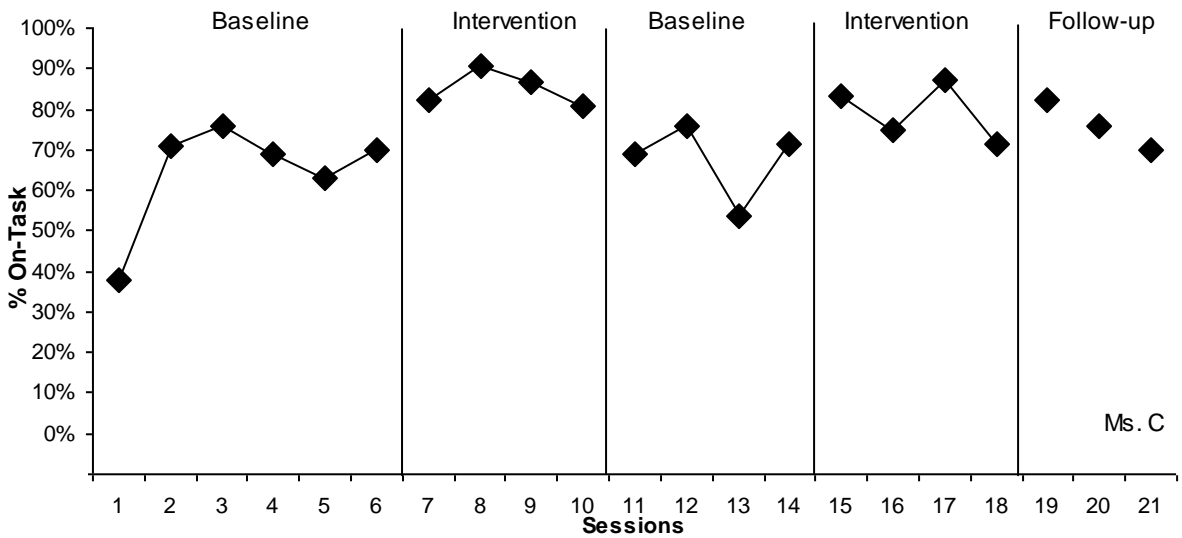
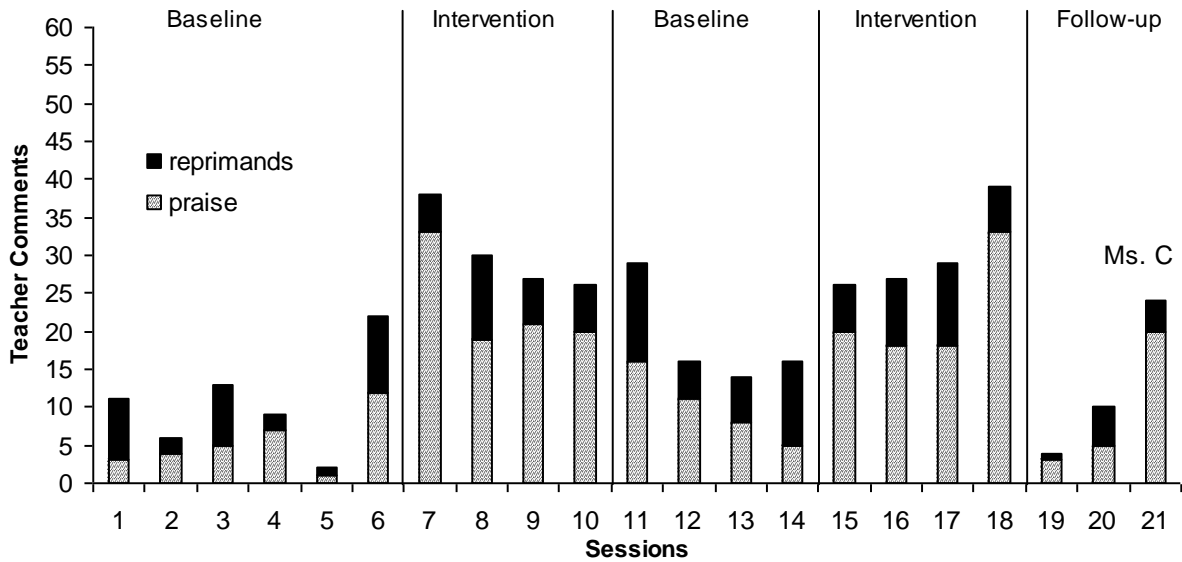
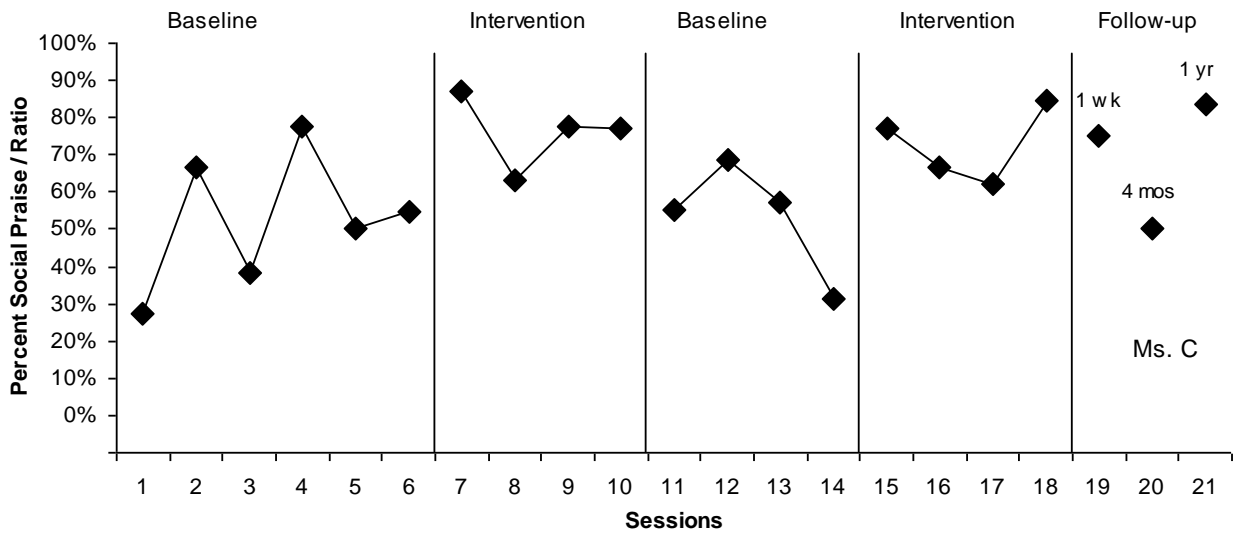


Figure 4

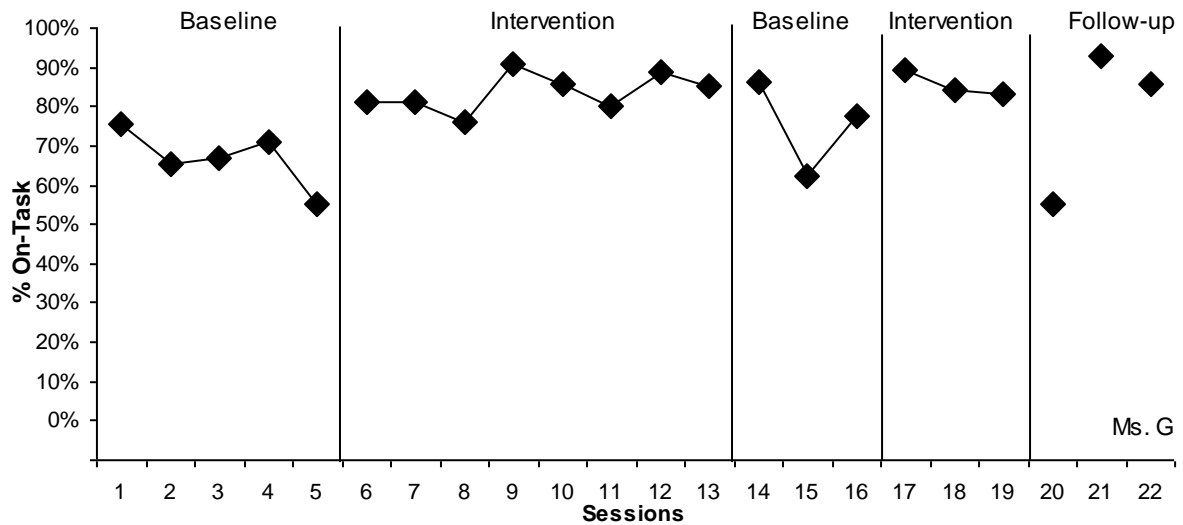
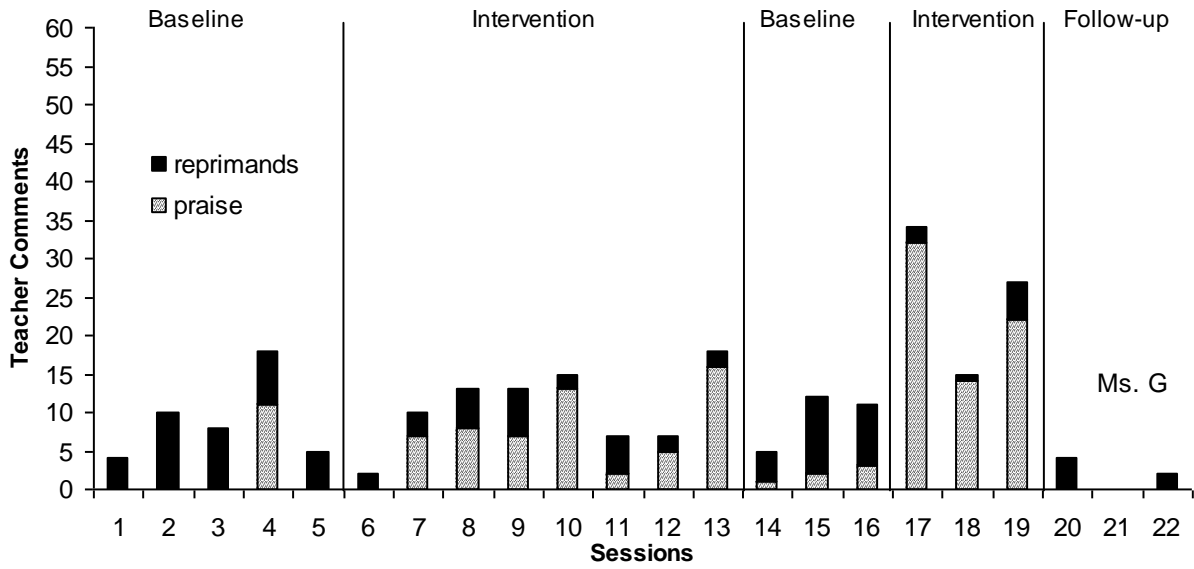
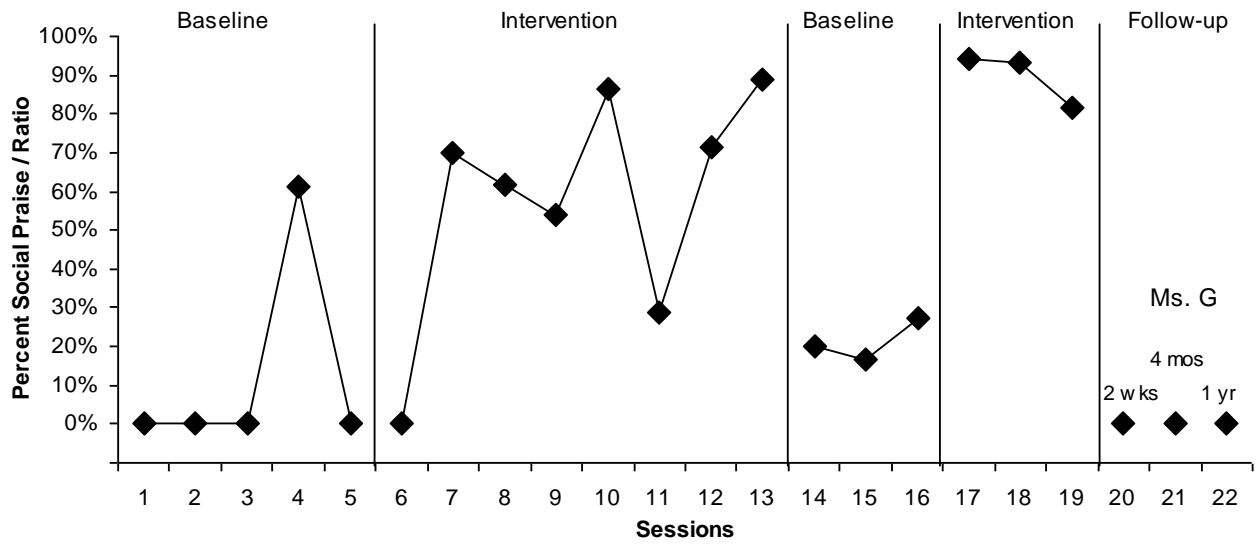


Figure 5

