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Comparing the Effects of Two Rates of Specific Praise on Student Behavior

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The relationship between classroom behavior and academic achievement is well established in the literature. Specific praise is an evidence-based classroom management strategy that has been shown to increase appropriate behavior and decrease inappropriate behavior. It is recommended that teachers use specific praise in the classroom; however, researchers have not identified the optimal rate at which this praise should be delivered. The purpose of this study was to compare the effects of two systematically manipulated rates of specific praise on the disruptive behavior and on-task behavior of elementary school students. An alternating treatments design, embedded within a multiple-baseline across participants, was utilized and teachers received tactile prompts from a programmed watch to deliver praise at the specified rates of 0.40 and 0.80 specific praise statements per minute. Results indicate that there were no meaningful differences in levels of student behavior under the two systematically manipulated rates implemented during intervention; however, meaningful improvements in both disruptive behavior and on-task behavior were observed from baseline to intervention. Teachers also found both intervention rates to be feasible and acceptable. Preliminary considerations on the relationships between the level of specific praise and student outcomes and increases in specific praise and classroom climate are also presented, along with a discussion of limitations of the study and implications for practice and research.

Keywords: academic achievement, specific praise, on-task behavior, disruptive behavior

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Comparing the Effects of Two Rates of Specific Praise on Student Behavior

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Table of Contents

Chapter I: Introduction

The passage of the 6th reauthorization of the *Elementary and Secondary School Education Act* (ESEA), more commonly referred to as the *No Child Left Behind Act of 2001*, challenged educators to increase the academic achievement levels of all students in the United States, with special emphasis on students who are from disadvantaged and culturally diverse backgrounds (No Child Left Behind [NCLB], 2002). Academic achievement was measured by student performance on standardized academic assessments under this law, and test results were directly tied to federal funding for K-12 education (NCLB, 2002). Therefore, these standardized assessments were used to evaluate how much progress teachers, schools, districts, and states made toward meeting NCLB's challenge, and high-stakes decisions were made accordingly (NCLB, 2002). For example, test results influenced decisions about supplemental educational services provided by schools and districts and annual evaluations of individual teacher effectiveness (Connecticut State Department of Education, 2014a; U.S. Department of Education, 2013).

The 7th and current reauthorization of ESEA, known as the *Every Student Succeeds Act* (ESSA), was signed into law on December 10, 2015, officially supplanting NCLB (U.S. Department of Education, 2015). The National Education Association has characterized ESSA as a law that recognizes the roles of national, state, and local governments in determining educational policy while softening many of the testing mandates in NCLB (Walker, 2015). However, even with its increased flexibility, ESSA continues to emphasize and hold educators accountable for student achievement, as measured by assessment data and documented progress toward meeting learning standards (ESSA, 2015; U.S. Department of Education, 2015).

As this era of accountability has developed over the last two decades and continues to evolve, state governments and educators are approaching the task of increasing student achievement in a variety of ways. As of the 2014-2015 school year, 43 states had adopted the Common Core State Standards, which were developed by the Council of Chief State School Officers and the National Governors Association Center for Best Practices to clearly outline what students are expected to know and do by the end of their K-12 education (Common Core State Standards Initiative, 2015). In the 2013-2014 school year, enrollment in charter schools in the state of Connecticut increased 10% over the previous school year, and many of these schools emphasize science, technology, engineering, and math (STEM) instruction (Connecticut State Department of Education, 2014b). Since 2006, 21 schools in Massachusetts have added 300 instructional hours a year to their schedules as a part of the Massachusetts 2020 Expanded Learning Time Initiative, launched to improve student achievement levels across all core academic subjects (Massachusetts 2020, 2014).

Although the merits of these approaches and others are worthy of debate, they are each largely based on one very important presumption: that students are engaged in classroom instruction when they are in school. However, as many as one out of three students struggles with engagement during instruction due to his or her own behavior (Epstein, Atkins, Cullinan, Kutash, & Weaver, 2008). Therefore, the management of student behavior in the classroom may be critical for meeting increasingly more rigorous standards for academic achievement.

Research has identified many evidence-based practices to manage student behavior in the classroom (Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008). Of these evidence-based practices, one of the most efficient is the use of specific praise, which is a statement made by a teacher to indicate approval of a specific social behavior (Epstein et al., 2008; Lane, Menzies,

Bruhm, & Crnobori, 2011; Simonsen et al., 2008). It is recommended that teachers increase the frequency with which they deliver specific praise statements in the classroom to encourage appropriate behavior from students (Alberto & Troutman, 2009; Pisacreta, Tincani, Connell, & Axelrod, 2011; Reinke, Herman, & Sprick, 2011), and this recommendation is based on (a) research that shows naturally occurring rates of specific praise are low (Beaman & Wheldall, 2000; Reinke, Herman, & Stormont, 2013; White 1975) and (b) teachers' continued need for effective classroom management skills (Coalition for Psychology in Schools and Education, 2006; National Center for Education Statistics, 2007-2008).

Statement of the Problem

Under current federal legislation, educators are tasked with the challenge of helping all students in the United States meet rigorous learning standards, as measured by standardized academic assessment results (ESSA, 2015). Since 2002, when this challenge was first levied through NCLB, states have taken multiple and varying approaches to raise the academic achievement levels of their students; however, managing behavior in the classroom is a necessary prerequisite for initiatives focused on academic instruction (Epstein et al., 2008). Specific praise is an efficient and effective strategy for managing behavior in the classroom, and research suggests that teachers increase their use of specific praise to acknowledge and reinforce appropriate behavior in the classroom (Alberto & Troutman, 2009; Epstein et al., 2008; Pisacreta et al., 2011; Simonsen et al., 2008). Unfortunately, research has yet to identify the optimal rate per minute to which teachers should increase their delivery of specific praise (Scott, Alter, & Hirn, 2011; Stichter et al., 2009; Sutherland et al., 2000). This study was developed as an initial step toward addressing this gap in the classroom management literature.

Chapter II: Review of the Literature

There is a clear, positive association between student behavior in the classroom and student academic achievement, particularly related to on-task and disruptive behavior (Cobb 1972; Feshbach & Feshbach, 1987; Green, Forehand, Beck, & Vosk, 1980; Horn & Packard, 1985; McKinney, Mason, Perkerson, & Clifford, 1975; Soli & Devine, 1976). Fortunately, teachers can employ a variety of organizational, instructional, and behavioral strategies to promote appropriate behavior and prevent or respond to inappropriate behavior in the classroom (Arbuckle & Little, 2004; Emmer & Stough, 2001; Oliver, Wehby, & Reschly, 2011). Research has identified five broad critical features of classroom management strategies, as well as specific evidence-based practices; one of these practices is specific praise (Simonsen et al., 2008). The functional relationship between specific praise and behavior, which is based on the principles of reinforcement, was established in the 1960s and early 1970s (e.g., Madsen, Becker, & Thomas; 1968; Hall et al., 1971; Hall, Lund, & Jackson, 1968) and more recent research has focused on the empirical validation of specific praise as well as the development of strategies to promote teachers' implementation of specific praise (e.g., Ferguson & Houghton, 1992; Kalis, Vannest, & Parker, 2007; Myers, Simonsen, & Sugai, 2011; Stormont, Smith, & Lewis, 2007). Altogether, this vast body of literature has yielded the universal recommendation that teachers should increase their use of specific praise to manage student behavior in the classroom. However, there is no consensus in the literature as to the optimal rate at which specific praise should be delivered, as intervention studies have achieved desired student outcomes with a variety of different rates (Allday et al., 2012; Dufrene, Lestremau, and Zoder-Martell, 2014; Sutherland et al., 2000). Researchers continue to identify the experimental manipulation of specific praise as an area for future research (Scott et al., 2011; Stichter et al., 2009; Sutherland et al., 2000).

Academic Achievement and Behavior

The relationship between classroom behavior and academic achievement has been of interest to researchers for many decades, and although the research has been largely correlational in nature, the consistency of the results from study to study and over time is impactful (Alexander, Entwisle, & Dauber, 1993; Hoge & Luce, 1979; Horn & Packard, 1985; Wentzel, 1991). Generally, elementary school students who are on-task (Horn & Packard, 1985; McKinney et al., 1975) and not disruptive (Cobb 1972; Feshbach & Feshbach, 1987; Green et al., 1980; McKinney et al., 1975; Soli & Devine, 1976) perform better on traditional measures of academic achievement.

On-task behavior. A recent national survey of teachers found that attention to instruction was one of the most common behavior problems in elementary school classrooms (Harrison, Vannest, Davis, & Reynolds, 2012). Teachers were asked to rate the behavior of more than 3,500 children and adolescents in 40 states using the *Behavior Assessment System for Children, Second Edition* (BASC-2) and they reported that 20% of students were often generally distracted, 18% were often distracted from tasks, 46% were sometimes distracted during lectures, and 14% often demonstrated a lack of concentration or short attention span (Harrison et al., 2012). These findings are concerning given the strong relationship between academic achievement and on-task behavior, also often referred to as attentive behavior or academic engagement. On-task behavior has been defined as "actively or passively participating in the classroom activity (e.g., writing, raising hand, answering a question, talking about a lesson, listening to the teacher, reading silently, or looking at instructional materials)" (Chafouleas, Sanetti, Kilgus, & Maggin, 2012, p. 495).

A number of studies in the late 1960s and 1970s found attention to instructional activities was positively associated with academic achievement (e.g., Cobb, 1972; Lahaderne, 1968). Horn and Packard (1985) reviewed many of these studies related to the development of learning disabilities and they found that teacher ratings of student attention levels were highly correlated with reading achievement. Further, Soli and Devine (1976) and Wasson, Beare, and Wasson (1990) found that students who were classified as high-achievers attended to instruction more consistently than those classified as low-achievers.

Research has also determined that the relationship between attention and achievement is more than correlational in nature. In 1975, McKinney et al. found that observed distractibility in the fall of second grade was a significant predictor of academic achievement that spring. A longitudinal study found that teacher ratings of attention and restlessness in first grade were predictive of those students' standardized academic assessment scores and report card grades over the next four years (Alexander et al., 1993). Further, Claessens and Dowsett (2014) found that problems with attention in kindergarten were associated with lower achievement levels in math and reading in third grade, and a longitudinal study found that attention levels at age 6 were a significant predictor of achievement levels at age 17 (Breslau et al., 2009).

Disruptive behavior. Disruptive behavior was also identified as one of the most common problem behaviors in elementary school in the survey published by Harrison and colleagues (2012). Chafouleas et al. (2012) define disruptive behavior as "a student action that interrupts regular school or classroom activity" (p. 495). Teachers surveyed by Harrison et al. (2012) reported actions such actions as talking, talking loudly, and misbehaving when attending to others to be disruptive. These survey results are consistent with research showing an inverse

relationship between disruptive behavior and academic engagement (Haskins, Walden, & Ramey, 1983; Vitaro, Brendgen, Larose, & Tremblay, 2005).

A negative correlation has been found between academic achievement and specific types of disruptive behavior in elementary school including out of seat behavior (Cobb, 1972), restlessness (i.e., fidgeting, out of seat; Alexander et al., 1993), playing when play is prohibited (Soli & Devine, 1976), and verbal and physical aggression (McKinney et al., 1975). More generally, Haskins et al. (1983) found that students in low-ability groups engaged in more disruptive behavior than their peers in high-ability groups and Tremblay et al. (1992) found that peer- and self-ratings of disruptive behavior in first grade were highly correlated with achievement in first grade and fourth grade. The negative long-term educational outcomes for students who demonstrate more severe disruptive behavior at a young age, including delinquency and school drop-out, have also been well-documented (e.g., Fergusson & Horwood, 1998; Vitaro et al., 2005).

The impact disruptive behavior has on student achievement can also be considered more complex than other behaviors because disruptive behavior often demands the immediate attention of the teacher, leading to the interruption of instruction (Finn, Pannozzo, & Voelkl, 1995). In fact, a survey of American Federation of Teachers members revealed that 19% of teachers lose 2-3 hours of instructional time each week due to disruptive behavior (Walker, Ramsey, & Gresham, 2003/2004). A loss of this magnitude will necessarily impede the academic development of all students in the class (Epstein et al., 2008).

Classroom Management Strategies

Classroom management has been defined as “the provisions and procedures necessary to establish and maintain an environment in which instruction and learning can occur” (Duke, 1979,

p. xii). These provisions and procedures include the teacher's implementation of organizational, instructional, and behavioral strategies designed to both prevent and, when necessary, respond to problem behavior (Brophy 1983; Reinke et al., 2011). When such strategies are implemented, decreases in the frequency and severity of problem behaviors, such as distractibility and disruptive behavior, will likely be observed in addition to improvements in academic achievement and associated student behaviors (Arbuckle & Little, 2004; Emmer & Stough, 2001; Oliver et al., 2011).

Effective classroom management strategies developed out of early research on the correlation between teacher behavior and student behavior (Emmer & Stough, 2001; Kounin, Friesen, & Norton, 1966; Kounin & Obradovik, 1967) and later, the empirical validation of specific strategies (Simonsen et al., 2008). In 2008, Simonsen and colleagues conducted a review of this vast body of research and identified 20 evidence-based practices within five "critical features" (p. 353) of classroom management: (a) maximize structure and predictability; (b) post, teach, review, monitor, and reinforce expectations; (c) actively engage students in observable ways; (d) use a continuum of strategies to acknowledge appropriate behavior; and (e) use a continuum of strategies to respond to inappropriate behavior. A recent technical assistance document published by the U.S. Office of Special Education Programs expands on these critical features (Simonsen et al., 2015). It suggests teachers first create a foundation for appropriate student behavior by effectively designing the physical environment of the classroom; developing and teaching predictable classroom routines; and posting, defining, and teaching three to five positive classroom expectations (Simonsen et al., 2015). Then, teachers should use preventative practices (i.e., actively supervising students, providing opportunities to respond, acknowledging appropriate student behavior, and providing prompts and precorrections), as well as responsive

strategies when necessary (i.e., providing error corrections and using other contextually relevant strategies; Simonsen et al., 2015). One evidence-based practice that can be used as a part of the continuum to acknowledge appropriate behavior (Simonsen et al., 2008) or as a preventative practice (Simonsen et al., 2015) is specific praise. In fact, specific praise has been cited as "a highly efficient, effective strategy for shaping student behavior" (Lane et al., 2011, p. 80) and is recommended in numerous publications on classroom management, including the influential Institute of Education Sciences Practice Guide, titled *Reducing Behavior Problems in the Elementary School Classroom* (Epstein et al., 2008).

Specific Praise

Specific praise is "a positive statement, typically provided by the teacher, when a desired behavior occurs…to inform students specifically what they did well" (Simonsen et al., 2008, p. 362). A functional relationship between teacher praise and student behavior was established by the beginning of the 1970s (Sutherland et al., 2000), but early research found praise was more effective in managing student behavior when it specified the appropriate behavior of the student (Brophy, 1981, 1983). Since the publication of Brophy's seminal pieces on praise in 1981 and 1983, specific praise has been preferred over non-specific or general praise (Reinke et al., 2011).

Specific praise can be delivered to individual students, small groups of students, or an entire class (Sutherland et al., 2000). Examples of praise statements for individual students include: "Lisa, that is a wonderful example of how to enter a group" (Sutherland et al., 2000, p. 4); "Margaret, thank you for raising your hand to speak" (Allday et al., 2012, p. 88); and "Wow, you did a great job finding your square and sitting down" (Fullerton, Conroy, & Correa, 2009, p. 124). Examples of praise statements for small and large groups of students include: "I love the way you two are working together" (Sutherland et al., 2000, p. 4); "Everyone is really on-task in

reading today" (Gable, Hester, Rock, & Hughes, 2009); and "Gators, you are all doing a good job picking up the toys" (Hester, Hendrickson, & Gable, 2009, p. 519). Whenever possible, praise statements should include the student's name or another identifying feature (e.g., table number, mascot name) to ensure students are aware their behavior is being acknowledged (Hester et al., 2009; Lane et al., 2011).

In addition to its nature of specificity, other aspects of teachers' delivery of specific praise have been shown to moderate its effectiveness in changing student behavior (Conroy, Sutherland, Snyder, Al-Hendawi, & Vo, 2009; Lane et al., 2011). These aspects include (a) contingency, (b) immediacy, and (c) sincerity. More specifically, praise statements should be delivered immediately after the performance of an appropriate behavior, and only after the performance of an appropriate behavior (Brophy, 1983; Hester et al., 2009). Additionally, the tone and content of the specific praise should match the chronological and/or developmental age of the students and the types of statements used should vary (Conroy et al., 2009; Hester at al., 2009). In the literature, these aspects of specific praise delivery have been referred to as guidelines (Brophy, 1983), critical factors (Hester et al., 2009), essential characteristics (Conroy et al., 2009), and indicators of quality of a teacher's specific praise (Brophy, 1981).

Function of specific praise. The use of praise as a classroom management strategy is rooted in the practice of applied behavior analysis (Brophy, 1983), which is "a scientific approach for discovering environmental variables that reliably influence socially significant behavior" (Cooper, Heron, & Heward, 2007, p. 3). Broadly, praise is an environmental variable, student behaviors in the classroom are socially significant, and principles of reinforcement explain the influence one has over the other: For most students, praise serves to positively reinforce appropriate behavior when (a) it is delivered contingently and (b) occurrences of the

appropriate behavior increase following the praise (Alberto & Troutman, 2009). However, general and specific praise do not have the same reinforcement value, as specific praise differentially reinforces student behavior (Alberto & Troutman, 2009).

Differential reinforcement involves providing reinforcement for one behavior while withholding reinforcement for another behavior (Cooper et al., 2007). For example, telling a student, "I appreciate the way you raised your hand and waited for me to call on you," reinforces hand-raising behavior and withholds reinforcement for calling out. This is why specific praise is more advantageous than general praise. General praise can be delivered contingently, but the recipient will never know exactly what behavior earned positive attention from the teacher (Brophy, 1983; Stevens, Sidener, Reeve, & Sidener, 2011; Stichter et al., 2009). Therefore, teachers who use specific praise not only acknowledge appropriate behavior but also differentially reinforce behavior (i.e., they increase the likelihood of appropriate behavior being displayed in their classrooms in the future and decrease the likelihood of other inappropriate behavior being displayed in their classrooms in the future; Cooper et al., 2007).

However, attention has been drawn to the erroneous presumption that praise functions as a reinforcer for appropriate behavior at all times (Brophy, 1981). By definition, a stimulus presented contingent on the occurrence of a behavior is only reinforcing if the future frequency of the behavior increases (Cooper et al., 2007). Although the use of praise is a highly researched strategy, its effectiveness might be moderated by individual student learning history or the function of a student's appropriate behavior (Lane et al., 2011). For example, if students engage in appropriate behavior to escape teacher attention, providing specific praise may be aversive to the students (Lane et al., 2011). Therefore, teachers should actively monitor student behavior following the delivery of specific praise statements to determine the effect their praise has on the

behavior of an individual or group of students (i.e., whether instances of appropriate behavior increase or decrease in the future; Hester et al., 2009; Gable et al., 2009; Lane et al., 2011).

Additionally, researchers and educators have raised concerns about the use of external reinforcers in schools, including social reinforcement such as verbal praise (Epstein et al., 2008). Studies on general positive reinforcement have recently been reviewed and, "no detrimental effect was found with the use of external reinforcers in educational settings," (Epstein et al., 2008, p. 30) although the debate about how to appropriately utilize external reinforcers in schools is still ongoing (Cameron, Banko, & Pierce, 2001). With regard to verbal praise, a type of external reinforcement, the results are more conclusive. Praise has no deleterious effect on intrinsic motivation (Akin-Little, Eckert, Lovett, & Little, 2004; Cameron et al., 2001; Cameron & Pierce, 1994), and may even have a positive effect on intrinsic motivation (Cameron & Pierce, 1994). In their extensive review of external reinforcement research, Akin-Little et al. (2004) made the following summative statement: "The assertion that verbal praise should not be utilized in a classroom setting [due to its effect on student motivation] is in direct opposition to the available data" (p. 356).

Relationship between Specific Praise and Student Behavior

Early research. As previously stated, a functional relationship between praise and student behavior was established by the middle of the 1970s (Sutherland et al., 2000). The use of praise as an intervention first appeared in the literature a century ago (Gilchrist, 1916), but the practice did not garner much attention until a series of studies published in the late 1960s and 1970s, mainly in the *Journal of Applied Behavior Analysis* (Beaman & Wheldall, 2000). Early research found contingent teacher attention and praise could be used to both increase appropriate behavior and decrease inappropriate behavior in elementary school classrooms.

Hall et al. (1968) measured the effect of contingent teacher attention (i.e., verbal praise and proximity) on study behavior and Broden, Bruce, Mitchell, Carter, and Hall (1970) on attending behavior; results from both studies showed substantial increases in these appropriate behaviors, with levels more than doubling from baseline to intervention. Praise of appropriate behavior was also found to decrease a variety of disruptive behaviors, including gross motor activities (e.g., getting out of seat, moving chair; Thomas, Becker, & Armstrong, 1968), disturbing others (e.g., grabbing objects or work, hitting; Becker, Madsen, Arnold, & Thomas, 1967), and disobeying (Ward & Baker, 1968). In a series of five cases studies, Hall et al. (1971) introduced a praise intervention and observed a decrease in individual and class-wide levels of talking-out behavior. In addition, Madsen et al. (1968) found that the effect of establishing classroom rules and ignoring inappropriate behavior had on decreasing disruptive behavior was enhanced substantially when teachers were also directed to praise students for their appropriate behavior.

Initial support for a functional relationship between praise and behavior at other grade levels was also published during this time period. For example, preschool students displayed increased levels of compliance with teacher directions when verbal praise was provided (Goetz, Holmber, & LeBlanc, 1975) and the introduction of specific praise and planned ignoring in a secondary classroom resulted in a substantial decrease in class-wide levels of talking and turning around during instruction, both in comparison to baseline observations and a control classroom (McAllister, Stachowiak, Baer, & Conderman, 1969).

Recent research. Over the past few decades, an abundance of research into the relationship between praise and student behavior has focused on the validation of specific praise (Simonsen et al., 2008). In the past decade alone, there have been more than 55 studies

published in peer-reviewed journals examining the effect of specific praise on student behavior. Although single-case design methods have been used in these studies, and therefore small numbers of teachers and students have participated, the increasing methodological rigor of single-case research and the consistency of the results serve to minimize concerns about validity (Kratochwill et al., 2010).

One of the most common outcome variables in this body of research is on-task behavior. The use of specific praise has been shown to increase levels of on-task behavior for elementary school students in general education elementary school classrooms (Ferguson & Houghton, 1992) and self-contained classrooms for students with emotional and behavioral disorders (EBD; Sutherland et al., 2000). Allday et al. (2012) directed four teachers, in kindergarten through sixth grade classrooms, to deliver specific praise to the entire class and subsequently observed increased levels of on-task behavior in target students in the class who had been identified as having or being at-risk for an EBD.

Researchers have also decreased inappropriate behavior through specific praise interventions with younger students. Stormont et al. (2007) observed an immediate decrease in problem behavior (e.g., yelling, hitting) demonstrated by students in a Head Start pre-school classroom, and Fullerton et al. (2009) found that rates of compliance with pre-school students at risk for EBD increased and became more consistent when their teachers provided specific praise.

Strategies to Increase Specific Praise

Another body of research, interrelated with the efficacy research, has developed over the last several decades: the identification and development of strategies to help teachers increase their use of specific praise in the classroom. Although a full analysis of these studies is outside

the scope of this review, a brief summary of the main strategies is relevant given the difficulties educators have implementing interventions in the classroom (Sanetti & Kratochwill, 2009).

Direct training and cueing. Perhaps the least complex strategy employed in the research is direct training on the nature and use of specific praise (Allday et al., 2012). A 50% reduction in disruptive behavior in elementary school classrooms was observed when teachers underwent training on specific praise in a recent study by Dufrene et al. (2014) and direct training has been utilized as a part of a tiered implementation support system in two recent studies (Myers et al. 2011; Thompson, Marchant, Anderson, Prater, & Gibb, 2012).

Direct training has also been paired with in vivo training using cues from a researcher to indicate to a teacher when she/he should provide praise. These cues have included colored cards (Hall et al., 1968), beep-tones over an intercom system on a variable-interval schedule (Van Houten & Sullivan, 1975), and discrete verbal prompts (i.e., audible only to the teacher wearing an ear bud; Dufrene et al., 2014), and each of these resulted in an increase in teachers' use of specific praise. In the last decade, external cueing devices that deliver silent tactile prompts (e.g., Motivaider, vibrating watches) have been shown to successfully modify the behavior of both children and adults; the use of these devices represents a technological advance in cueing to increase teachers' use of specific praise (Amato-Zech, Hoff, & Doepke, 2006; Austin & Soeda, 2008; Christensen, Young, & Marchant, 2004; Harris, Friedlander, Saddler, Frizzelle, & Graham, 2005; Musti-Rao & Haydon, 2011; O'Callaghan, Allen, Powell, & Salama, 2006).

Self-monitoring. Self-monitoring involves the active evaluation of one's own behavior and has been used widely in education as a behavior modification technique (Simonsen, MacSuga, Fallon, & Sugai, 2013). Teachers who engage in self-monitoring by recording their use of praise statements tend to deliver more praise statements than during baseline conditions

(e.g., Kalis et al., 2007; Simonsen et al., 2013). This recording is typically completed during the course of the school day, and there is some evidence to suggest graphing self-recorded data might contribute to the strategy's effectiveness (Partin, Robertson, Maggin, Oliver, & Wehby, 2010). Methods for self-recording are numerous, but Simonsen et al. (2013) found that the five teachers in their study preferred using a handheld counter to recording tally marks or estimating a rate per minute.

Performance feedback. Performance feedback generally "includes direct observations of specific teacher behaviors in an applied setting followed by feedback on the behavior" to assist the teacher in altering some dimension of his/her behavior (e.g., rate, topography; Stormont & Reinke, 2013, p. 220). A recent comprehensive literature review of performance feedback found that more than 20 studies had experimentally manipulated performance feedback while assessing praise as a dependent variable (Cavanaugh, 2013). These studies were conducted between 1973 and 2011, across all grade levels, and indicate that performance feedback, "may be an effective strategy for improving teachers' use of praise in their classrooms" (Cavanaugh, 2013, p. 123).

Tiered implementation supports. The use of tiered implementation supports to train teachers to use specific praise has emerged in the literature in the last few years. Tiered implementation support involves the use of a multi-tiered problem-solving approach, which has historically been used to deliver targeted and individualized intervention to students (Thompson et al., 2012). However, two recent studies, published by Myers and colleagues (2011) and Thompson and colleagues (2012), suggest that this multi-tiered approach may also help teachers implement evidence-based classroom management practices, specifically specific praise. In this approach, strategies of varying intensity are provided to teachers based on their specific praise

data, representing an individualized approach to professional development (Thompson et al., 2012). In both studies, training was conducted as a universal strategy, with consultation and feedback utilized as more intensive strategies by Myers et al. (2011) and video self-monitoring and coaching utilized by Thompson et al. (2012).

Implementation of Specific Praise in Practice

Given the evidence base behind its use, specific praise is a "universally recommended" classroom management practice (Pisacreta et al., 2011, p. 244). More specifically, teachers are routinely instructed to (a) provide more praise statements than reprimands while (b) increasing their overall use of specific praise (e.g., Alberto & Troutman, 2009; Epstein et al., 2008; Lane et al., 2011; Pisacreta et al., 2011; Reinke et al., 2011; Simonsen et al., 2016).

Ratio of positive to negative statements. The general rationale for providing more praise statements than reprimands is that praise has been shown to encourage appropriate behavior whereas reprimands have been shown to be negatively correlated with on-task behavior (Beaman & Wheldall, 2000; Pisacreta et al., 2011). This rationale is consistent with the use of positive behavior support techniques, which aim "to create environments that support social and learning outcomes and in doing so prevent the occurrence of problem behaviors" (Trussell, 2008, p. 179). Ratios of 4 praise statements to 1 reprimand (Trussell, 2008) and 6-8 praise statements to 1 reprimand (Latham 1992; Sugai & Horner, 2002) have been suggested for teachers; however, there is some evidence to suggest that a ratio as low as 1:1 will result in positive changes in student behavior (Pisacreta et al., 2011).

Rates of specific praise in the classroom. The functional relationship between praise and student behavior is well established in the literature but the specific recommendation that teachers *increase* their use of specific praise is based on another avenue of research, which has

examined the extent to which teachers actually use praise in the classroom (Beaman & Wheldall, 2000).

Natural rates of specific praise. In 1975, Mary Alice White published a seminal piece on the observed natural rates of approval and disapproval in the classroom, and in this review, approval was defined as any instance of praise or encouragement. White (1975) found that the average rate of approval in 36 first- and second-grade classrooms ranged from 0.30 to 1.30 approvals per minute. Unfortunately, this rate declined substantially in the upper elementary grades, where the average rate of approval in third-, fourth-, and fifth-grade classrooms ranged from 0.32 to 0.38 approvals per minute; amounting to about five approval statements in a 15-minute period. Furthermore, when considering praise specifically related to classroom management (i.e., managerial, or not related to the on-going instructional activity), the rates fell to 0.01-0.12 in first and second grade and 0.01-0.07 in third, fourth, and fifth grade (White, 1975). In discussing these results, White (1975) said, "…it appears that teachers are not fully utilizing a very important tool of reinforcement…the drop in teacher approvals [across elementary school grades] leads to a rate of reinforcement that is not optimal for maintaining (or increasing) learning behaviors" (p. 370).

More than two decades later, similar conclusions were drawn by Beaman and Wheldall (2000), who wrote: "Teachers, at best, are not taking advantage of opportunities to reinforce appropriate behaviour in any overt, systematic way" (p. 436). The purpose of Beaman and Wheldall's paper was to review and analyze the research literature on naturally occurring levels of approval and disapproval in elementary, middle, and secondary classrooms. They began with the White (1975) paper and reviewed an additional 13 studies published in seven different countries between 1975 and 1995. However, as in White's paper, the studies examined by

Beaman and Wheldall measured general "approvals" in the classroom, which include much more than specific praise.

More recently, Reinke et al. (2013) found low naturally occurring rates of specific praise in 33 elementary school classrooms implementing School-wide Positive Behavioral Interventions and Supports (SW-PBIS). The average rate per minute of specific praise statements delivered was 0.13, with a range of 0.00-0.47 statements per minute (Reinke et al., 2013). Furthermore, teachers were found to deliver general praise statements more frequently than specific praise statements per minute (M = 0.43, range = 0.02-1.29), which is inconsistent with recommendations for best practice in classroom management (Alberto & Troutman, 2009; Reinke et al., 2011). In 2011, Scott et al. collapsed general and specific praise statements into one "positive feedback" variable in their analysis of typical student and teacher behavior in the classroom. Using this procedure, they found that across more than 1,000 classroom observations in elementary and high schools, teachers only delivered 0.06 total praise statements per minute in the natural environment (Scott et al., 2011). In 2015, Floress and Jenkins observed four kindergarten teachers and found they delivered, on average, 8.80 specific praise statements per hour of instruction; this amounts to a rate per minute of 0.15. They also found that teachers gave more specific praise to individual students, as opposed to large or small groups of students, and teachers gave more than four times as many general praise statements as specific praise statements (Floress & Jenkins, 2015).

A more nuanced understanding of the naturally occurring rates of specific praise can be gleaned from the observed baseline rates published in studies investigating the use of specific praise in the classroom. By definition, these rates represent the frequency with which teachers used specific praise prior to intervention.

In pre-school classrooms, rates of specific praise have ranged from 0.00 to 0.20 statements per minute (Fullerton et al., 2009; Stormont et al., 2007). Rates in elementary school classrooms have included 0.15, 0.30, and 0.37 (Allday et al., 2012); 0.13 and 0.18 (Dufrene et al., 2014); and 0.09 specific praise statements per minute (Sutherland et al., 2000). In one study, there were a total of two specific praise statements delivered to elementary school students across 25 baseline observations (Duchaine, Jolivette, & Frederick, 2011). Middle school teachers consistently delivered between 0.01 and 0.15 statements per minute (Allday et al., 2012; Simonsen et al., 2013). Finally, Kalis et al. (2007) observed a rate of 0.18 specific praise statements per minute in high school. These rates may even represent overestimates given that teachers likely volunteered to participate in the studies.

Optimal rate of specific praise. In national surveys, more than 30% of teachers reported that student behavior interfered with their teaching (National Center for Education Statistics, 2007-2008) and 25% of teachers identified classroom management as the area in which they are most in need of professional development support (Coalition for Psychology in Schools and Education, 2006). Information such as this continues to inspire research on evidence-based classroom management strategies, including specific praise. However, one area of this research that has not been fully explored is the optimal rate to which teachers should increase their specific praise delivery (Allday et al., 2012).

The idea that the greatest improvements in student behavior will occur when an optimal rate of specific praise is utilized in the classroom first appeared in the literature more than 45 years ago. Workman, Watson, and Helton (1968) said: "…maximal improvement in students' sustained schoolwork behavior may be a function of some optimal level and consistent rate of adults' social attention" (p. 565). Since that article was published, studies have achieved desired

student outcomes in elementary school classrooms under a variety of observed rates of specific praise. In Allday et al. (2012), a 25% increase in on-task behavior, from 50% of intervals on-task to 75% of intervals on-task, was observed when a second-grade teacher increased her rate of specific praise from 0.15 to 0.43 statements per minute during the intervention phase. Additionally, in the same study, an 18% increase in on-task behavior, from 61% to 79% of intervals on-task, was observed when a sixth-grade teacher increased her rate of specific praise from 0.07 to 0.52 statements per minute (Allday et al., 2012). Sutherland et al. (2000) found that when a teacher's rate per minute of specific praise statements increased from 0.09 to 0.45, the percentage of intervals during which students were on-task increased from 48.7% to 85.6%. Finally, the rate per minute of disruptive behavior decreased substantially in both participating classrooms in Dufrene et al.'s recent study (2014): the rate per minute of disruptive behavior decreased from 2.18 to 1.60 in the first classroom when the rate per minute of specific praise increased from 0.18 to 0.94 and it decreased from 1.97 to 0.53 in the second classroom when the rate of specific praise increased from 0.13 to 1.30 (Dufrene et al., 2014).

The levels observed during intervention phases in these studies are higher than naturally occurring rates, but are also highly variable, which prohibits researchers from drawing a consensus on the optimal rate at which specific praise should be delivered. To advance toward the identification of such an optimal rate, researchers should consider experimentally manipulating the rate at which teachers deliver praise and observing the effects of those rates on student behavior (Floress & Jenkins, 2015; Scott et al., 2011; Stichter et al., 2009; Sutherland et al., 2000). It has been nearly 50 years since the need for this line of research was first articulated, but it still represents an unexplored area in the literature on specific praise.

Associated environmental outcomes. In addition to encouraging appropriate behavior in the classroom, the use of specific praise as a classroom management strategy may also promote a more positive classroom environment or climate (Djigic & Stojiljkovic, 2011; Gettinger, Schienebeck, Seigel, & Vollmer, 2011; Mitchell & Bradshaw, 2013; Reinke et al., 2011). The classroom climate encompasses all of the "dynamics, interactions, and behaviors within the classroom" (Gettinger et al., 2011, p. 261) and may greatly impact student learning (Djigic & Stojiljkovic, 2011). To promote a classroom climate that is conducive to learning, teachers should engage in effective classroom management strategies, specifically teaching and reinforcing appropriate behavior, and focus on developing quality teacher-student relationships (Epstein et al., 2008; Gettinger et al., 2011). Specific praise represents an evidence-based classroom management strategy for reinforcing appropriate behavior (Epstein et al., 2008; Gable et al., 2009; Lane et al., 2011; Simonsen et al., 2008) and may contribute to the development of more positive teacher-student relationships (Gable et al., 2009; Gettinger et al., 2011; Reinke et al., 2011). Furthermore, Mitchell and Bradshaw (2013) found that (a) students' perceptions of their teachers' classroom management practices influenced their overall perceptions of school climate and (b) positive behavior support practices, including specific praise, were more highly correlated with positive perceptions of school climate than exclusionary discipline strategies (i.e., referring a student to the principal's office).

Statement of Purpose

Student behavior in the classroom, in particular on-task and disruptive behavior, is correlated with academic achievement (Alexander et al., 1993; Hoge & Luce, 1979; Horn & Packard, 1985; Wentzel, 1991); therefore, teachers' management of that behavior is critical under the current accountability standards influencing education in the United States. A

consistently effective classroom behavior management strategy is specific praise, which has been shown to decrease inappropriate behavior (i.e., disruptive behavior) and increase appropriate behavior (e.g., on-task behavior, compliance; Gable et al., 2009; Hester et al., 2009; Sutherland et al., 2000). Consequently, research in the field has examined strategies to increase teachers' use of specific praise. However, the differentiated effects of observed rates have not been examined and, to date, no research has been published on the direct comparison or experimental manipulation of two or more rates of specific praise (Scott et al., 2011; Stichter et al., 2009; Sutherland et al., 2000). Therefore, although increasing specific praise has become a universally recommended classroom management strategy, researchers have not been able to make clear recommendations regarding the optimal rate at which specific praise should be delivered (Pisacreta et al., 2011; Scott et al., 2011; Stichter et al., 2009).

The purpose of this study was to compare the effects of two systematically manipulated rates of specific praise on the disruptive behavior and on-task behavior of elementary school students. The two rates that were utilized are 0.40 specific praise statements per minute, which amounts to one statement every 2 min and 30 s (12 statements in a 30-min time period), and 0.80 specific praise statements per minute, which amounts to one statement every 1 min and 25 s (24 statements in a 30-min time period). These rates were chosen from the available literature on observed rates of praise following intervention (Allday et al., 2012; Duchaine et al., 2011; Kalis et al., 2007; Simonsen et al., 2013; Stormont et al., 2007; Sutherland et al., 2000). Further, these rates were of interest to the researcher because the higher rate is exactly double the lower rate and it was thought that this might lead to important practical implications when the student behavior outcomes associated with the two rates were compared.

Research Questions and Hypotheses

The study attempted to answer two primary research questions.

Research question 1. In an elementary school classroom, does a rate of 0.40 specific praise statements per minute or 0.80 specific praise statements per minute result in (a) lower levels of student disruptive behavior and (b) higher levels of student on-task behavior?

Hypothesis 1. Due to the established relationship between increased use of specific praise and improvements in student outcomes (e.g., Allday et al., 2012; Dufrene et al., 2014; Sutherland et al., 2000), it is hypothesized that a rate of 0.80 specific praise statements per minute (i.e., the higher rate) will result in lower levels of student disruptive behavior and higher levels of student on-task behavior.

Research question 2. Which of the two rates do teachers find more acceptable and feasible for implementation in the classroom on a daily basis?

Hypothesis 2. It is hypothesized that due to low rates of naturally occurring praise, teachers will find 0.40 specific praise statements per minute (i.e., the lower rate) to be more acceptable and feasible than 0.80 specific praise statements per minute (Beaman & Wheldall, 2000; White 1975).

Exploratory Questions

This study also attempted to provide preliminary evidence related to two exploratory questions.

Exploratory question 1. Does the level of specific praise delivered by teachers (i.e., to individual students, to a group of students in the class, to the entire class) have an impact on student behavior outcomes?

Exploratory question 2. Are there any changes in student and teacher perceptions of the classroom climate when specific praise is systematically manipulated at rates higher than those naturally occurring in the classroom?

Chapter III: Methods

Participants and Setting

Participants included four teachers from two public elementary schools in a large suburban school district in the Northeastern region of the United States. The district's school board granted the researcher permission to conduct this study in its schools, and recruitment of individual teachers occurred at grade-level meetings or by appointment after permission was obtained from individual building principals. These recruitment procedures were approved by the University of Connecticut's Human Subjects Institutional Review Board (HSIRB).

Five teachers signed consent and agreed to participate in the study. However, one was removed from the study because she did not meet the study's primary inclusion criterion related to naturally occurring rates of specific praise (see the Procedures section for more details); the remaining four teachers met the study's primary and secondary inclusion criteria, and active recruitment was discontinued. No additional teachers expressed interest in participating in the study after this point, although procedures were in place to provide brief professional development to teachers who were interested and missed the opportunity to enroll in the study.

The four participating teachers are hereafter referred to as Teacher A, Teacher B, Teacher C, and Teacher D. Teachers A, C, and D taught in School 1, whereas Teacher B taught in School 2. For more detailed information about their schools, please see Table 1.

All four teachers were females with Master's/Specialist degrees and teaching certifications in general education. One teacher identified herself as Black/African American and the other three identified themselves as Caucasian; none of the teachers identified as Hispanic or Latino. Teacher A was 38 years old, taught 4th grade, and had eight years of experience teaching. Her classroom, hereafter referred to as Classroom A, contained 21 students

and, on average, one paraprofessional or additional teacher to support students. Teacher B was 45 years old, taught 5th grade, and had 16 years of teaching experience. Her classroom, hereafter referred to as Classroom B, contained 24 students and there were no paraprofessionals or additional teachers present. Teacher C was 33 years old, taught 5th grade, and had 11 years of teaching experience. Her classroom, hereafter referred to as Classroom C, contained 18 students and, on average, two paraprofessionals or additional teachers to support students. Teacher D was 34 years old, taught 5th grade, and had 12 years of teaching experience. Her classroom, hereafter referred to as Classroom D, contained 18 students and there were no paraprofessionals or additional teachers present. All four classrooms included students with disabilities.

Data Collectors

The student researcher was the primary data collector for this study. She conducted all meetings with the teachers and completed all systematic direct observations (SDOs) of teacher and student behavior in the classroom. Two graduate students studying school psychology completed inter-observer agreement (IOA) for classroom observations; they both had experience in behavior management and SDO, and were trained on the study's procedures (see below). A third graduate student studying school psychology reviewed audio recordings of all meetings with the teachers to determine procedural integrity; this student had extensive prior experience assessing treatment and procedural integrity in applied research settings.

Materials and Measures

Teacher demographics form. Teachers completed a demographics form (Appendix C) during the pre-baseline phase. Data from this form provided the researcher with information related to teachers' training and certification, as well as knowledge and use of classroom management strategies, with an emphasis on specific praise. This form was adapted from an

unpublished measure by Sanetti and Long (2012) and the Classroom Ecology Checklist (Reinke et al., 2011).

Specific praise training protocol. A standardized protocol was used to train teachers on the use of specific praise. This protocol is adapted from *PRIME: Planning Realistic Implementation and Maintenance by Educators* and has been used to train teachers on a wide range of classroom management strategies, including specific praise (Sanetti, Kratochwill, Collier-Meek, & Long, 2014). The protocol included evidence-based instructional strategies such as didactic instruction, modeling, and practice using the study's external cueing device with feedback (i.e., vibrating wristwatch). This combination of training and cueing has been shown to be an effective method for increasing teachers' use of specific praise (Hall et al., 1968; Dufrene et al., 2014; Van Houten & Sullivan, 1975). The protocol can be found in Appendix I, and the associated integrity checklist can be found in Appendix J.

External cueing device. The teachers' delivery of specific praise statements was systematically manipulated through the use of an external cueing device, specifically a VibraLITE 8 wristwatch. These wristwatches, available commercially, allowed the researcher to program a unique tactile prompt delivery schedule (i.e., the wristwatch vibrated): 0.40 tactile prompts per minute and 0.80 tactile prompts per minute, on fixed-interval schedules. Teachers wore these watches during the study's daily intervention period and delivered specific praise when prompted (i.e., when the watch vibrated). More specifically, at the moment the watch vibrated, the teacher quickly scanned the classroom and delivered specific praise to (a) an individual student, (b) a small group of students, or (c) the entire class before continuing with the instructional activity.

Systematic direct observation form. The SDO form (Appendix N) was used to record data on student behavior, teacher praise, and treatment integrity (TI) throughout the duration of the study. It is adapted from three unpublished measures used in recent classroom management research (Sanetti, Collier-Meek, & Kratochwill, 2013; Sanetti, Long, & Kratochwill, 2012a; Sanetti, Long, & Kratochwill, 2012b).

Student behavior. SDO has long been the preferred method of collecting data on student behavior because of its objectivity and standardization (Chafouleas, Riley-Tillman, & Sugai, 2007). Techniques for SDO can be grouped into two broad categories: event-recording and time-sampling (Cooper et al., 2007). In this study, both of the dependent variables were observed using SDO time-sampling procedures. Specifically, (a) disruptive behavior was recorded using a partial-interval system, as it was expected to be demonstrated at a low-frequency, and (b) on-task behavior was recorded using a momentary time-sampling system, as it was expected to be a relatively continuous behavior (Cooper et al., 2007). Disruptive behavior was operationally defined as "a student action that interrupts regular school or classroom activity (e.g., out of seat, fidgeting, playing with objects, acting aggressively, talking/yelling about things that are unrelated to classroom instruction)" (Chafouleas et al., 2012, p. 495). On-task behavior was operationally defined as "actively or passively participating in the classroom activity (e.g., writing, raising hand, answering a question, talking about a lesson, listening to the teacher, reading silently, or looking at instructional materials" (Chafouleas et al., 2012, p. 495).

The 30-min observation period was divided into 15-s intervals to allow for the use of these time-sampling procedures (Cooper et al., 2007). With the passage of each interval, the researcher/observer attended to a different student, rotating through the class for the duration of the observation. For example, if there were 20 students in the classroom, the behavior of each

student was observed six times in 30 min. This procedure allowed for the researcher to assess class-wide levels of behavior, rather than individual levels, and has been shown to be the most effective direct observation method for assessing outcomes of class-wide interventions (Briesch, Hemphill, Volpe, & Daniels, 2015).

To determine IOA and establish reliability estimates, a second rater was present for an average of 24.24% of baseline phase observations (Classroom A = 20.00%, Classroom B = 28.57%, Classroom C = 22.22%, Classroom D = 25.00%), 33.33% of intervention phase observations when a rate of 0.40 statements per minute was implemented (Classroom A = 33.33%, Classroom B = 33.33%, Classroom C = 33.33%, Classroom D = 33.33%), 25.00% of intervention phase observations when a rate of 0.80 statements per minute was implemented (Classroom A = 16.17%, Classroom B = 33.33%, Classroom C = 16.67%, Classroom D = 33.33%), and 20.00% of optimal phase observations (Classroom A = 20.00%, Classroom B = 20.00%, Classroom C = 20.00%, Classroom D = 20.00%), for an average of 25.74% across all study phases and teachers (see Table 2).

IOA was calculated using a trial-by-trial procedure, as both student behaviors were recorded in a discrete manner (i.e., occurrence or non-occurrence in each interval; Cooper et al., 2007). Agreement for both behaviors remained well above the established criterion of 80% throughout the study (Kratochwill et al., 2010). Across all classrooms, the mean level of agreement for on-task behavior was 92.68% during baseline phase observations, 96.25% during intervention phase observations when a rate of 0.40 statements per minute was implemented, 95.11% during intervention phase observations when a rate of 0.80 statements per minute was implemented, and 95.42% during optimal phase observations. Similarly, across all classrooms, the mean level of agreement for disruptive behavior was 94.80% during baseline phase

observations, 97.19% during intervention phase observations when a rate of 0.40 statements per minute was implemented, 95.63% during intervention phase observations when a rate of 0.80 statements per minute was implemented, and 93.96% during optimal phase observations. See Table 3 for IOA data across each classroom.

Teacher praise. Data on specific praise statements were collected through event-recording procedures, which are appropriate given the discrete nature of the behavior (Chafouleas et al., 2007). More specifically, tally marks for each specific praise statement were recorded by level (i.e., individual, group, or class-wide) to address the study's first exploratory question. These counts by level were summed to determine a total number of specific praise statements provided during the observation, which was used to determine TI.

Data on general praise statements delivered by the teacher were also collected using the SDO form. Although the purpose of this study is related to the relationship between specific praise and student behavior, the collection of data on general praise statements (a) ensured that observers could reliably distinguish between specific and general praise and (b) provided a comprehensive picture of teacher praise practices throughout the course of the study. Event-recording procedures were utilized and an overall rate per minute of general praise statements was calculated; these data are presented in Table 4.

Again, to determine IOA and establish reliability estimates, a second rater was present for at least 20% of observations across teachers and phases (Kratochwill et al., 2010). See the Student Behavior section above or Table 2 for the percent of IOA sessions across phases, classrooms, and conditions. IOA was calculated using a mean count-per-interval procedure, as both specific and general praise were recorded using frequency counts and the observation period was divided into 15-second intervals (Cooper et al., 2007). Agreement for all levels of

specific praise and general praise remained well above the established criterion of 80% across all sessions (Kratochwill et al., 2010).

Across all teachers, the mean level of agreement for specific praise statements delivered at the individual level was 99.17% during baseline phase observations, 99.48% during intervention phase observations when a rate of 0.40 statements per minute was implemented, 99.33% during intervention phase observations when a rate of 0.80 statements per minute was implemented, and 99.17% during optimal phase observations. The mean level of agreement for specific praise statements delivered at the group level was 99.83% during baseline phase observations, 99.48% during intervention phase observations when a rate of 0.40 statements per minute was implemented, 98.96% during intervention phase observations when a rate of 0.80 statements per minute was implemented, and 98.96% during optimal phase observations. The mean level of agreement for specific praise statements delivered at the class-wide level was 99.90% during baseline phase observations, 99.69% during intervention phase observations when a rate of 0.40 statements per minute was implemented, 100.00% during intervention phase observations when a rate of 0.80 statements per minute was implemented, and 99.58% during optimal phase observations.

Treatment integrity. Traditionally, TI has been understood as the "degree to which the intervention plan is implemented as intended" (Gresham, 1989, p. 37); however, recent research suggests that TI is a multidimensional construct (Sanetti & Kratochwill, 2009). Although many multidimensional conceptual models of TI have been identified (see Sanetti & Kratochwill, 2009 for a full review), this study evaluated the dimensions of adherence and quality put forth in Dane and Schneider's model (1998) in evaluating teachers' implementation of specific praise.

Adherence was rated on a three-point Likert scale: 2 = *implemented as planned* (within +/- .033 of the prescribed rate, equivalent to +/- one specific praise statement), 1 = *implemented with deviation* (within +/- .066 of the prescribed rate, equivalent to +/- two specific praise statements), or 0 = *implemented inappropriately* (greater than +/- .066 of the prescribed rate; see Appendix N; Sanetti et al., 2012a). The total number of specific praise statements provided during the observation was divided by the duration of the observation to obtain a rate per minute of specific praise. This rate was compared to the prescribed rate to determine adherence ratings. As described in the Procedures section below, only observations during which adherence was rated as *implemented as planned* were counted in the data analysis. Therefore, all teachers achieved adherence ratings of 2 (i.e., *implemented as planned*) during (a) intervention phase observations when a rate of 0.40 statements per minute was implemented (n = 6), (b) intervention phase observations when a rate of 0.80 statements per minute was implemented (n = 6), and (c) optimal phase observations (n = 5; see Table 5 for more details). Adherence was not rated for baseline phase observations, as the specific praise intervention had not yet been introduced. Table 8 provides additional support for adherence ratings as each teacher's mean rate per minute of specific praise delivery across phases is provided.

Teacher B received a rating of *implemented inappropriately* for one intervention phase observation under the 0.80 statements per minute condition, and that observation was excluded from data analysis. Teacher D received a rating of *implemented inappropriately* for two observations under the 0.80 statements per minute condition: one during the intervention phase and one during the optimal phase; both of these observations were excluded from the data analysis.

Quality was rated on a three-point Likert scale: 3 = *very good*, 2 = *fair*, and 1 = *poor* (see Appendix N). Observers used three indicators to determine this global quality rating of the teacher's specific praise statements during the observation. These indicators were (a) contingency (i.e., delivered only after appropriate behavior was performed), (b) immediacy (i.e., delivered right after the appropriate behavior was performed), and (c) sincerity (i.e., tone and content of the statements matched the students' age and statements were varied). A rating of 3 was given when all three indicators were present without any flaws or just one of the indicators was somewhat flawed. A rating of 2 was given when one indicator was seriously flawed or two were somewhat flawed. If two indicators were seriously flawed or all three were somewhat flawed, a rating of 1 was given. Quality ratings were completed for observations across all phases; even though the specific praise intervention was not introduced during the baseline phase, specific praise statements were delivered by teachers during most baseline observations and the quality of those statements was assessed. All four teachers earned a quality rating of 3 (i.e., *very good*) across all baseline, intervention, and optimal phase observations when specific praise statements were delivered. See Table 5 for more details.

IOA was also calculated for TI adherence and quality ratings during at least 20% of observations across teachers, phases, and treatment conditions, using a 0-1 coding scheme (i.e., 1 = agreement, 0 = non-agreement; Kratochwill et al., 2010). See the Student Behavior section above or Table 2 for the percent of IOA sessions across phases, classrooms, and conditions. Across all teachers and phases, the mean level of adherence IOA ratings was 100.00% and the mean level of quality IOA ratings was 100.00% (see Table 3).

Classroom climate survey (CCS). To evaluate the relationship between the rate of specific praise and climate, students and teachers completed the CCS. This survey was adapted

from the elementary student version of the Georgia School Health Survey 2.0, which was originally developed to assess school climate under the statewide academic accountability system in Georgia (Georgia State Department of Education, 2010). It has undergone confirmatory factor analysis and demonstrated acceptable levels of internal consistency ($\alpha = .80$; La Salle, Zabek, & Myers, 2016), and is now embedded in the Office of Special Education Programs Technical Assistance Center's *School Climate Survey Suite* (La Salle, McIntosh, & Eliason, 2016).

The items on the CCS were taken from the Georgia School Health Survey 2.0 but the wording was altered to reflect classroom climate, as opposed to more general school climate. Further, to capture both student and teacher perceptions of the classroom climate when the rate of praise was systematically manipulated, two versions of the CCS survey were created. Both versions contained the same 11 items and four response options using a Likert scale (i.e., 1 = *never*, 2 = *sometimes*, 3 = *often*, 4 = *always*); however, the student version, written at a 2nd grade reading level, asked students about their perceptions of the classroom climate (e.g., "I like my classroom."; Appendix G) whereas the teacher version asked what the teachers thought about student perceptions (e.g., "I think my students like our classroom."; Appendix H). On the original elementary student version of the Georgia School Health Survey 2.0, the mean score on the survey was 3.22 with a standard deviation of 0.47 (La Salle, Zabek et al., 2016). Adaptations made to create this study's CCS were completed in consultation with Tamika La Salle, PhD, one of the authors of the Georgia School Health Survey 2.0.

The surveys were completed once during the pre-baseline phase and another three times across the intervention and optimal phases: immediately following the last intervention period when a rate of 0.40 statements per minute was implemented, immediately following the last

intervention period when a rate of 0.80 statements per minute was implemented, and immediately following the last intervention period in the optimal phase. Teachers were provided with an envelope during the introductory meeting in the pre-baseline phase and prior to each of these three intervention periods. The envelope contained a set of student surveys, the directions to read to students, and one copy of the teacher survey; all of these documents were color-coded by phase/rate (i.e., white paper during the baseline phase, blue paper for the rate of 0.40 statement per minute, yellow paper for the rate of 0.80 statements per minute, and green paper during the optimal phase). On the outside of the envelope, there was a list of the steps teachers needed to complete when administering the survey to the students and completing their own version (see Appendices E and P). To protect the identity of the students, the researcher was not present in the room when the surveys were completed and no identifiable information about the students was collected (e.g., names, ages, genders).

Usage Rating Profile-Intervention Revised (URP-IR). Teachers completed the acceptability and feasibility subscales of the URP-IR (Chafouleas, Briesch, Neugebauer, & Riley-Tillman, 2011) during the intervention and post-intervention phases. The URP-IR (Appendices Q and R) is a brief self-report measure of social validity which requires intervention implementers to answer questions using a 6-point Likert scale (1 = *strongly disagree* to 6 = *strongly agree*; Briesch, Chafouleas, Neugebauer, & Riley-Tillman, 2013). The full measure includes 29 questions that yield six subscale scores about factors related to the use of an intervention over time: acceptability, understanding, family-school collaboration, feasibility, system climate, and system support (Briesch et al., 2013). The acceptability and feasibility subscales have both demonstrated high levels of internal consistency reliability ($\alpha = .95$ and $\alpha = .88$, respectively; Briesch et al., 2013). A minor wording change was made to two items on the

subscales to match the class-wide nature of the specific praise intervention (i.e., "child's behavior problem" became to "children's behavior problems").

Teachers completed the URP-IR acceptability and feasibility subscales a total of three times across the intervention and optimal phases. During the intervention phase, the teacher completed separate URP-IR scales for the lower and higher rates of specific praise immediately following the last intervention periods during which the rates were implemented (see intervention schedule in Appendix M). Following the last intervention period in the optimal phase, the teacher completed a second URP-IR for the rate implemented during the optimal phase. Each time teachers completed the URP-IR, they also completed a self-administration checklist.

Design

An alternating treatments single-case design (SCD), embedded within a multiple baseline design (MBD) across participants, was employed to compare the effects of the two systematically manipulated rates of specific praise on student disruptive behavior and on-task behavior. There were five phases in the study: (a) pre-baseline, (b) baseline, (c) training, (d) intervention, and (e) optimal (Kazdin, 2011; Kratochwill & Levin, 2010). The alternating treatment design was utilized during the intervention phase because it allowed for an efficient and direct comparison of the two specific praise intervention conditions without withdrawal of specific praise entirely (Kratochwill & Levin, 2010).

Conclusions about the functional relationship between an intervention and outcomes are possible with an alternating treatments design because attempts to demonstrate an effect occur each time the alternating sequence is repeated (Kratochwill et al., 2010). In this study, one attempt to demonstrate an effect was evident each time the teacher switched from 0.40

statements per minute to 0.80 statements per minute, or vice versa. As seen in Figure 1, there were six attempts to demonstrate an effect in Classroom A, five attempts in Classroom B, three attempts in Classroom C, and seven attempts in Classroom D.

Further, Kratochwill and Levin (2010) recommend that whenever possible, elements of randomization be added to single-case designs to further increase the robustness of the conclusions and minimize threats to internal validity. To this end, stratified random sampling procedures were used to determine the order of the treatment conditions and ensure both of the specific praise rates were observed six times in the intervention phase. The treatment condition schedule was shared with the teachers in advance and the color of the external cueing device allowed the teacher to easily identify the treatment conditions to which they were assigned each day (Kazdin, 2011). More specifically, the black watch was programmed to a rate of 0.40/min and the blue watch was programmed to a rate of 0.80/min, and teachers' schedules simply indicated what color watch to wear. No explanation of the treatment condition schedules was provided to the students.

As stated above, the alternating treatments design was embedded within a MBD across teachers and the specific praise intervention was introduced at different points in time to further minimize threats to internal validity and allow for more definitive conclusions about the effects of the two rates of specific praise on student behavior. With four teachers, the MBD allowed for four possible demonstrations of effect. Teachers were also randomly assigned to their baseline order to increase the methodological rigor of the design. Varied baseline lengths of 5, 7, 9, and 11 data points were determined a priori to allow for sufficient staggering of the transition from baseline to intervention (Kazdin, 2011; Kratochwill & Levin, 2010). The fourth baseline length

was extended to 12 data points during the course of the study to ensure adequate collection of IOA data.

Procedures

Observer training. The researcher trained two observers to assist with data collection and IOA. Initial observer training consisted of three phases, based on the observer training approach outlined by Cooper et al. (2007). In the first phase, the student researcher introduced the study and its hypotheses and reviewed the operational definitions of the behaviors, SDO form and recording procedures, and additional observation materials (e.g., beep tone audio recording, headphone splitters). In the second phase, the researcher modeled the use of the SDO form and engaged in a think-aloud procedure while watching a video of a classroom; the observers followed along with copies of the SDO form. Finally, the observers practiced using the SDO form while watching videos of classrooms, and these videos required observers to discriminate between occurrences and non-occurrences of both teacher and student behaviors (Cooper et al., 2007). The researcher addressed questions and misunderstandings after each video, and initial training concluded when the observers scored 90% agreement with a researcher-created master code on three consecutive videos (Cooper et al., 2007).

The study's observer training protocol also dictated that additional training sessions occur twice throughout the study to prevent observer drift: once at the beginning of the intervention phase and once at the beginning of the optimal phase (Cooper et al., 2007). These training sessions consisted of an abbreviated review of the operational definitions and recording procedures as well as practice with videos of classrooms.

Phase I: Pre-baseline. An introductory meeting was held with each teacher after she expressed interest in participating in the study. Informed consent was obtained following the

procedures approved by the university's HSIRB (see Appendix A) and the teacher was asked to complete the Teacher Demographics Form (Appendix C). Copies of the Parental Notification Form (Appendix B) were provided to the teacher for immediate distribution to the parents of all students in the classroom. Parental notification was appropriate for this study, rather than parental consent and student assent, because (a) individual student data were represented in overall class-wide levels of student data, (b) identifying student information was not collected, and (c) there were no formal interactions between the researcher or observers and the students in the class.

After consent was obtained and forms were distributed, the teacher and researcher collaboratively determined the intervention period for the study. This was a period of teacher-directed instruction in a core content area (e.g., math, English language arts, social studies) during which (a) the classroom teacher taught independently (i.e., not a period of co-teaching), (b) the majority of the period was spent in whole-group activities, and (c) challenges related to classroom management were evident. The intervention period, which was 30 min in duration and remained consistent throughout each phase of the study, was the time of day when (a) the teacher provided specific praise at the determined rates and (b) the researcher conducted SDO; additional teachers or paraprofessionals did not deliver specific praise statements during this time. The intervention periods for Teachers A, C, and D occurred at the beginning of math instruction and Teacher B's intervention period occurred at the beginning of English language arts instruction. See Table 7 for more descriptive information about each teacher's intervention period.

Finally, the researcher briefly reviewed a list of the steps involved in the completion of the CCS (see Appendix E). These were attached to the outside of the envelope containing one

set of student surveys (Appendix G), the directions to read to students (Appendix F), and one copy of the teacher survey (Appendix H). The researcher left this envelope with the teacher, who administered the surveys and completed her own survey within the next three days, but only after the Parental Notification Form had been sent home. To minimize variability across the study phases, the teacher was instructed to administer the student survey and complete her survey immediately following the class period during which the intervention period fell (e.g., if the intervention period was the first 30 min of math, the surveys were completed at the end of the math instructional block). Teachers were also asked to check-off each step on the list on the outside of the envelope as they completed it; however, adherence to this request varied across teachers. According to anecdotal teacher reports, completion of the surveys took approximately 10 min: 5 min for the teachers to administer the student survey and another 5 min for the teachers to complete their survey.

The introductory meeting required an average of 14 min of the teacher's time (range = 11-17 min). All meetings were audiotaped so an independent rater trained in the study's protocol could review the recording and determine procedural integrity (see Appendix D). Across all teachers, 100% of the introductory meeting components were delivered by the researcher; see Table 6 for more details.

Phase II: Baseline. During the baseline phase, the researcher conducted observations using the SDO form (Appendix N) to establish baseline levels of student disruptive behavior and on-task behavior, as well as baseline rates of specific praise delivered by the teacher. These 30-min observations occurred during the mutually agreed upon intervention period and the teacher was instructed to conduct instructional activities and manage classroom behavior as usual so the observed baseline data were as representative as possible. Descriptive information about each

observation session was also collected: number of additional adults present in the classroom (e.g., paraprofessional, instructional aide) and type of teacher-led instructional activity (i.e., whole-group, small-group, and partner/independent). This information, summarized in Table 7, was collected for each observation across all classrooms and phases. Depending on the teacher's randomly assigned baseline order, anywhere from 5-12 baseline observations were conducted across one to five weeks to meet current single-case research design standards (Kratochwill et al., 2010).

Primary inclusion criteria. At the conclusion of the baseline phase, the student researcher analyzed the observational data of teachers' use of specific praise and determined the rate per minute of specific praise delivered during each of the baseline observations. It would have been unethical to ask teachers to lower their use of specific praise to participate in this study, as specific praise is an evidence-based classroom management strategy. This necessitated a study inclusion criterion requiring that each teacher's average baseline rate of specific praise not exceed 0.40 statements per minute, which is the lower of the two treatment conditions. As stated above, four of the five teachers who signed consent and participated in the baseline phase met this aspect of the primary study inclusion criteria: Teacher A delivered an average of 0.21 statements per minute across five baseline observations (SD = 0.12), Teacher B delivered an average of 0.13 statements per minute across seven baseline observations (SD = 0.04), Teacher C delivered an average of 0.13 statements per minute across nine baseline observations (SD = 0.09), and Teacher D delivered an average of 0.06 statements per minute across 12 baseline observations (SD = 0.04); these data are provided in Table 8. One teacher who signed consent delivered an average of 0.42 specific praise statements per minute and she was exited from the study. Per the study's HSIRB protocol, she received a summary of her baseline data and one

professional development session on specific praise as a classroom management strategy, based on the study's specific praise training protocol (Appendix I).

The second aspect of the study's primary inclusion criteria required that observed student behavior in the teacher's classroom warrant intervention. Generally, behavioral expectations should be contextualized; that is, what constitutes acceptable and unacceptable levels of behavior might vary across classrooms, schools, student populations, and settings (Burns & Gibbons, 2012; Sanetti & Simonsen, 2011). However, for the purpose of this study, expectations for behavior in the classroom were mapped onto a general multi-tiered systems of support model (McIntosh, Reinke, & Herman, 2012) in which it is expected that universal classroom management strategies are effective when students engage in appropriate behavior approximately 80% of the time, and conversely do not engage in inappropriate behavior more than 20% of the time (Burns & Gibbons, 2012; Sanetti & Simonsen, 2011). Further, these cut-off scores suggest that improvements in universal classroom management practices can be made by the teacher and could be reflected in positive changes in the levels of both student behaviors. Therefore, in this study, intervention was warranted when: (a) the average percent of intervals in which disruptive behavior was observed across all baseline observations was greater than 20% and (b) the average percent of intervals in which on-task behavior was observed across all baseline observations was lower than 80%. All four teachers met this aspect of the primary inclusion criteria: Across baseline observations, students in Classroom A were disruptive for 27.17% of observed intervals (*SD* = 2.09) and on-task for 72.00% of observed intervals (*SD* = 3.61), students in Classroom B were disruptive for 25.71% of observed intervals (*SD* = 7.55) and on-task for 72.62% of observed intervals (*SD* = 10.65), students in Classroom C were disruptive for 27.31% of observed intervals (*SD* = 7.01) and on-task behavior for 67.41% of observed intervals (*SD* =

6.37), and students in Classroom D were disruptive for 25.25% of observed intervals (*SD* = 3.72) and on-task for 75.35% of observed intervals (*SD* = 2.87). These data are also provided in Tables 9 and 10.

Phase III: Training. Teachers participated in one training session after the baseline phase and before the intervention phase. At this session, they received didactic instruction on how to use specific praise as a classroom management strategy and engaged in modeling and practice activities to promote teacher competence in delivering specific praise at the rates required for intervention (i.e., 0.40 and 0.80 statements per minute). Any praise statement audible to all students in the room met implementation guidelines because class-wide levels of behavior were of interest in this study. Therefore, teachers were taught to praise individual students, small groups of students, and the entire class during this training session. Instruction on how to operate the external cueing devices was also provided.

The training session was conducted using the specific praise training protocol (Appendix I) and required an average of 49 min (range = 44-57 min). As described in the specific praise training procedural integrity sheet (Appendix J), three aspects of integrity were evaluated: adherence to the training steps, quality of delivery of the training steps, and implementer responsiveness. The researcher completed self-ratings of procedural integrity and an independent second rater reviewed audio recordings of the meetings to establish inter-rater reliability. Across all teachers, the student researcher indicated that specific praise training steps were delivered with 100% adherence (i.e., all steps rated as 3 on a Likert scale ranging from 0 = *none* to 3 = *complete*) and 100% quality (i.e., all steps rated as 3 on a Likert scale ranging from 0 = *poor* to 3 = *excellent*), and teachers were 100% responsive (i.e., active engagement and cooperative rated as 3 on a Likert scale ranging from 0 = *never* to 3 = *always*). The independent

rater also found 100% adherence, 100% quality, and 100% implementer responsiveness across all teachers. Inter-rater agreement for all three aspects of specific praise training integrity was 100%, and these data are summarized in Table 6.

Secondary inclusion criterion. An individual's competency level in regards to delivering an intervention affects their ability to implement the intervention with integrity (Sanetti & Kratochwill, 2009). In this study, it was imperative that teachers could competently provide specific praise statements at the two rates that serve as the treatment conditions. Therefore, the study's secondary inclusion criterion was the ability to deliver specific praise at rates of 0.40 and 0.80 statements per minute at the conclusion of the training session (see Appendix I). This ability was assessed during brief independent practice sessions during which the teacher wore the external cueing device and delivered specific praise at both rates with full integrity while conducting a typical instructional activity. The researcher used a copy of the SDO form to record specific praise statements and determine integrity.

All four teachers met the secondary inclusion criterion. However, procedures were in place to assist teachers who may not have demonstrated this competency. Teachers would have been offered a choice between (a) attending a second training session for further guided and independent practice, which would have allowed them to continue with the study if they met the secondary inclusion criterion during this session (see Appendix K) or (b) terminating their participation in the study, at which point they would have received a handout of resources on self-monitoring strategies for the use of specific praise as a classroom management strategy (see Appendix L).

Phase IV: Intervention. Teachers wore the external cueing device and provided specific praise to students at the programmed rate for approximately three to five weeks during the

intervention phase. The researcher delivered a set of two watches, one programmed to 0.40 prompts per minute and one programmed to 0.80 prompts per minute, to teachers at the start of the intervention phase along with the random schedule of which watch would be worn each day (see Appendix M). This schedule utilized the watch color (i.e., black or blue) to indicate to the teacher the correct watch to wear. To promote discrimination between the colors, the watches were also clearly labeled "BLACK" or "BLUE." Additionally, each morning, the researcher provided an electronic prompt (i.e., text or email, based on the teacher's preference) of the appropriate watch to wear that day and extra watches were available at the school should one have malfunctioned. Teachers were required to wear the appropriate watch and implement the scheduled treatment condition each day during the intervention period (i.e., deliver specific praise at the prescribed rate). SDO of student behavior and teacher praise was conducted across 12 days during this phase: six observations when a rate of 0.40 statements per minute was implemented and six observations when a rate of 0.80 statements per minute was implemented.

During the intervention phase, the TI adherence data were analyzed on a daily basis because appropriate implementation of the specific praise rates was a prerequisite for the analysis of their effects on student behavior. Only observation sessions during which the teacher earned an adherence rating of *implemented as planned* counted toward the 12 intervention phase data points. When a teacher earned *implemented with deviation* or *implemented inadequately*, the researcher informed the teacher that she did not adhere to the prescribed rate of specific praise and prompted her to deliver praise each time the wristwatch vibrated, and only when the wristwatch vibrated. When a teacher earned a second *implemented with deviation* or *implemented inadequately* adherence rating during the intervention phase, the researcher reviewed the study's training protocol with the teacher in a brief meeting. At this meeting,

which was audiotaped so an independent rater could determine procedural integrity, the following training protocol steps were repeated in an abbreviated manner: didactic intervention training, guided practice and feedback, and independent practice and feedback (see Appendix O).

During the study, a total of three observations were excluded from data analysis due to adherence ratings, as described in the TI section above. Teacher B earned one rating of *implemented inadequately*. Teacher D earned two ratings of *implemented inadequately* and participated in a review session, after which she implemented the praise rates with full adherence for the remainder of the study. Teacher D's review session required 13 min of her time; researcher self-ratings of procedural integrity were 100%, and the independent ratings were also 100%, for 100% inter-rater agreement (see Table 6). If a teacher had earned two *implemented with deviation* or *implemented inadequately* adherence ratings following this re-training, her participation in the study would have been terminated.

Final intervention periods. Prior to the final intervention periods for both of the two rates (i.e., the last day a rate of 0.40 statements per minute was implemented and the last day a rate of 0.80 statement per minute was implemented), the researcher provided the teacher with an envelope containing one set of student surveys (Appendix G), the directions to read to students during the administration of the CCS (Appendix F), one copy of the teacher CCS (Appendix H), and one copy of the URP-IR (Appendices Q and R).

For the purpose of temporal proximity, the teachers administered the CCS to the students, completed their own CCS, and rated the feasibility and acceptability of a rate of 0.40 specific praise statements per minute immediately following the last intervention period when it was implemented, according to the intervention schedule (see Appendix M). Similarly, teachers administered the CCS, completed their own CCS, and rated the feasibility and acceptability of a

rate of 0.80 specific praise statements per minute immediately following the last intervention period when it was implemented. The completion of these measures was included on the intervention schedule, but the researcher also provided electronic and verbal prompts on the days of the final intervention periods to remind the teacher to complete the measures. Again, teachers were also asked to check-off each step on the administration list on the outside of the envelope as they completed it and adherence to this request varied across teachers. The envelopes with the completed measures were collected by the researcher within 48 hr of administration.

Phase V: Optimal phase. After the intervention phase, the researcher analyzed the data to determine which of the two rates of specific praise was more effective in decreasing disruptive behavior and increasing on-task behavior. For Teachers A and B, a rate of 0.80 statements per minute appeared to bring about lower levels of student disruptive behavior compared to a rate of 0.40 statements per minute, but the difference in levels of on-task behavior under the two rates was less than 1%. Therefore, it was determined that one rate could not be identified as optimal and Teachers A and B were allowed to choose which rate to implement during the optimal phase, as both substantially improved behavior; both Teachers A and B chose 0.40 specific praise statements per minute. For Teacher C, a similar situation occurred, but in the opposite direction: on-task behavior was higher under 0.40 statements per minute, but the difference in levels of disruptive behavior in Classroom C under the two rates was less than 1%. Teacher C was also allowed to choose her rate for the optimal phase and she chose 0.40 statements per minute. Teacher D was assigned to implement a rate of 0.80 specific praise statements per minute during the optimal phase, as this rate appeared to be more effective than 0.40 statements per minute across both student behaviors.

During the optimal phase, teachers delivered specific praise at the prescribed rate for one to three additional weeks and five SDOs were conducted. To encourage TI throughout the optimal phase, the researcher collected the watch for the rate that was not being implemented.

Final intervention period. Immediately following the final intervention period in the optimal phase, the teacher administered the CCS and completed the teacher CCS and URP-IR. The same procedures used during the intervention phase were repeated and the envelopes with the completed measures were collected by the researcher within 48 hr of administration.

Phase VI: Post-intervention. At the conclusion of the study, the teacher met with the researcher to review a brief report summarizing their student and specific praise data across all three phases, as well as student and teacher responses on the CCS (see Appendix S for report template). This report was created for the teacher's benefit only, and was not shared with school administrators. Additionally, teachers received a gift card and one of the external cueing devices as compensation for their participation in the study.

This final meeting required an average of 18 min of the teacher's time (range = 17-19 min) and the procedural integrity sheet is in Appendix T. Across all teachers, 100% of the final meeting components were delivered by the researcher; see Table 6 for more details.

Data Analysis

Conclusions about the effectiveness of the two rates of praise were based on a visual analysis of the outcome data. Many SCD researchers have moved toward calculating effect sizes to analyze SCD studies and promote the inclusion of SCD in the larger discussion of evidence-based practices. However, the field of SCD research has not yet reached a consensus regarding the processes for calculating and appropriately interpreting these effect sizes (Shadish, 2014). Substantial weaknesses in within-case effect sizes have been identified, and between-case effect

sizes are largely untested with alternating treatments designs (Shadish, 2014; Shadish, Hedges, Horner, & Odom, 2015). Therefore, the level (i.e., mean), trend (i.e., slope), and variability (i.e., fluctuation around the mean) of the data under the two treatment conditions were evaluated to determine which rate resulted in more substantial improvements in student disruptive and on-task behavior (Horner et al., 2005).

The feasibility and acceptability of the two rates of specific praise were determined through an analysis of these URP-IR subscale scores. Specifically, overall scores for feasibility and acceptability were established by calculating the average Likert-scale rating for each item in the subscales and dividing by the total number of items on the subscale.

Both of the study's exploratory questions were addressed through descriptive analysis of the data. More specifically, the mean rates of each level of praise (i.e., individual, group, and class-wide) were compared to student disruptive and on-task behavior data across the intervention and optimal phases. Patterns in student and teacher responses on the CCS across baseline, intervention, and optimal phases were also reviewed to determine what changes occurred throughout the course of the study.

With procedural integrity, TI, and inter-observer/inter-rater data meeting and exceeding established research quality standards, the data analysis and interpretation presented in the following sections are likely valid.

Chapter IV: Results

The results of this study are presented in two sections. The first section presents results related to the research questions and the second section presents results related to the exploratory questions.

Research Questions

There were two primary research questions related to the systematic manipulation of the rate at which teachers delivered specific praise in the classroom. These questions are presented below with an analysis of the related data.

Research question 1: In an elementary school classroom, does a rate of 0.40 specific praise statements per minute or 0.80 specific praise statements per minute result in (a) lower levels of student disruptive behavior and (b) higher levels of student on-task behavior? Considering the body of research illustrating the correlation between increased use of specific praise and improvements in student outcomes, it was hypothesized that a rate of 0.80 specific praise statements per minute would bring about better student outcomes than a rate of 0.40 specific praise statements per minute. Overall, visual analysis does not reveal a clear difference in the effects of the two rates of specific praise on student behavior; however, there is a substantial improvement in both disruptive behavior and on-task behavior across all four classrooms from baseline to intervention, and these improvements largely remained consistent during the optimal phase of the study.

Disruptive behavior. Both individual observation and mean levels of disruptive behavior data across phases are presented in Figure 1. Mean levels of disruptive behavior are also presented in Table 9, along with the standard deviation and range for each phase, across classrooms and conditions.

Classroom A. During baseline, students in Classroom A were disruptive for an average of 27.17% of observed intervals, and there was little variability in the data within this phase (*SD* = 2.09, range = 24.17-30.00%). Under a rate of 0.40 specific praise statements per minute, students were disruptive for an average of 17.92% of observed intervals and these data were more variable in comparison to the baseline phase (*SD* = 4.34, range = 11.67-23.33%). Under a rate of 0.80 specific praise statements per minute, students were disruptive for an average of 15.00% of observed intervals (*SD* = 3.25, range = 10.83-20.00%). Under both intervention conditions, a clear and immediate level change is evident compared to the baseline phase. During the optimal phase, under a rate of 0.40 specific praise statements per minute, students were disruptive for an average of 15.50% of observed intervals and a slight decreasing trend is evident (*SD* = 3.04, range = 12.50-19.17%).

Classroom B. During baseline, students in Classroom B were disruptive for an average of 25.71% of observed intervals, with the phase marked by one extreme data point (*SD* = 7.55, range = 20.00-40.83%). Under a rate of 0.40 specific praise statements per minute, students were disruptive for an average of 13.89% of observed intervals (*SD* = 4.00, range = 8.33-18.33%) and under a rate of 0.80 specific praise statements per minute, students were disruptive for an average of 11.25% of observed intervals (*SD* = 1.81, range = 8.33-13.33%); the data under both intervention conditions are relatively stable and represent an immediate and clear level change from the baseline phase. During the optimal phase, under a rate of 0.40 specific praise statements per minute, a very low and stable level of disruptive behavior was observed (*M* = 7.83%, *SD* = 0.95, range = 6.67-9.17%).

Classroom C. During baseline, students in Classroom C were disruptive for an average of 27.31% of observed intervals and these data are highly variable (*SD* = 7.01, range = 15.00-

39.17%). Under a rate of 0.40 specific praise statements per minute, students were disruptive for an average of 20.14% of observed intervals (*SD* = 4.20, range = 14.17-26.67%) and under a rate of 0.80 specific praise statements per minute, students were disruptive for 20.00% of observed intervals (*SD* = 3.12, range = 17.50-25.83%); compared to baseline, the data under both of these conditions are much less variable and reflect an immediate change in level. During the optimal phase, under a rate of 0.40 specific praise statements per minute, students were disruptive for an average of 23.50% of observed intervals and little variability is evident (*SD* = 1.37, range = 21.67-25.00%).

Classroom D. During baseline, students in Classroom D were disruptive for an average of 25.35% of observed intervals and there is a moderate amount of variability within the phase (*SD* = 3.72, range = 19.17-33.33%). Under a rate of 0.40 specific praise statements per minute, students were disruptive for an average of 13.61% of observed intervals (*SD* = 2.92, range = 10.00-17.50%) and under a rate of 0.80 specific praise statements per minute, students were disruptive for an average of 9.58% of observed intervals (*SD* = 3.45, range = 6.67-15.00%). Compared to baseline, variability in the data decreased under both intervention conditions; further, a clear and immediate level change is evident under both conditions with no overlap between baseline and intervention phase data points. During the optimal phase, under a rate of 0.80 specific praise statements per minute, students were disruptive for an average of 11.83% of observed intervals (*SD* = 2.73, range = 9.17-15.83%).

On-task behavior. Individual observation and mean phase levels of on-task behavior across phases are also presented in Figure 1. Mean levels of on-task behavior are presented in Table 10, along with the standard deviation and range for each phase, across classrooms and conditions.

Classroom A. During baseline, students in Classroom A were on-task for an average of 72.00% of observed intervals, with some variability observed within the phase (*SD* = 3.61, range = 67.50-77.50%). Under a rate of 0.40 specific praise statements per minute, students were on-task for an average of 83.89% of observed intervals (*SD* = 1.64, range = 81.67-86.67%) and under a rate of 0.80 specific praise statements per minute, students were on-task for an average of 83.47% of observed intervals (*SD* = 2.20, range = 79.17-85.00%). A clear and immediate level change is evident under both conditions as compared to the baseline phase with no overlap between baseline and intervention phase data points. During the optimal phase, under a rate of 0.40 specific praise statements per minute, students' on-task behavior maintained at a similar level but with an increase in variability (*M* = 84.50%, *SD* = 3.85, range = 80.83-90.83%).

Classroom B. During baseline, students in Classroom B were on-task for an average of 72.62% of intervals, and the data in this phase are marked by high variability, highlighted by one extreme data point (*SD* = 10.65, range = 53.33-84.17%). Under a rate of 0.40 specific praise statements per minute, students were on-task for an average of 89.03% of observed intervals (*SD* = 3.63, range = 82.50-92.50%) and under a rate of 0.80 specific praise statements per minute, students were on-task for an average of 89.58% of observed intervals (*SD* = 3.75, range = 85.00-94.17%). Compared to baseline, the data under both intervention conditions are less variable and indicate a slight increasing trend as the phase progresses. During the optimal phase, under a rate of 0.40 specific praise statements per minute, students were on-task for 90.83% of observed intervals and variability decreased even further (*SD* = 2.28, range = 88.33-94.17%).

Classroom C. During baseline, students in Classroom C were on-task for an average of 67.41% of intervals and the data within the phase are marked by a substantial amount of variability (*SD* = 6.37, range = 56.57-76.67%). Under a rate of 0.40 specific praise statements

per minute, students were on-task for an average of 79.58% of observed intervals (*SD* = 4.37, range = 74.17-85.00%) and under a rate of 0.80 specific praise statements per minute, students were on-task for an average of 76.53% of observed intervals (*SD* = 5.69, range = 70.83-82.50%). Under both conditions, a reduction in variability and immediate change in level are evident, as compared to the baseline phase. During the optimal phase, under a rate of 0.40 specific praise statements per minute, there is an even smaller amount of variability as students were on-task for an average of 79.50% of observed intervals (*SD* = 1.92, range = 77.50-82.50%).

Classroom D. During baseline, students in Classroom D were on-task for an average of 75.25% of observed intervals (*SD* = 2.87, range = 70.00-79.17%). Under a rate of 0.40 specific praise statements per minute, students were on-task for 89.86% of observed intervals (SD = 3.14, range = 84.17-93.33%). Under a rate of 0.80 specific praise statements per minute, students were on-task for 92.36% of observed intervals, with little variability evident (*SD* = 1.86, range = 90.00-95.00%). Further, under both conditions, a clear and immediate level change is evident as compared to the baseline phase, with no overlap between baseline and intervention phase data points. During the optimal phase, under a rate of 0.80 specific praise statements per minute, on-task behavior remained at a stable, high level (*M* = 90.00%, *SD* = 1.67, range = 88.33-91.67%).

Research question 2: Which of the two rates do teachers find more acceptable and feasible for implementation in the classroom on a daily basis? It was hypothesized that teachers would find a rate of 0.40 specific praise statements per minute more acceptable and more feasible than a rate of 0.80 specific praise statements per minute. This hypothesis was based on research showing teachers naturally implement specific praise at low rates (Beaman & Wheldall, 2000; White 1975).

On average, teachers found both rates of specific praise to be moderately to highly acceptable at the end of the intervention phase. Across all four teachers, the mean acceptability score for 0.40 specific praise statements per minute was 4.72 (Teacher A = 3.11, Teacher B = 5.89, Teacher C = 5.22, Teacher D = 4.67), and the mean acceptability score for 0.80 specific praise statements per minute was 4.89 (Teacher A = 3.78, Teacher B = 5.56, Teacher C = 4.78, Teacher D = 5.44). Teachers also found both rates to be moderately to highly feasible at the end of the intervention phase, although feasibility scores were higher than acceptability scores overall. The mean feasibility score for 0.40 specific praise statements per minute was 5.54 (Teacher A = 4.33, Teacher B = 6.00, Teacher C = 6.00, Teacher D = 5.83) and the mean feasibility score for 0.80 specific praise statements per minute was also 5.54 (Teacher A = 4.50, Teacher B = 6.00, Teacher C = 5.83, Teacher D = 5.83). Teachers A-C completed the URP-IR for 0.40 statements per minute at the end of the optimal phase, and acceptability and feasibility scores were consistent with those from the end of the intervention phase. Teacher D completed the URP-IR for 0.80 statements per minute at the end of the optimal phase, and her acceptability and feasibility scores were consistent with her own scores from the intervention phase. The URP-IR data are presented in Table 11.

Exploratory Questions

There were two exploratory questions related to the systematic manipulation of the rate at which teachers delivered specific praise in the classroom. These questions are presented below with an analysis of the related data; a priori hypotheses were not generated for these questions as they were exploratory in nature.

Exploratory question 1: Does the level of specific praise delivered by teachers (i.e., to individual students, to a group of students in the class, to the entire class) have an impact

on student behavior outcomes? To address this exploratory question, specific praise statements were recorded by level during SDOs. Table 12 presents the percentage of specific praise statements by level in each phase and under each condition for each teacher, as well as levels of disruptive and on-task behavior across classrooms and conditions. Overall, as teachers progressed through the study and student behavior improved, their relative use of individual specific praise statements decreased and their use of group and class-wide specific praise statements increased.

During baseline, an average of 78.01% of specific praise statements delivered by teachers were at the individual level, 16.41% were at the group level, and 5.58% were delivered at the class-wide level; at the same time, students were disruptive for an average of 26.39% of observed intervals and on-task for 71.84% of observed intervals. Under a rate of 0.40 specific praise statements per minute, an average of 66.26% of specific praise statements delivered by teachers were at the individual level, 21.69% were at the group level, and 12.06% were at the class-wide level; under this condition, students were disruptive behavior for an average of 16.39% of observed intervals and on-task for an average of 85.59% of observed intervals. Under a rate of 0.80 specific praise statements per minute, an average of 64.08% of specific praise statements were delivered at the individual level, 25.22% were at the group level, and 10.71% were at the class-wide level; under this condition, average student disruptive behavior was 13.98% and on-task behavior was 85.49%. Finally, in the optimal phase, an average of 52.44% of specific praise statements delivered by teachers were at the individual level, 26.31% were at the group level, and 21.25% were at the class-wide level; in this phase, students were disruptive for an average of 14.65% of observed intervals and on-task for an average of 86.21% of observed intervals.

Exploratory question 2: Are there any changes in student and teacher perceptions of the classroom climate when specific praise is systematically manipulated at rates higher than those naturally occurring in the classroom? To address this exploratory question, teachers and students completed the CCS at four points throughout the study: before baseline observations were conducted, twice during the intervention phase (i.e., once after the final intervention period during which a rate of 0.40 was implemented and once after the final intervention period during which a rate of 0.80 was implemented), and after the final intervention period of the optimal phase. Descriptive statistics were used to analyze both teacher and student responses and all climate data are presented in Table 13.

Case A. Before beginning the baseline phase, Classroom A's overall mean score on the student CCS was 3.09 (*SD* = 0.59). Using the qualitative descriptors from the survey's Likert scale, this suggests that students often found the classroom climate to be positive prior to the beginning of the study, when specific praise was implemented at a naturally occurring rate. Under a rate of 0.40 specific praise statements per minute, the mean score was 3.49 (*SD* = 0.40) and under a rate of 0.80 specific praise statements per minute, the mean score was 3.40 (*SD* = 0.38). These data indicate that students found the classroom climate to be more positive when the teacher's use of specific praise increased and the variability in student perceptions decreased from pre-baseline to intervention; however, the difference in the classroom's mean climate score under the two intervention rates was minimal (0.09). At the end of the optimal phase, during which Teacher A delivered specific praise at a rate of 0.40 statements per minute, the mean student rating on the CCS was 3.53 (*SD* = 0.32). This represents a mean increase of 0.44 points from pre-baseline to the end of the study. One standard deviation on the elementary student version of the Georgia Health Survey 2.0, from which this study's survey is adapted, is 0.47 (La

Salle, Zabek et al., 2016); therefore, the improvement in student perceptions of the climate in Classroom A amounts to approximately one standard deviation.

Teacher A's mean score on the CCS was 2.36 during pre-baseline (*SD* = 0.67). This indicates that she believed students only found the classroom climate to sometimes be positive. Under a rate of 0.40 specific praise statements per minute, her mean score was 2.91 (*SD* = 0.54) and under a rate of 0.80 specific praise statements per minute, her mean score was 3.18 (*SD* = 0.75). Both of these represent an increase from pre-baseline, and these data suggest that Teacher A's perceptions of the climate were more positive under the higher rate of specific praise. At the end of the optimal phase, her mean rating was 3.00 (*SD* = 0.63), which represents a mean increase of 0.64 points from pre-baseline to the end of the study.

Case B. Before beginning the baseline phase, Classroom B's overall mean score on the student CCS was 3.43 (*SD* = 0.46). Using the qualitative descriptors from the survey's Likert scale, this suggests that students often found the classroom climate to be positive prior to the beginning of the study, when specific praise was implemented at a naturally occurring rate. Under a rate of 0.40 specific praise statements per minute, the mean score was 3.29 (*SD* = 0.47) and under a rate of 0.80 specific praise statements per minute, the mean score was 3.25 (*SD* = 0.48). These data indicate that students found the classroom climate to be less positive when the teacher's use of specific praise increased, but the difference in the class mean under the two intervention rates was minimal (0.04). At the end of the optimal phase, during which Teacher B delivered specific praise at a rate of 0.40 statements per minute, the mean student rating on the CCS was 3.20 (*SD* = 0.44). This represents a mean decrease of 0.23 points from pre-baseline to the end of the study; however, the final rating still falls within the "often" range.

Teacher B's mean score on the CCS was 3.36 during pre-baseline (*SD* = 0.50). This indicates that she believed students often found the classroom climate to be positive, using the scale's qualitative indicators. Under a rate of 0.40 specific praise statements per minute, her mean score was 3.55 (*SD* = 0.52) and under a rate of 0.80 specific praise statements per minute, her mean score was 3.36 (*SD* = 0.50). These data suggest that Teacher B's perceptions of the climate were more positive under a rate of 0.40 statements per minute. At the end of the optimal phase, her mean rating was 4.00 (*SD* = 0.00), which represents a mean increase of 0.64 points from pre-baseline to the end of the study and indicates that she believed students always found the classroom climate to be positive.

Case C. Before beginning the baseline phase, Classroom C's overall mean score on the student CCS was 3.28 (*SD* = 0.36). This suggests that students often found the classroom climate to be positive prior to the beginning of the study, when specific praise was implemented at a naturally occurring rate. Under a rate of 0.40 specific praise statements per minute, the mean score was 3.25 (*SD* = 0.0.42) and under a rate of 0.80 specific praise statements per minute, the mean score was 3.21 (*SD* = 0.39). These data indicate that students found the classroom climate to be approximately as positive when the teacher's use of specific praise increased, and the difference in the class mean under the two intervention rates was minimal (0.04). At the end of the optimal phase, during which Teacher C delivered specific praise at a rate of 0.40 statements per minute, the mean student rating on the CCS was 3.23 (*SD* = 0.37). This represents a mean decrease of just 0.05 points from pre-baseline to the end of the study, while the variability in student ratings remained consistent across phases.

Teacher C's mean score on the CCS was 2.27 during pre-baseline (*SD* = 0.65). This indicates that she believed students sometimes found the classroom climate to be positive.

Under a rate of 0.40 specific praise statements per minute, her mean score was 3.00 (*SD* = 0.63) and under a rate of 0.80 specific praise statements per minute, her mean score was 3.00 (*SD* = 0.89). Both of these represent a substantial increase from pre-baseline, with no difference under the two intervention rates. At the end of the optimal phase, her mean rating was 3.09 (*SD* = 0.83), which represents a mean increase of 0.82 points from pre-baseline to the end of the study.

Case D. Before beginning the baseline phase, Classroom D's overall mean score on the student CCS was 3.23 (*SD* = 0.35). Using the qualitative descriptors from the survey's Likert scale, this suggests that students often found the classroom climate to be positive prior to the beginning of the study, when specific praise was implemented at a naturally occurring rate. Under a rate of 0.40 specific praise statements per minute, the mean score was 3.47 (*SD* = 0.24) and under a rate of 0.80 specific praise statements per minute, the mean score was 3.36 (*SD* = 0.40). These data indicate that students found the classroom climate to be more positive when the teacher's use of specific praise increased, with a larger increase under a rate of 0.40 statements per minute: 0.24 compared to 0.13. At the end of the optimal phase, during which Teacher D delivered specific praise at a rate of 0.80 statements per minute, the mean student rating on the CCS was 3.43 (*SD* = 0.46). This represents a mean increase of 0.20 points from pre-baseline to the end of the study.

Teacher D's mean score on the CCS was 3.09 during pre-baseline (*SD* = 0.70). This indicates that she believed students often found the classroom climate to be positive. Under a rate of 0.40 specific praise statements per minute, her mean score was 3.18 (*SD* = 0.60) and under a rate of 0.80 specific praise statements per minute, her mean score was 2.73 (*SD* = 0.65). These data suggest that Teacher D's perceptions of the climate were more positive under a rate of 0.40 statements per minute, and less positive under a rate of 0.80 statements per minute. At

the end of the optimal phase, her mean rating was 2.91 (*SD* = 0.54), which represents a mean increase of 0.18 points from pre-baseline to the end of the study.

Chapter V: Discussion

Current federal legislation and accountability policies have led educators and educational researchers to focus on the implementation of evidence-based classroom management strategies to promote appropriate student behavior and, in turn, higher levels of academic achievement (Epstein et al., 2008; Simonsen et al., 2015). Specific praise is one such strategy and decades of research have established a correlation between increased use of specific praise and improvements in student behavior (Epstein et al., 2008; Gable et al., 2009; Lane et al., 2011; Simonsen et al., 2008). However, the field has yet to identify the optimal rate at which this praise should be delivered to maximize student behavior outcomes (Scott et al., 2011; Stichter et al., 2009; Sutherland et al., 2000). This study attempted to address this gap in the literature through the systematic manipulation of the rate at which elementary school teachers delivered specific praise statements in the classroom. By using an alternating treatments design, embedded within a multiple baseline design across four teachers, the effects of two different rates of specific praise on class-wide levels of student disruptive behavior and on-task behavior were evaluated. More specifically, the teachers wore an external cueing device during a 30-min period of instruction and delivered specific praise each time the device vibrated while SDOs of student behavior were conducted; one watch was set to 0.40 statements per minute (i.e., the lower rate), one watch was set to 0.80 statements per minute (i.e., the higher rate), and teachers alternated between the watches daily according to a pre-determined schedule. Attention was also paid to the social validity of the two rates of specific praise, the relationship between the level of specific praise (i.e., individual, group, or class-wide) and student behavior outcomes, and possible changes in the classroom climate under the two rates of specific praise.

During baseline, teachers delivered specific praise at an average rate of 0.13 statements per minute, which is consistent with naturally occurring rates observed in other research studies (Floress & Jenkins, 2015; Reinke et al., 2013), and class-wide levels of student behavior warranted intervention using a universal classroom management strategy. Once teachers began wearing the watches and delivering specific praise at the prescribed rates during the intervention phase, substantial improvements in mean levels of both disruptive behavior and on-task behavior were observed across all classrooms. The immediacy of the specific praise intervention's effect was also observed across behaviors and classrooms, with the exception of on-task behavior in Classroom B, in which an upward trend occurred more gradually over the course of the intervention phase. Improvements in both student behaviors remained consistent through the optimal phase, when teachers stopped alternating between the rates and wore one watch consistently. Further, the variability in both disruptive behavior and on-task behavior observed during baseline decreased substantially during the intervention and optimal phases. Beyond the clear improvements in mean levels of behavior, this decreased variability is likely a socially valid outcome for teachers as their ability to plan for and deliver instruction may be greater if student behavior is not only better, but also more predictable. Altogether, between-phase data patterns indicate a causal relationship between increasing teachers' use of specific praise and sustained improvements in both disruptive and on-task behavior in the upper elementary school classroom and these results provide further support for the efficacy of specific praise as a classroom management strategy.

However, the primary focus of this study was the comparison the effect of two rates of specific praise on student behavior. This required an analysis of the within-phase data patterns of the study's intervention phase and results indicate that a rate of 0.80 specific praise statements

per minute was not uniformly more effective at improving student outcomes compared to a rate of 0.40 specific praise statements per minute. In regard to on-task behavior, providing specific praise twice as frequently resulted in an average of 0.10% lower mean levels of on-task behavior across all four classrooms, a difference that is so small it is likely inappreciable in the natural classroom setting. In regard to disruptive behavior, levels were 2.43% lower, on average, across all four classrooms under 0.80 statements per minute, but it is reasonable to conclude that doubling the rate at which specific praise was delivered did not yield meaningful improvements in class-wide levels of disruptive behavior over and above those observed under 0.40 statements per minute. For example, consider Classroom A, in which the mean level of disruptive behavior when specific praise was delivered at a rate of 0.40 specific praise statements per minute was 17.92% and 15.00% when specific praise was delivered at a rate of 0.80 statements per minute. This 2.92% difference equates to approximately 3-4 students being less disruptive during one 15-second interval each over the course of 30 min of instruction.

With teachers already experiencing high levels of stress over behavior management (Coalition for Psychology in Schools and Education, 2006; National Center for Education Statistics, 2007-2008), the results of this study suggest that it may be impractical for school-based consultants to encourage teachers to deliver specific praise at a rate higher than 0.40 statements per minute. The between-phase data pattern clearly justifies the recommendations for teachers to deliver more specific praise than typical (e.g., Epstein et al., 2008; Simonsen et al., 2008; Simonsen et al., 2015), but the within-phase data pattern does not seem to justify the effort required for teachers to deliver double the amount of specific praise, in going from 0.40 to 0.80 statements per minute.

In addition to specific praise statements, teachers also regularly delivered general praise statements during the study's intervention periods. Data on teachers' delivery of general praise statements were collected to ensure observers could discriminate between the two types of praise statements and provide context for the analysis of the specific praise data. During baseline, teachers delivered an average of 0.37 general praise statements per minute, in addition to the average 0.13 specific praise statements per minute, for an overall average praise rate of 0.50 statements per minute. Therefore, in practice, some teachers may not need to focus on increasing the frequency with which they deliver specific praise, but rather on making adjustments to the general praise statements they are already delivering on a frequent basis. An example of an adjustment might be saying, "Yes, Patrick, thank you for raising your hand," instead of, "Yes, Patrick, thank you."

This study's investigation of the relationship between the level of specific praise and student outcomes was exploratory in nature. The data indicate that as teachers moved through the study, their use of the three different levels of specific praise became more balanced. During baseline, more than three quarters of all specific praise statements were at the individual level but by the optimal phase, individual level statements accounted for about half of all specific praise statements. These results provide preliminary support for a more equal distribution of specific praise statements across levels (i.e., to individuals, to small groups of students, and to the entire class).

The study's second exploratory question investigated the relationship between teacher and student perceptions of the classroom climate and a systematic increase in the rate at which teachers delivered specific praise. Analysis of the CCS data reveals no clear relationship between student perceptions of climate and increasing praise in the classroom: the mean ratings

for Classroom A and Classroom D increased from pre-baseline to the end of the study while Classroom C's ratings remained largely the same and Classroom B's ratings decreased slightly. The use of specific praise may have a larger impact on teacher perceptions of classroom climate: with the exception of Teacher D, all teacher ratings increased from pre-baseline to the end of the study. Therefore, for these three teachers, a moderate increase in specific praise was associated not only with improved student behavior outcomes but also improved perceptions of the classroom climate.

A vital aspect of SCD research is the assessment of an intervention's social validity, or practicality, when a functional relationship between the intervention and socially important outcomes is established (Horner et al., 2005). This study's URP-IR data reveal no clear pattern in terms of which rate is more acceptable and more feasible, and this may be due to individual teacher preference. For example, Teacher C found 0.40 statements per minute to be more acceptable and more feasible than 0.80 statements per minute, but Teacher D found 0.80 statements per minute to be more acceptable and both rates to be equally feasible. It is important to note that even though Teacher A found both rates to be generally less acceptable and less feasible than the other three teachers, all teacher ratings reflected positive perceptions of both rates' acceptability and feasibility (i.e., greater than the scale's midpoint of 3), and at no point in time was either rate considered unacceptable or infeasible. It is possible that teachers' perceptions of the acceptability and feasibility of the two rates of specific praise are confounded by their perceptions of the external cueing devices and their experiences wearing those while teaching.

Limitations

There are design, measurement, and methodological limitations to consider when interpreting the results of this study. First, teachers volunteered to participate in the study and were therefore not selected randomly, threatening the internal validity of the study. They may have been more receptive to the use of specific praise as a classroom management strategy and their level of competency in delivering specific praise may have been greater than the typical elementary school teacher. To maximize internal validity, the researcher attempted to hold as many variables consistent as possible, focusing on a small range of grades and conducting the entire study in one district; however, the fact that all four classrooms were in the upper elementary grades and in two schools in the same district likely limits the generalizability of the study's results, and consequently, the external validity of the results. Finally, as mentioned above, the student researcher served as the primary data collector and conducted all study meetings with the teacher and was therefore not blind to the study's research questions or hypotheses.

The researcher attempted to conduct this study with the highest level of design quality possible, given a limited number of resources. Unfortunately, the study does not meet all the stringent standards set forth in the What Works Clearinghouse's *Single-Case Designs Technical Documentation* (Kratochwill et al., 2010). Most notably, IOA data were collected for just 16.67% of observations during which the higher rate of specific praise was implemented by Teachers A and C during the intervention phase and Teacher C's intervention phase allowed for only three possible demonstrations of the alternating sequence. However, even given these limitations, this study meets and largely exceeds the more general SCD research quality standards outlined by Horner et al. (2005).

Further, the researcher was not able to control all possible variables in the classroom setting. Although the majority of intervention periods were whole-group instruction, the proportion of time students spent in whole-group instruction, small-group instruction, and partner/independent work varied across phases. These fluctuations in the instructional activities may be inherent to the curriculum used by each teacher or the school calendar, and therefore inherent to applied educational research.

Beyond increasing the use of specific praise, classroom management reference documents also advise teachers to deliver more specific praise statements than error corrections or reprimands (e.g., Epstein et al., 2008; Simonsen et al., 2015). The fact that this study did not collect data on the error corrections or reprimands provided by teachers during observations limits the extent to which its results impact classroom management recommendations.

Finally, since data collection for this study was completed, guidelines on the assessment of school climate were published by the Positive Behavioral Interventions & Supports Office of Special Education Programs Technical Assistance Center (La Salle, McIntosh et al., 2016). These guidelines suggest that climate surveys be administered 1-2 times per academic year. Therefore, the repeated administration of the CCS within a matter of weeks may have compromised the internal validity of the results due to carryover effects from one administration to the next.

Directions for Future Research

This study represents an initial step toward the identification of an optimal rate of specific praise and there are many possible directions for future research. One is the direct comparison of rates of specific praise that are different than the two implemented here, and given that there is virtually an unlimited number of possible rates, the results of this study may guide researchers to

systematically select additional rates to be tested against one another. Further, studies comparing the effects of different rates of specific praise on student behavior should be conducted across a wide range of grade levels and a variety of settings, as it is possible that the optimal rate at which specific praise should be delivered may vary depending on the age of the students and the setting in which instruction is occurring. The scope of research studies involving the systematic manipulation of praise might also be widened to examine the impact general praise statements and reprimands or error corrections have on the relationship between specific praise and student behavior outcomes.

Another area for further exploration is the interaction between the rate and level of specific praise, as improvements in student behavior may not only be affected by how frequently specific praise is delivered but also to whom it is delivered. More specifically, the systematic manipulation of both the rate and level of specific praise in future research studies could address whether specific praise statements delivered to a group of students, be it a subset of the class or the entire class, differentially reinforce the behavior of each individual student in the group as effectively as specific praise statements delivered individually to each of those students. If so, can teachers deliver specific praise at a lower rate, and still achieve desired class-wide student behavior outcomes, if their specific praise statements are directed toward groups of students instead of individual students?

For the results from this line of research to be as translatable to practice as possible, it will be important to consider if the rates utilized are acceptable to teachers and feasible for them to implement daily, independent of the external cueing devices used to prompt them to deliver the praise. To that end, future research might involve the administration of separate social validity assessments for the cueing devices and each of the rates implemented. The results of

these social validity assessments might also help generate classroom management recommendations that balance a desire to maximize student behavior outcomes with the effort required from teachers to deliver the praise statements.

Methodologically, the relationship between systematically manipulated rates of specific praise and student outcomes could be examined over longer periods of time using different single-case research designs, such as reversal or changing criterion, and should be examined with greater numbers of teachers and classrooms. Further, if the relationship between specific praise and classroom climate is of interest in these studies, researchers might consider utilizing teacher and student climate surveys as pre/post measures.

Conclusion

The purpose of this study was to compare the effects of two systematically manipulated rates of specific praise, 0.40 statements per minute and 0.80 statements per minute, on class-wide levels of student behavior. Results suggest that a higher rate of specific praise is not necessarily associated with more positive student outcomes, as substantial improvements in disruptive behavior and on-task behavior were observed under both rates of specific praise. Despite several limitations, the results from this study may assist teachers in the use of specific praise as a universal classroom management strategy, provide new information for school-based consultants to consider when supporting teachers' implementation of classroom management strategies, and begin to move the field of classroom management research closer to the identification of an optimal rate at which specific praise should be delivered.

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Figures and Tables

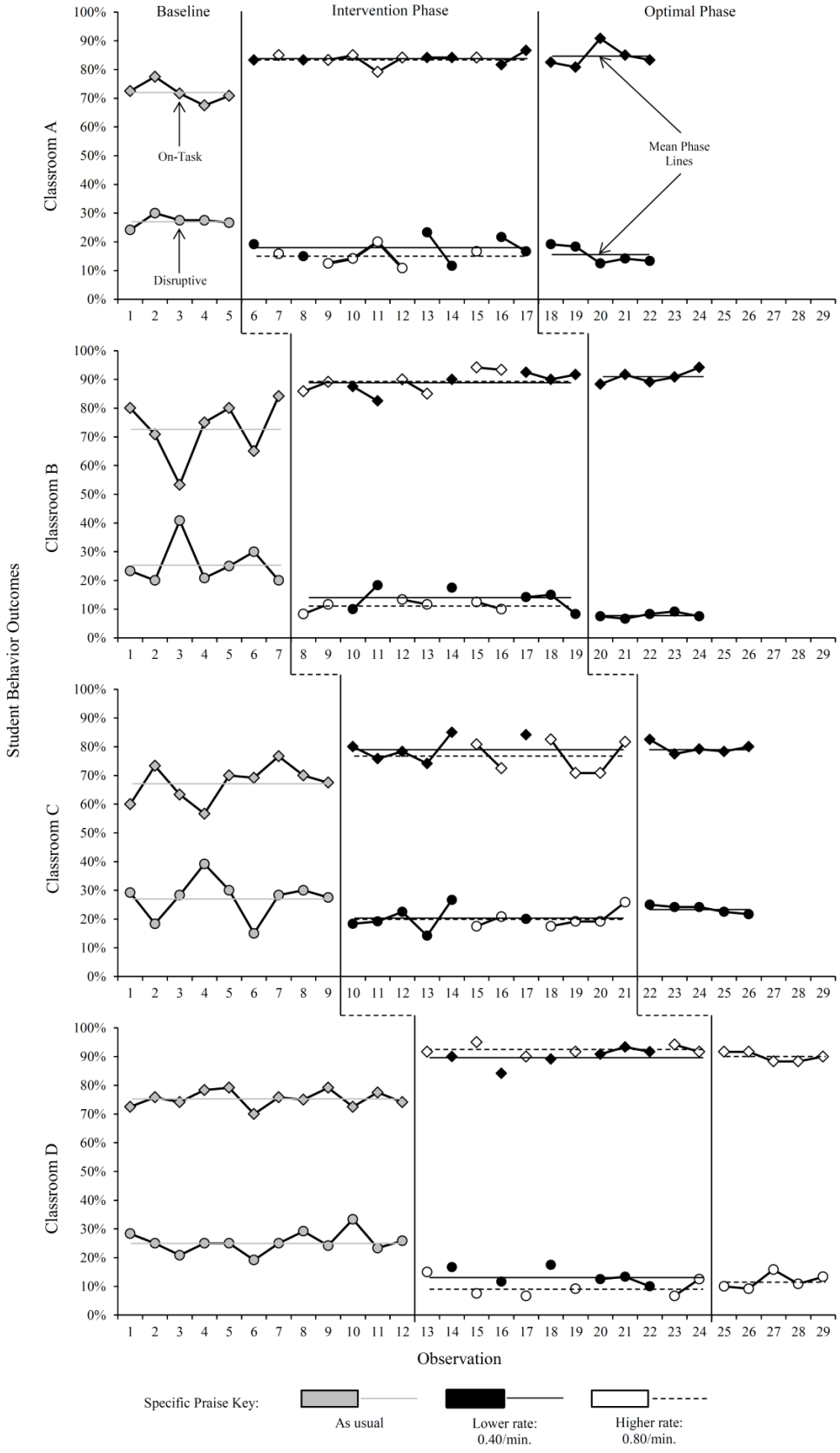


Figure 1. Percent of intervals disruptive and on-task behavior observed across classrooms

Table 1

Characteristics of participating schools

Characteristic	School 1		School 2	
Enrollment information:				
Grade levels of students served	Pre-K to Grade 5		Pre-K to Grade 5	
Total number of enrolled students	317		346	
Male Students	173	54.57%	181	52.31%
Female Students	144	45.43%	165	47.69%
Race/ethnicity of enrolled students:				
Asian	6	1.89%	48	13.87%
Black or African American	60	18.93%	37	10.69%
Hispanic/Latino of any race	77	24.39%	45	13.01%
Two or more races	19	5.99%	13	3.76%
White	155	48.90%	203	58.67%
Additional Student Characteristics:				
Students who are English Language Learners	0	0.00%	36	10.40%
Students who are eligible for free/reduced lunch	208	65.62%	170	49.13%
Students who receive special education services	50	15.77%	64	18.50%
Discipline:				
Number of in-school suspensions	39		11	
Number of out-of-school suspensions	27		14	

Note. Data presented here are from the 2013-2014 school year. Adapted from Connecticut State Department of Education, 2016, *Performance and Profile Reports*, retrieved from http://edsight.ct.gov/SASPortal/main.do.

Table 2

Number and percent of sessions during which a second rater was present across classrooms, phases, and conditions

Classroom	Baseline	Intervention		Optimal	Total
		Lower: 0.40/min	Higher: 0.80/min		
Classroom A					
Number of Obs. with 2nd Rater	1	2	1	1	5
Total Number of Obs.	5	6	6	5	22
Percent of Obs. with 2nd Rater	20.00%	33.33%	16.67%	20.00%	22.73%
Classroom B					
Number of Obs. with 2nd Rater	2	2	2	1	7
Total Number of Obs.	7	6	6	5	24
Percent of Obs. with 2nd Rater	28.57%	33.33%	33.33%	20.00%	29.17%
Classroom C					
Number of Obs. with 2nd Rater	2	2	1	1	6
Total Number of Obs.	9	6	6	5	26
Percent of Obs. with 2nd Rater	22.22%	33.33%	16.67%	20.00%	23.08%
Classroom D					
Number of Obs. with 2nd Rater	3	2	2	1	8
Total Number of Obs.	12	6	6	5	29
Percent of Obs. with 2nd Rater	25.00%	33.33%	33.33%	20.00%	27.59%
Across All Classrooms					
Number of Obs. with 2nd Rater	8	8	6	4	26
Total Number of Obs.	33	24	24	20	101
Percent of Obs. with 2nd Rater	24.24%	33.33%	25.00%	20.00%	25.74%

Table 3

Inter-observer agreement (IOA) data on all observed variables

Variable	Case A	Case B	Case C	Case D	Overall
Student On-Task Behavior					
Baseline	91.67[R]	93.75	93.34	91.94	92.68
Lower Rate: 0.40/min	96.25	95.42	96.67	96.67	96.25
Higher Rate: 0.80/min	95.83[R]	96.67	90.00[R]	97.92	95.11
Optimal	93.33[R]	95.83[R]	96.67[R]	95.83[R]	95.42
Student Disruptive Behavior					
Baseline	96.67[R]	93.34	94.17	95.00	94.80
Lower Rate: 0.40/min	98.75	96.67	97.50	95.84	97.19
Higher Rate: 0.80/min	97.50[R]	96.25	91.67[R]	97.08	95.63
Optimal	90.00[R]	95.83[R]	95.00[R]	95.00[R]	93.96
Specific Praise: Individual					
Baseline	99.17[R]	99.17	99.17	99.17	99.17
Lower Rate: 0.40/min	99.17	99.59	100.00	99.17	99.48
Higher Rate: 0.80/min	99.17[R]	99.38	99.17[R]	99.59	99.33
Optimal	96.67[R]	100.00[R]	100.00[R]	100.00[R]	99.17
Specific Praise: Group					
Baseline	100.00[R]	100.00	99.59	99.72	99.83
Lower Rate: 0.40/min	99.17	99.59	99.17	100.00	99.48
Higher Rate: 0.80/min	97.50[R]	99.59	99.17[R]	99.59	98.96
Optimal	97.50[R]	100.00[R]	100.00[R]	98.33[R]	98.96
Specific Praise: Class-wide					
Baseline	100.00[R]	99.59	100.00	100.00	99.90
Lower Rate: 0.40/min	99.17	99.59	100.00	100.00	99.69
Higher Rate: 0.80/min	100.00[R]	100.00	100.00[R]	100.00	100.00
Optimal	100.00[R]	100.00[R]	100.00[R]	98.33[R]	99.58
General Praise					
Baseline	93.48[R]	97.92	97.50	93.89	95.70
Lower Rate: 0.40/min	97.09	98.96	99.59	96.67	98.08
Higher Rate: 0.80/min	95.83[R]	97.09	98.33[R]	97.08	97.08
Optimal	95.42[R]	99.17[R]	98.33[R]	94.17[R]	96.77
Treatment Integrity: Adherence					
Baseline	---	---	---	---	---
Lower Rate: 0.40/min	100.00	100.00	100.00	100.00	100.00
Higher Rate: 0.80/min	100.00[R]	100.00	100.00[R]	100.00	100.00
Optimal	100.00[R]	100.00[R]	100.00[R]	100.00[R]	100.00
Treatment Integrity: Quality					
Baseline	100.00[R]	100.00	100.00	100.00	100.00
Lower Rate: 0.40/min	100.00	100.00	100.00	100.00	100.00
Higher Rate: 0.80/min	100.00[R]	100.00	100.00[R]	100.00	100.00
Optimal	100.00[R]	100.00[R]	100.00[R]	100.00[R]	100.00

Note. IOA data are presented as means across IOA sessions unless denoted, as some phases included only one IOA session ([R] single IOA rating)

Table 4

General praise data, presented as a rate per minute, across teachers, phases, and conditions

Teacher	Baseline	Intervention		Optimal
		Lower Rate: 0.40/min	Higher Rate: 0.80/min	
Teacher A				
Mean	0.57	0.41	0.35	0.51
(SD)	(0.18)	(0.31)	(0.15)	(0.27)
Range	0.37-0.83	0.13-0.87	0.23-0.57	0.17-0.90
Teacher B				
Mean	0.29	0.08	0.40	0.22
(SD)	(0.15)	(0.27)	(0.14)	(0.09)
Range	0.07-0.57	0.20-0.40	0.23-0.57	0.13-0.33
Teacher C				
Mean	0.16	0.11	0.09	0.11
(SD)	(0.09)	(0.06)	(0.10)	(0.07)
Range	0.03-0.30	0.00-0.17	0.00-0.27	0.03-0.20
Teacher D				
Mean	0.45	0.38	0.44	0.40
(SD)	(0.21)	(0.14)	(0.13)	(0.19)
Range	0.17-0.87	0.23-0.63	0.27-0.63	0.13-0.63

Table 5

Treatment integrity (TI) data across teachers, phases, and conditions

Teacher	Adherence		Quality			
	Number of Observations Rated *Implemented with Deviation* or *Implemented Inappropriately* and Excluded from Data Analysis	Number of Observations Rated *Implemented as Planned* and Included in Data Analysis	Number of Observations Rated *Very Good*	Number of Observations Rated *Fair*	Number of Observations Rated *Poor*	Number of Observations without Specific Praise Statements
Teacher A						
Baseline	---	---	5/5	0/5	0/5	0/5
Lower Rate: 0.40/min	0/6	6/6	6/6	0/6	0/6	---
Higher Rate: 0.80/min	0/6	6/6	6/6	0/6	0/6	---
Optimal	0/5	5/5	5/5	0/5	0/5	---
Teacher B						
Baseline	---	---	7/7	0/7	0/7	0/7
Lower Rate: 0.40/min	0/6	6/6	6/6	0/6	0/6	---
Higher Rate: 0.80/min	1/7	6/7	6/6	0/6	0/6	---
Optimal	0/5	5/5	5/5	0/5	0/5	---
Teacher C						
Baseline	---	---	9/9	0/9	0/9	0/9
Lower Rate: 0.40/min	0/6	6/6	6/6	0/6	0/6	---
Higher Rate: 0.80/min	0/6	6/6	6/6	0/6	0/6	---
Optimal	0/5	5/5	5/5	0/5	0/5	---
Teacher D						
Baseline	---	---	10/12	0/12	0/12	2/12
Lower Rate: 0.40/min	0/6	6/6	6/6	0/6	0/6	---
Higher Rate: 0.80/min	1/7	6/7	6/6	0/6	0/6	---
Optimal	1/6	5/6	5/5	0/5	0/5	---

Note. During baseline, quality ratings were able to be determined for observations during which specific praise statements were delivered.

Table 6

Procedural integrity data for study meetings and trainings

Teacher	Introductory Meeting	Specific Praise Training			Specific Praise Re-Training	Final Meeting
	Steps Delivered According to Meeting Protocol	Adherence	Quality	Implementer Responsiveness	Steps Delivered According to Meeting Protocol	Steps Delivered According to Meeting Protocol
Teacher A						
Self-Ratings	100%	100%	100%	100%	---	100%
2nd Rater	100%	100%	100%	100%	---	100%
Inter-Rater Agreement	100%	100%	100%	100%	---	100%
Teacher B						
Self-Ratings	100%	100%	100%	100%	---	100%
2nd Rater	100%	100%	100%	100%	---	100%
Inter-Rater Agreement	100%	100%	100%	100%	---	100%
Teacher C						
Self-Ratings	100%	100%	100%	100%	---	100%
2nd Rater	100%	100%	100%	100%	---	100%
Inter-Rater Agreement	100%	100%	100%	100%	---	100%
Teacher D						
Self-Ratings	100%	100%	100%	100%	100%	100%
2nd Rater	100%	100%	100%	100%	100%	100%
Inter-Rater Agreement	100%	100%	100%	100%	100%	100%

Table 7

Descriptive information about intervention periods and observations

Teacher	Intervention Period		Observations			
			Average Percent of Time Spent in Each Instructional Activity During the 30-Min Observations			Average Number of Additional Adults Present
	Content Area	Scheduled Time	Whole-Group Instruction	Small-Group Instruction	Partner/ Independent Work	
Classroom A						
Baseline	Math	8:45am	97.17%	2.83%	0.00%	1.0
Lower Rate: 0.40/min			66.67%	33.33%	0.00%	0.8
Higher Rate: 0.80/min			82.50%	17.50%	0.00%	1.0
Optimal			78.50%	21.50%	0.00%	0.6
Classroom B						
Baseline	ELA	1:45pm	76.67%	0.00%	23.33%	0.0
Lower Rate: 0.40/min			98.75%	0.00%	1.25%	0.0
Higher Rate: 0.80/min			100.00%	0.00%	0.00%	0.0
Optimal			100.00%	0.00%	0.00%	0.0
Classroom C						
Baseline	Math	10:45am	52.50%	39.02%	8.52%	0.9
Lower Rate: 0.40/min			78.75%	21.25%	0.00%	1.0
Higher Rate: 0.80/min			96.25%	3.75%	0.00%	1.2
Optimal			96.17%	3.83%	0.00%	1.0
Classroom D						
Baseline	Math	9:30am	78.40%	8.54%	13.06%	0.0
Lower Rate: 0.40/min			94.03%	0.00%	5.97%	0.0
Higher Rate: 0.80/min			91.67%	1.39%	6.94%	0.0
Optimal			94.33%	0.00%	5.67%	0.0

Table 8

Specific praise data, presented as a rate per minute, across teachers, phases, and conditions

Specific Praise Statements	Teacher A		Teacher B		Teacher C		Teacher D	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Total								
Baseline	0.21	(0.12)	0.13	(0.04)	0.13	(0.09)	0.06	(0.04)
Lower Rate: 0.40/min	0.42	(0.02)	0.42	(0.02)	0.40	(0.02)	0.42	(0.02)
Higher Rate: 0.80/min	0.77	(0.01)	0.79	(0.03)	0.79	(0.03)	0.81	(0.03)
Optimal	0.41	(0.01)	0.43	(0.00)	0.43	(0.01)	0.78	(0.02)
Individual Level								
Baseline	0.18	(0.10)	0.11	(0.04)	0.09	(0.08)	0.04	(0.04)
Lower Rate: 0.40/min	0.31	(0.13)	0.23	(0.10)	0.20	(0.08)	0.36	(0.07)
Higher Rate: 0.80/min	0.57	(0.20)	0.54	(0.06)	0.35	(0.10)	0.57	(0.17)
Optimal	0.26	(0.11)	0.17	(0.03)	0.25	(0.06)	0.39	(0.08)
Group Level								
Baseline	0.03	(0.03)	0.01	(0.03)	0.04	(0.03)	0.01	(0.02)
Lower Rate: 0.40/min	0.10	(0.11)	0.03	(0.03)	0.17	(0.08)	0.05	(0.05)
Higher Rate: 0.80/min	0.13	(0.21)	0.11	(0.04)	0.38	(0.10)	0.18	(0.13)
Optimal	0.13	(0.12)	0.03	(0.02)	0.17	(0.07)	0.21	(0.08)
Class-wide Level								
Baseline	0.01	(0.03)	0.00	(0.01)	0.00	(0.01)	0.01	(0.01)
Lower Rate: 0.40/min	0.02	(0.02)	0.15	(0.11)	0.03	(0.04)	0.01	(0.01)
Higher Rate: 0.80/min	0.07	(0.06)	0.14	(0.07)	0.07	(0.03)	0.06	(0.09)
Optimal	0.02	(0.03)	0.23	(0.03)	0.01	(0.02)	0.18	(0.07)

Table 9

Disruptive behavior: Class-wide levels across classrooms, phases, and conditions

Classroom	Baseline	Intervention		Optimal
		Lower Rate: 0.40/min	Higher Rate: 0.80/min	
Classroom A				
Mean	27.17%	17.92%	15.00%	15.50%
(SD)	(2.09)	(4.34)	(3.25)	(3.04)
Range	24.17%-30.00%	11.67%-23.33%	10.83%-20.00%	12.50%-19.17%
Classroom B				
Mean	25.71%	13.89%	11.25%	7.83%
(SD)	(7.55)	(4.00)	(1.81)	(0.95)
Range	20.00%-40.83%	8.33%-18.33%	8.33%-13.33%	6.67%-9.17%
Classroom C				
Mean	27.31%	20.14%	20.00%	23.50%
S(D)	(7.01)	(4.20)	(3.12)	(1.37)
Range	15.00%-39.17%	14.17%-26.67%	17.50%-25.83%	21.67%-25.00%
Classroom D				
Mean	25.35%	13.61%	9.58%	11.83%
(SD)	(3.72)	(2.92)	(3.45)	(2.73)
Range	19.17%-33.33%	10.00%-17.50%	6.67%-15.00%	9.17%-15.83%

Note. Disruptive behavior is expressed as a percent of intervals in which the behavior was observed; Classrooms A-C delivered specific praise at the lower rate in the optimal phase (i.e., 0.40 statements per minute), whereas Classroom D delivered specific praise at the higher rate (i.e., 0.80 statements per minute).

Table 10

On-task behavior: Class-wide levels across classrooms, phases, and conditions

Classroom	Baseline	Intervention		Optimal
		Lower Rate: 0.40/min	Higher Rate: 0.80/min	
Classroom A				
Mean	72.00%	83.89%	83.47%	84.50%
(SD)	(3.61)	(1.64)	(2.20)	(3.85)
Range	67.50%-77.50%	81.67%-86.67%	79.17%-85.00%	80.83%-90.83%
Classroom B				
Mean	72.62%	89.03%	89.58%	90.83%
(SD)	(10.65)	(3.63)	(3.75)	(2.28)
Range	53.33%-84.17%	82.50%-92.50%	85.00%-94.17%	88.33%-94.17%
Classroom C				
Mean	67.41%	79.58%	76.53%	79.50%
(SD)	(6.37)	(4.37)	(5.69)	(1.92)
Range	56.67%-76.67%	74.17%-85.00%	70.83%-82.50%	77.50%-82.50%
Classroom D				
Mean	75.35%	89.86%	92.36%	90.00%
(SD)	(2.87)	(3.14)	(1.86)	(1.67)
Range	70.00%-79.17%	84.17%-93.33%	90.00%-95.00%	88.33%-91.67%

Note. On-task behavior is expressed as a percent of intervals in which the behavior was observed; Classrooms A-C delivered specific praise at the lower rate in the optimal phase (i.e., 0.40 statements per minute), whereas Classroom D delivered specific praise at the higher rate (i.e., 0.80 statements per minute).

Table 11

URP-IR social validity data across teachers, phases, and conditions

Teacher	Intervention				Optimal			
	Acceptability		Feasibility		Acceptability		Feasibility	
	Lower Rate: 0.40/min	Higher Rate: 0.80/min	Lower Rate: 0.40/min	Higher Rate: 0.80/min	Lower Rate: 0.40/min	Higher Rate: 0.80/min	Lower Rate: 0.40/min	Higher Rate: 0.80/min
Teacher A								
Mean	3.11	3.78	4.33	4.50	3.33	---	5.00	---
(SD)	(1.17)	(1.09)	(0.82)	(0.84)	(1.00)	---	(0.00)	---
Teacher B								
Mean	5.89	5.56	6.00	6.00	6.00	---	6.00	---
(SD)	(0.33)	(0.52)	(0.00)	(0.00)	(0.00)	---	(0.00)	---
Teacher C								
Mean	5.22	4.78	6.00	5.83	4.78	---	5.50	---
(SD)	(0.97)	(1.30)	(0.00)	(0.41)	(0.83)	---	(0.55)	---
Teacher D								
Mean	4.67	5.44	5.83	5.83	---	5.00	---	5.67
(SD)	(1.22)	(1.13)	(0.41)	(0.41)	---	(0.50)	---	(0.52)
All Teachers								
Mean	4.72	4.89	5.54	5.54	4.70	5.00	5.50	5.67
(SD)	(0.92)	(1.01)	(0.31)	(0.41)	(0.61)	(0.50)	(0.18)	(0.52)

Note. URP-IR = Usage Rating Profile-Intervention Revised; Measure uses a 6-point Likert scale (1 = *strongly disagree* to 6 = *strongly agree*); Acceptability scale is composed of nine items and Feasibility scale is composed of six items; Teachers A-C implemented the lower rate of specific praise during the optimal phase and Teacher D implemented the higher rate of specific praise.

Table 12

Percent of specific praise statements by level and student behavior outcomes across teachers, classrooms, phases, and conditions

Level of Specific Praise Statement	Baseline	Intervention		Optimal
		Lower Rate: 0.40/min	Higher Rate: 0.80/min	
Teacher A				
Individual	81.26%	72.37%	73.38%	63.93%
Group	12.50%	23.68%	17.27%	31.15%
Class-wide	6.25%	3.95%	9.35%	4.92%
Teacher B				
Individual	88.89%	56.00%	68.53%	38.46%
Group	7.41%	8.00%	13.29%	7.69%
Class-wide	3.70%	36.00%	18.18%	53.85%
Teacher C				
Individual	65.71%	50.00%	44.06%	57.81%
Group	31.43%	43.06%	47.55%	39.06%
Class-wide	2.86%	6.94%	8.39%	3.13%
Teacher D				
Individual	76.19%	86.67%	70.34%	49.57%
Group	14.29%	12.00%	22.76%	27.35%
Class-wide	9.52%	1.33%	6.90%	23.08%
Across All Teachers				
Individual	78.01%	66.26%	64.08%	52.44%
Group	16.41%	21.69%	25.22%	26.31%
Class-wide	5.58%	12.06%	10.71%	21.25%
Student Behavior	Baseline	Intervention		Optimal
		Lower Rate: 0.40/min	Higher Rate: 0.80/min	
Classroom A				
Disruptive	27.17%	17.92%	15.00%	15.50%
On-Task	72.00%	83.89%	83.47%	84.50%
Classroom B				
Disruptive	25.71%	13.89%	11.25%	7.83%
On-Task	72.62%	89.03%	89.58%	90.83%
Classroom C				
Disruptive	27.31%	20.14%	20.00%	23.50%
On-Task	67.41%	79.58%	76.53%	79.50%
Classroom D				
Disruptive	25.35%	13.61%	9.58%	11.83%
On-Task	75.35%	89.86%	92.36%	90.00%
Across All Classrooms				
Disruptive	26.39%	16.39%	13.98%	14.65%
On-Task	71.84%	85.59%	85.49%	86.21%

Table 13

Teacher and student perceptions of classroom climate across phases and conditions

Case	Pre-Baseline	Intervention		Optimal
		Lower Rate: 0.40/min	Higher Rate: 0.80/min	
Case A				
Classroom A				
Mean	3.09	3.49	3.40	3.53
(SD)	(0.59)	(0.40)	(0.38)	(0.32)
Teacher A				
Mean	2.36	2.91	3.18	3.00
(SD)	(0.67)	(0.54)	(0.75)	(0.63)
Case B				
Classroom B				
Mean	3.43	3.29	3.25	3.20
(SD)	(0.46)	(0.47)	(0.48)	(0.44)
Teacher B				
Mean	3.36	3.55	3.36	4.00
(SD)	(0.50)	(0.52)	(0.50)	(0.00)
Case C				
Classroom C				
Mean	3.28	3.25	3.21	3.23
(SD)	(0.36)	(0.42)	(0.39)	(0.37)
Teacher C				
Mean	2.27	3.00	3.00	3.09
(SD)	(0.65)	(0.63)	(0.89)	(0.83)
Case D				
Classroom D				
Mean	3.23	3.47	3.36	3.43
(SD)	(0.35)	(0.24)	(0.40)	(0.46)
Teacher D				
Mean	3.09	3.18	2.73	2.91
(SD)	(0.70)	(0.60)	(0.65)	(0.54)

Note. Ratings on both the teacher and student versions of the Classroom Climate Survey (CCS) are based on a 4-point Likert scale (1 = *never*, 2 = *sometimes*, 3 = *often*, 4 = *always*).

Appendices

Appendix A: Teacher Consent Form

Consent Form for Participation in a Research Study

UCONN
UNIVERSITY OF CONNECTICUT

Principal Investigator: Lisa M. H. Sanetti, PhD
Student Researcher: Kathleen M. Williamson, MA
Study Title: Comparing the Effects of Two Rates of Specific Praise on Student Behavior

Introduction

You are invited to participate in a dissertation research study on the effects of different rates of specific praise on elementary school students' behavior in the classroom. This study is being conducted by Kathleen Williamson, MA and supervised by Lisa Sanetti, PhD, both from the University of Connecticut's Neag School of Education.

Why is this study being done?

The purpose of this research study is to provide an initial test of two different rates of specific praise and their effects on student levels of on-task and disruptive behavior. Information gathered will help to refine recommendations about best-practices in classroom management. A secondary purpose is to evaluate how feasible and acceptable these rates of praise are in practice. To meet this purpose, we need teachers who (a) would benefit from additional assistance with increasing their use of specific praise, as evidenced by observational data and (b) can effectively deliver both versions of the study's specific praise intervention after training.

What are the study procedures? What will I be asked to do?

If you agree to take part in this study, you will be asked to do the following:

If you consent to participate, we will collect some information about you and your classroom. First, we will ask you to complete a background information form. Then, we will meet with you for about 30 minutes and complete 3-14 classroom observations to gather information about your present use of specific praise as a classroom management practice and typical levels of student on-task and disruptive behavior. After these observations, which will be conducted over the course of one to five weeks, we will work with you for another 30 minutes to increase your knowledge of and skills related to using specific praise.

Then, you will be asked to implement two versions of the specific praise intervention for 2- 4 weeks by wearing a watch during a 30-minute period of instruction each day and delivering specific praise when it vibrates; the two versions of the intervention consist of two different vibration rates. During this time, we will observe your classroom up to five times per week, for approximately 30 minutes per observation, and

take data on class-wide student behavior and implementation of specific praise. Then, during the final portion of the study, you will be asked to implement the version of the intervention that has been more effective for an additional 1-2 weeks, during which time observations will continue as usual. If you struggle to implement specific praise at any point during these phases, an additional training session will be conducted. If you continue to struggle after this session, your participation in the study will be terminated.

At four times throughout the study, we will ask you to (a) administer a brief classroom climate survey to your students and (b) complete your own brief classroom climate survey. This will occur before we begin observing your classroom, twice while your implement the two rates of specific praise, and a final time while you implement the more effective rate of praise. It should take approximately 5 minutes to administer the survey to the students and another 5 minutes to complete your survey. No identifying student information will be collected on these surveys and the responses will only be analyzed at the class-wide level, as the researcher will consider overall student perceptions of the classroom.

You will also complete a brief measure about the feasibility and acceptability of the rates of specific praise during the study. This measure will be completed twice while you implement the two rates of specific praise and a third time while you implement the more effective rate of praise. It should take approximately 5 minutes to complete each time.

After implementing the intervention for a total of three to six weeks, and completing all study measures, we will discuss changes in your class's behavior and your use of specific praise, as well as any changes in the classroom climate, in a brief meeting that will require approximately 15-20 minutes of your time.

Throughout the study, all meetings and observations will be scheduled in advance at times of convenience to you. All meetings will be audiotaped so we can be sure all needed information was collected.

What other options are there?

You may continue addressing classroom student behavior needs the way you have been or utilize school-based resources to obtain additional support in addressing class-wide behavior needs.

What are the risks or inconveniences of the study?

Although the risks associated with participation in the study are minimal, you may experience low levels of anxiety during your involvement in the study. However, you, and/or the researchers may immediately terminate any activity at any time, without penalty. Inconveniences may include time to meet with the student researcher and complete the intervention implementation-related tasks.

What are the benefits of the study?

Benefits to participating in this study include potentially (a) decreasing disruptive behavior in your classroom and (b) increasing your students' on-task behavior as a result of using specific praise. Furthermore, this study will extend the literature on the use of specific praise as best practice in classroom behavior management.

Will I receive payment for participation? Are there costs to participate?

There are no costs to participation. As an acknowledgement of your time and effort, you will be provided with a gift card to Amazon valued at $10 for each week of your participation at the completion of the study. You will also receive materials used in the specific praise intervention to support your continued implementation of specific praise.

How will my personal information be protected?

The following procedures will be used to protect the confidentiality of your data. Research records will be labeled with an assigned ID number. The ID number will be a two-digit number that reflects how many people have enrolled in the study. A master key that links names and codes will be maintained in a separate and secure location. Paper-based data will be stored inside a locked file cabinet inside a locked office suite in the Department of Educational Psychology at the University of Connecticut. All electronic files (e.g., database, spreadsheet, etc.) containing identifiable information will be password protected. Electronic versions of reports for each teacher participant will be saved with codes (i.e., "Teacher" in place of teacher name) for all identifying information. Any computer hosting such files will also have password protection to prevent access by unauthorized users. Only the student-researcher, principal investigator, and graduate students completing inter-observer agreement will have access to the passwords.

At the conclusion of this study, the researchers may publish their findings. Information will be presented in summary format and you will not be identified in any publications or presentations. We will refer to the school as a public or school program setting located in the Northeast. All raw and electronic data will be maintained at least 7 years after the end of the project; data will be maintained longer if necessary to complete publication of results.

You should also know that the UConn Institutional Review Board (IRB) and Research Compliance Services may inspect study records as part of its auditing program, but these reviews will only focus on the researchers and not on your responses or involvement. The IRB is a group of people who review research studies to protect the rights and welfare of research participants.

Can I stop being in the study and what are my rights?

You do not have to be in this study if you do not want to. If you agree to be in the study, but later change your mind, you may drop out at any time. There are no penalties or consequences of any kind if you decide that you do not want to participate. You do not have to answer any question that you do not want to answer during meetings or while completing surveys.

Whom do I contact if I have questions about the study?

Take as long as you would like before you make a decision. We will be happy to answer any questions you have about this study. If you have further questions about this study or if you have a research-related problem, you may contact the student investigator, Kathleen Williamson (860-978-5148) or the supervising investigator, Lisa Sanetti (860-486-2747). If you have any questions concerning your rights as a research participant, you may contact the University of Connecticut Institutional Review Board (IRB) at 860-486-8802.

Documentation of Consent:

I have read this form and decided that I will participate in the project described above. Its general purposes, the particulars of involvement and possible risks and inconveniences have been explained to my satisfaction. I understand that I can withdraw at any time. My signature also indicates that I have received a copy of this consent form.

_____	_____	_____
Participant Signature:	Print Name:	Date:
_____	_____	_____
Signature of Person Obtaining Consent	Print Name:	Date:

Appendix B: Parental Notification Form

Parental Notification Form Regarding Participation in a Research Study

Principal Investigator: Lisa M. H. Sanetti, PhD
Student Researcher: Kathleen M. Williamson, MA
Study Title: Comparing the Effects of Two Rates of Specific Praise on Student Behavior

Introduction/Why is this study being done?

Researchers from the University of Connecticut's Neag School of Education are conducting a research study at your child's school. This form will give you the information about what is being done. We encourage you to take some time to read about the study and ask questions now or at any time.

The purpose of this research is to study best practices in using specific praise as a classroom management strategy. The focus of the study is your child's teacher, not your child. No identifiable data will be collected about your child and your child will not be asked to do anything beyond participating in typical education practices as a part of this study.

What are the study procedures? What will my child be asked to do?

We will observe the classroom to learn about how your child's teacher uses specific praise and typical student behavior in the classroom. Then, if it appears that the teacher will benefit from participation in this study, we will provide the teacher with training to increase his or her use of specific praise, which is a best practice in classroom behavior management. Throughout both of these stages, we will be observing the classroom for 30 minutes up to five times per week. Sometimes there may be two people observing (e.g., the student researcher and another graduate student) at the same time, to be sure the data we are collecting is reliable.

Your child will be asked to complete a brief classroom climate survey to help the researcher understand what effects the teacher's use of specific praise has on student perceptions of the climate in the room. The survey includes 11 statements and asks students to rate their agreement with the statements using a 4-point Likert scale (i.e., always, often, sometimes, never). It is written at a 2nd grade reading level, but the teacher can assist students with reading and responding to the questions as needed. The surveys will be anonymous and no information about your child will be collected. Additionally, the survey data will only be analyzed at the class-wide level; individual survey responses will not be analyzed.

The survey will be administered four times across 4-11 weeks of school and should require approximately 5 minutes to complete each time; therefore, your child should be engaged in this study-related activity for

a total of approximately 20 minutes. In the state of Connecticut, the completion of climate measures occurs regularly in schools and is considered typical educational practice.

What are the risks or inconveniences of the study?

It is possible that your child may experience some discomfort when completing the classroom climate survey if he or she finds it difficult to read and respond to the questions due to difficulties with reading comprehension or fluency. To minimize this risk, teachers will provide verbal directions to the students about how to complete the survey and will be able to assist students while they complete the survey. This assistance may include re-reading the directions, reading the statements to your child, and/or reading the answer options for each statement; as this survey is not intended to assess your child's reading ability, there is no limit on the amount of support he or she receives to complete it.

As the data from the surveys will be aggregated and observational data will be collected at the class-wide level, we do not believe that there are any additional known risks to your child.

What are the benefits of the study?

The potential benefits of your child's teacher participating in this study include decreasing levels of problem behavior and increasing levels of appropriate behavior in your child's classroom as a result of the specific praise intervention. Additionally, the overall classroom climate may become more positive as a result of the specific praise.

How will my child's information be protected?

No identifiable data are being collected about your child. That is, no data that are being collected could ever be linked to your child.

You should also know that the UConn Institutional Review Board (IRB) and the Office of Research Compliance may inspect study records as part of its auditing program, but these reviews will only focus on the researchers. The IRB is a group of people who review research studies to protect the rights and welfare of research participants.

Whom do I contact if I have questions about the study?

We will be happy to answer any question you have about this study. If you have further questions about this project or if you have a research-related problem, you may contact the student investigator, Kathleen Williamson (860-978-5148) or the supervising investigator, Lisa Sanetti (860-486-2747). If you have any questions concerning your child's rights as a research participant, you may contact the University of Connecticut Institutional Review Board (IRB) at 860-486-8802.

Appendix C: Teacher Demographics Form

Teacher Demographics Form

Thank you for participating in this project. Please note that all names on this and other forms will be removed and replaced with an ID number. Names will not be shared with anyone outside this project.

TEACHER INFORMATION

Name: _____ **Today's Date**: _____
First Middle Initial Last Month Day Year

School: _____ **E-mail:** _____

Birthdate: _____ **Cell Phone Number:** _____
Month Day Year

Please indicate your gender: ☐ Male ☐ Female

Ethnicity: ☐ Hispanic or Latino ☐ Not Hispanic or Latino

Race:

- ☐ White
- ☐ Black or African American
- ☐ Asian
- ☐ American Indian or Alaskan Native
- ☐ Native Hawaiian or Other Pacific Islander
- ☐ I prefer not to provide an answer

Please indicate the grade you currently teach? (check all that apply)

☐ 3rd ☐ 4th ☐ 5th

How many years of teaching experience do you have? _____

On average, how many students are present in your classroom at one time? _____

On average, not counting yourself, how many teachers/paraprofessionals are present in your classroom at one time? _____

Please indicate whether you have special and/or general education certification:

- ☐ General education certification
- ☐ Special education certification
- ☐ General & special education certifications
- ☐ Not currently certified

What is your highest level of education completed? (check one)

- ☐ High School/GED
- ☐ Associate's
- ☐ B.A./B.S.
- ☐ Master's/Specialist
- ☐ Master's plus _____ credits
- ☐ Doctorate (e.g., PhD, JD,)

During your teacher preparation program, did you complete a course devoted entirely to classroom management or did you receive information about classroom management as part of other courses? (check one)

- ☐ I took a course devoted primarily to classroom management
- ☐ I received information about classroom management as part of other course(s)
- ☐ Both, I took a course devoted primarily to classroom management and I received information about classroom management as part of other course(s)
- ☐ I did not take a course devoted primarily to classroom management or receive information about classroom management as part of other course(s)

During your teacher preparation program, did you receive supervised, school-based practice and feedback on implementing classroom or behavior management strategies? (check one)

- ☐ Yes
- ☐ No

During your teacher preparation program, did you receive adequate information and school-based practice to effectively implement research-based classroom and behavior management strategies? (check one)

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Agree
- ☐ Strongly Agree

Have you participated in formal professional development activities related to classroom and behavior management since beginning teaching (i.e., in-service training or workshop)? (check one)

- ☐ Yes
- ☐ No

Which is the best estimate of the amount of time spent participating in formal professional development activities related to classroom and behavior management since beginning teaching?

- ☐ None
- ☐ <1 day
- ☐ 1 day
- ☐ 2-3 days
- ☐ 4-5 days
- ☐ 5-10 days
- ☐ >10 days

Did your participation in formal professional development activities improve your ability to effectively implement research-based classroom and behavior management strategies?

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Agree
- ☐ Strongly Agree
- ☐ Not applicable, have not participated in formal professional development activities related to classroom and behavior management

CLASS INFORMATION

Which of the following disability categories are represented in your classroom?
Check all designations that apply.

- ☐ Specific Learning Disability
- ☐ Developmental Disability
- ☐ Autism
- ☐ Emotional and/or Behavioral Disability
- ☐ Speech/Language Disability
- ☐ Intellectual Disability
- ☐ Deaf-Blindness
- ☐ Other Heath Impairment
- ☐ Orthopedic or Physical Impairment
- ☐ Visual Impairment
- ☐ Hearing Impairment
- ☐ Other Health Impairment – ADD/ADHD
- ☐ Traumatic Brain Injury
- ☐ Multiple Disabilities

Out of those disability categories represented in your classroom, what are the top three most frequent designations?

1. _____ **2.** _____

3. _____

Do you currently have defined classroom behavior expectations? ☐ **Yes** ☐ **No**

If YES, what are they? (please list below, if you run out of space use the next page)

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

How knowledgeable are you about the following features of classroom management?

	Not at all	Somewhat	Very
Maximize structure and predictability			
Post, teach, review, monitor, and reinforce expectations			
Actively engage students in observable ways			
Use a continuum of strategies to acknowledge appropriate behavior			
Use a continuum of strategies to respond to inappropriate behavior			

How often do you acknowledge expected student behaviors versus misbehaviors (positive-to-negative ratio)?*

- ☐ Less than 2:1
- ☐ Less than 3:1
- ☐ 3:1 or higher

Do you have a system for documenting and rewarding appropriate student behavior (classwide and individual students)?*

- ☐ No
- ☐ Somewhat/Informally
- ☐ Yes

Do you use behavior-specific/descriptive praise to encourage appropriate behavior?*

- ☐ No
- ☐ Sometimes
- ☐ Most of the time

What are the top three problem behaviors you observe regularly (i.e., more than once per week) in your classroom?

1. _____
2. _____
3. _____

Are the number of problem behaviors/disruptions in your classroom generally minimal?*

- ☐ No
- ☐ Sometimes
- ☐ Yes

* "Motivational Interviewing for Effective Classroom Management: The Classroom Check-up," by W. M. Reinke, K. C. Herman, and R. Sprick, 2011, New York: The Guilford Press.

Appendix D: Introductory Meeting Procedural Integrity

Introductory Meeting Procedural Integrity

Date: _____ Teacher ID: _____ Start Time: _____

Meeting Components	Occurrence	Non-occurrence
1. Opening salutation		
2. Obtain written consent		
a. Explain the study (purpose, procedures, risks/benefits)		
b. Answer questions about the study		
3. Provide Teacher Demographics Form		
4. Provide copies of Parental Notification Form for distribution		
5. Determine intervention period for observations		
6. Review list of steps involved in the completion of the classroom climate surveys		
7. Explain conditions for first administration of classroom climate survey		
a. Within 3 days		
b. Parental Notification Forms must be sent home first		
c. Complete after the class during which the intervention period will fall		
8. Arrange for time to collect Teacher Demographics Form and climate surveys		
9. Determine preferred method of communication (i.e., email or text message)		
10. Answer teacher questions		
11. Confirm time/date of first observation		
12. Closing salutation		

Appendix E: Classroom Climate Survey Instructions

Classroom Climate Survey Instructions

The Classroom Climate Survey should be completed within 3 days of our first meeting and no more than 30 minutes after the end of the class period (e.g., math, English language arts) during which the agreed upon intervention period falls.

Put an X next to each administration step listed below as you complete it.

Administration Steps	Completed?
1. Provide each student with a copy of the Classroom Climate Survey for Students. Tell them that they should NOT put their names on the papers.	
2. Read the directions, included in the envelope, to the students.	
3. Assist students with completion of the survey as needed (e.g., repeat directions, read questions/answer choices out loud).	
4. Collect the surveys and review them for student names. • If a student put his/her name on the paper, or any other personal information, please use a marker to black it out.	
5. Place the completed student surveys back in the envelope.	
6. Complete one copy of the Classroom Climate Survey for Teachers.	
7. Place the completed teacher survey back in the envelope.	
8. Seal the envelope.	
9. Below, write the time and date that you sealed the envelope.	

The Classroom Climate Survey (student and teacher versions) were completed on:

Month	Day	Year	at	Hour	Minutes	AM/PM

Appendix F: Verbal Directions for Administering Climate Survey to Students

Classroom Climate Survey Verbal Directions for Students

Please think about [insert academic subject during which the study's intervention period falls; e.g., math, English language arts] *class today and answer how often you agree with the 11 statements on your paper. For each statement, you can choose one of four choices: never, sometimes, often, or always* [hold up a copy of the survey, point to the statement and the answer choices]*. CIRCLE one choice for EACH statement, and please answer honestly. Your individual answers will not be shared with me or anyone at school. Once you are finished, please turn the paper over on your desk so that I can collect it. Remember, you should NOT put your name on this paper and this survey is NOT going to be graded. Are there any questions?*

Appendix G: Classroom Climate Survey – Student

Classroom Climate Survey for Students

Please listen to your teacher as the directions for this survey are read out loud.

Statements	Choices			
1. I like my classroom.	*Never*	*Sometimes*	*Often*	*Always*
2. I feel like I do well in my classroom.	*Never*	*Sometimes*	*Often*	*Always*
3. My teacher wants me to do well.	*Never*	*Sometimes*	*Often*	*Always*
4. My teacher has clear rules for behavior.	*Never*	*Sometimes*	*Often*	*Always*
5. I feel safe in my classroom.	*Never*	*Sometimes*	*Often*	*Always*
6. My teacher treats me with respect.	*Never*	*Sometimes*	*Often*	*Always*
7. Good behavior is noticed in my classroom.	*Never*	*Sometimes*	*Often*	*Always*
8. Students in my class behave so that the teacher can teach.	*Never*	*Sometimes*	*Often*	*Always*
9. I get along with other classmates.	*Never*	*Sometimes*	*Often*	*Always*
10. My classmates treat each other well.	*Never*	*Sometimes*	*Often*	*Always*
11. My teacher will help me if I need it.	*Never*	*Sometimes*	*Often*	*Always*

Appendix H: Classroom Climate Survey – Teacher

Classroom Climate Survey for Teachers

Think about the class during which your intervention period falls (e.g., math, English language arts) and please rate how frequently you agree with each of the statements listed below. There are four response options available: *always*, *often*, *sometimes*, or *never*. Please circle your response for each statement.

	Statements	Response Options			
1.	I think my students like our classroom.	*Never*	*Sometimes*	*Often*	*Always*
2.	I think my students feel like they do well in our classroom.	*Never*	*Sometimes*	*Often*	*Always*
3.	I think my students think I want them to do well.	*Never*	*Sometimes*	*Often*	*Always*
4.	I think my students believe that I have clear rules for behavior.	*Never*	*Sometimes*	*Often*	*Always*
5.	I think my students feel safe in our classroom.	*Never*	*Sometimes*	*Often*	*Always*
6.	I think my students believe that I treat them with respect.	*Never*	*Sometimes*	*Often*	*Always*
7.	I think my students believe that good behavior is noticed in our classroom.	*Never*	*Sometimes*	*Often*	*Always*
8.	I think my students believe that they behave so that I can teach.	*Never*	*Sometimes*	*Often*	*Always*
9.	I think that my students get along with other classmates.	*Never*	*Sometimes*	*Often*	*Always*
10.	I think that my students believe that their classmates treat each other well.	*Never*	*Sometimes*	*Often*	*Always*
11.	I think my students believe that I will help them if they need it.	*Never*	*Sometimes*	*Often*	*Always*

Appendix I: Specific Praise Training Protocol

Specific Praise Training Protocol

Materials:

- Wristwatches
- Audio recorder
- Training protocol and integrity sheet
- Blank SDO forms

Advance Preparation:

- Inform the teacher that she/he may wish to bring materials to conduct a brief mock instructional activity.

Step 1: Explain session purpose

- ☐ *Explain that you are meeting to look at the intervention (specific praise) and practice its implementation.*
- ☐ *Provide an overview of Direct Training by briefly describing steps including review of the intervention, modeling, practice and feedback.*
- ☐ *Discuss the goals for Direct Training: increasing the implementers' implementation skills and confidence.*

Step 2: Didactic intervention training

- ☐ *Provide an overview of the intervention, its purpose in supporting student outcomes and a rationale for its effectiveness. Throughout, encourage the implementers' active involvement by asking questions about implementation, use of the step, and answering any questions.*
    - Specific praise is a positive statement, provided by the teacher, following an appropriate behavior and that statement tells students what they did well.
    - What separates it from general praise (e.g., "Good job!" and "Thank you!") is the specificity.
        - Behavior – students understand what behavior was appropriate and earned your attention
        - Student – higher chance the students will pay attention to your statement
    - Aspects of quality:
        - Contingency
        - Immediacy
        - Sincerity
            - Tone and content match development/chronological age
            - Vary the types of statements
    - It can be delivered to individuals, small groups of students, or the entire class – as long as it's audible. Here are some examples:
        - *Individuals:* Wow, you did a great job finding your square and sitting down… Jill, thank you for raising your hand to speak… Lisa, that is a wonderful example of how to enter a group

        - *Small groups:* Gators, you are all doing a good job picking up the toys...Thank you, red table, for getting right to work… I really like the way you two are working together
        - *Whole class:* Everyone is really on-task in reading today…You are all showing how well 4th graders can listen…I see every station is cleaned up, thank you
    - Research into specific praise began in the 1960s and the use of specific praise has been repeatedly associated with:
        - Increases in appropriate behavior, such as engagement and compliance
        - Decreases in in appropriate behavior, namely disruptive behavior

☐ *Review each skill/step needed to implement the intervention, providing detailed instructions on how to carry out each skill/step, including any intervention materials needed.*

- Typically, there are two steps to delivering specific praise:
    - 1. Observe appropriate behavior
    - 2. Make a verbal statement about the behavior (i.e., specific praise)
- For the purposes of this study, there are three steps to delivering specific praise:
    - 1. Feel the watch vibrate.
    - 2. Observe appropriate behavior.
    - 3. Make a verbal statement about the behavior (i.e., specific praise)
- Additionally, for the purposes of this study, specific praise should **only** be delivered when the watch vibrates.

Step 3: Answer implementer's questions

☐ *Ask the implementer if he/she has any questions or concerns about the intervention or its implementation.*

☐ *Address these questions and concerns the best as you can based on intervention research and your experience.*

Step 4: Demonstrate intervention

☐ *Demonstrate intervention components.*

- Model how to deliver specific praise when prompted with a 2-3 minute prepared activity. (Note: The teacher does not need to "pretend" to be the student.)
    - The watch will be set to 0.80 statements/minute

Step 5: Engage the implementer in guided practice

☐ *Have the implementer practice the intervention.*

- Ask the teacher to wear the watch and deliver praise when prompted for 2-3 minutes while moving through a typical instructional activity. (Note: The trainer does not need to "pretend" to be the student.)
    - The watch will be set to 0.80 statements per minute.
- Record the number of praise statements delivered by the teacher during practice.

☐ *Provide supportive guidance (e.g., prompts, hints, encouragement) as necessary.*

Step 6: Provide feedback about the practice

☐ *Provide feedback about the guided practice. Give specific (e.g., detailed) feedback in a*

positive and constructive manner. Be sure to reinforce successes and correct any implementation errors.

- Feedback should focus on (a) the number of praise statements required and (b) the specificity of the praise, as well as the quality (i.e., contingency, immediacy, and sincerity).

Step 7: Repeat guided practice and feedback, if necessary

☐ *If needed, repeat steps 5 and 6 until the implementer successfully and confidently implements the intervention.*

- Note: Repeated practice would continue with a rate of 0.80

Step 8: Implementer engages in independent practice

☐ *Have the implementer independently practice all of the intervention.*

- Ask the teacher to wear the watch and move through two 5-minute periods of a typical instructional activity. First, with the watch set to a rate of 0.80 and then with the watch set to 0.40.
- Using the Systematic Direct Observation form, record the teacher's specific praise and treatment integrity data as if completing an observation.

☐ *Do not provide any guidance during the independent practice, but note areas of strength during implementation as well as areas for improvement.*

Step 9: Provide feedback about the practice

☐ *Ask the implementer to self-evaluate their independent practice.*

☐ *Provide constructive feedback regarding the implementer's independent practice. Be sure to reinforce successes and correct any implementation errors.*

- Feedback should focus on (a) the number of praise statements required and (b) the specificity of the praise, as well as the quality (i.e., contingency, immediacy, and sincerity).

Step10: Repeat independent practice and feedback, if necessary

☐ *If needed, repeat steps 8 and 9 until the implementer successfully and confidently implements each component of the intervention independently.*

- Independent practice will be repeated until the teacher (a) delivers praise at both prescribed rates and (b) delivers praise with full integrity (as determined by the treatment integrity ratings).
- If, after two rounds of independent practice, the teacher does not meet these criteria, the trainer will offer the teacher the choice of (a) conducting a second practice session or (b) exiting the study.
    - If the teacher chooses to exit the study, then she/he will be provided with a handout with resources about self-monitoring strategies to increase praise as a classroom management strategy.

Step 11: Review intervention logistics

☐ *Review each of the three sections of the intervention logistics handout with the implementer*

- Address questions as they arise

☐ *Ask the implementer to practice starting, stopping, and re-setting both watches*

- Repeat practice until the implementer expresses confidence in manipulating the watches

Step 12: Close the session

☐ *Revisit the consultation goals and evaluate if those goals have been met through Direct Training.*

- If the teacher has not met the goals and would like to continue in the study, schedule a second training session.

☐ *Ask if the implementer has any questions.*

☐ *Provide positive feedback to the implementer about his/her participation in Direct Training.*

Appendix J: Specific Praise Training Protocol Integrity Sheet

Specific Praise Training Protocol Treatment Integrity Sheet	
Adherence is the degree to which the strategy steps are implemented as planned. To rate adherence, circle the descriptor that best describes *how completely* each step was delivered.	
Complete	All aspects completed (100%)
Substantial	More than half of aspects completed (99-51%)
Limited	Less than half of aspects completed (50-1%)
None	No aspects completed (0%)
Quality refers to how well the strategy steps are implemented. Quality can be evaluated only if the step was implemented; rate on those steps for which adherence was rated as complete, substantial, or limited. To rate quality, circle the descriptor that best describes *how well* each step was delivered. *Note: Quality should only be completed is adherence is rate complete, substantial, or limited*	
Excellent	Step was implemented skillfully as indicated by: • Appropriate interaction and specificity, • Step smooth, • Appropriately paced, Competently implemented (e.g., clearly responsive to teacher's unique needs)
Good	Step implemented adequately, but in a less skillful manner; step somewhat flawed in at least 1 of the indicators under "excellent"
Fair	Step implemented poorly in a manner that is inadequate or seriously flawed in at least 1 OR somewhat flawed in at least 2 of the indicators under "excellent"
Poor	Step implemented poorly, with none of the indicators under "excellent"
Implementer Responsiveness refers to how actively engaged and cooperative the implementer was during the PRIME Implementation Support session. Two items related to implementer responsiveness are rated at the end of the session based on the percentage of time the implementer demonstrated these characteristics per the definitions below.	
Actively Engaged	The implementer is purposefully participating in the intervention process. Examples include: Note taking, reading materials, intently listening, asking questions, nodding head, vocalizing understanding/interest (e.g., "okay"), making affirmative statements (e.g., "I will…") Non-examples include: Looking out the window, distracted by things unrelated to the current task, checking the clock
Cooperated	The implementer willingly and agreeably working jointly with the consultant during the intervention process. Examples include: Reviewed presented data, actively participated in role plays, followed through with tasks asked of them Non-examples include: Refusal to participate in intervention step(s), lacked elaboration when asked questions

Consultee:	Consultant:	Date:	Start Time:	End Time:

Strategy Steps	Adherence					Quality*			
	Complete	Substantial	Limited	None	NA	Excellent	Good	Fair	Poor
1. Explain session purpose	3	2	1	0	NA	3	2	1	0
2. Didactic intervention training	3	2	1	0	NA	3	2	1	0
3. Answer implementer's questions	3	2	1	0	NA	3	2	1	0
4. Demonstrate intervention	3	2	1	0	NA	3	2	1	0
5. Engage the implementer in guided practice	3	2	1	0	NA	3	2	1	0
6. Provide feedback about the practice	3	2	1	0	NA	3	2	1	0
7. Repeat guided practice, providing feedback, if necessary	3	2	1	0	NA	3	2	1	0
8. Implementer engages in independent practice	3	2	1	0	NA	3	2	1	0
9. Provide feedback about the practice	3	2	1	0	NA	3	2	1	0
10. Repeat independent practice and feedback, if necessary	3	2	1	0	NA	3	2	1	0
11. Review intervention logistics	3	2	1	0	NA	3	2	1	0
12. Close the session	3	2	1	0	NA	3	2	1	0
Sum Columns									
Sum Adherence Columns	A					**Sum Quality columns**	A		
Number of Applicable Steps x 3	B					**Number of Rated Quality Steps x 3**	B		
Divide A / B						**Divide A / B**			
Adherence %						**Quality %**			

Implementer Responsiveness				
	Always 100%	**Mostly >51%**	**Rarely ≤50%**	**Never 0%**
Implementer was **actively engaged**.	3	2	1	0
Implementer **cooperated** with the intervention.	3	2	1	0

Appendix K: Specific Praise Additional Training: Procedural Integrity Sheet

Specific Praise Additional Training: Procedural Integrity

Date: _____ Teacher ID: _____ Start Time: _____

Materials:

- Wristwatches
- Audio recorder
- Training protocol and integrity sheet
- Blank SDO forms

Advance Preparation:

- Inform the teacher that she/he may wish to bring materials to conduct a brief mock instructional activity.

Meeting Components	Occurrence	Non-occurrence
1. Opening salutation		
2. Explain session purpose		
3. Review didactic intervention training		
4. Engage teacher in guided practice		
5. Provide feedback about guided practice		
6. Engage teacher in independent practice		
7. Provide teacher feedback about independent practice		
8. Address any teacher questions		
9. Closing salutation		

Appendix L: Self-monitoring Resources

Self-Monitoring Resources

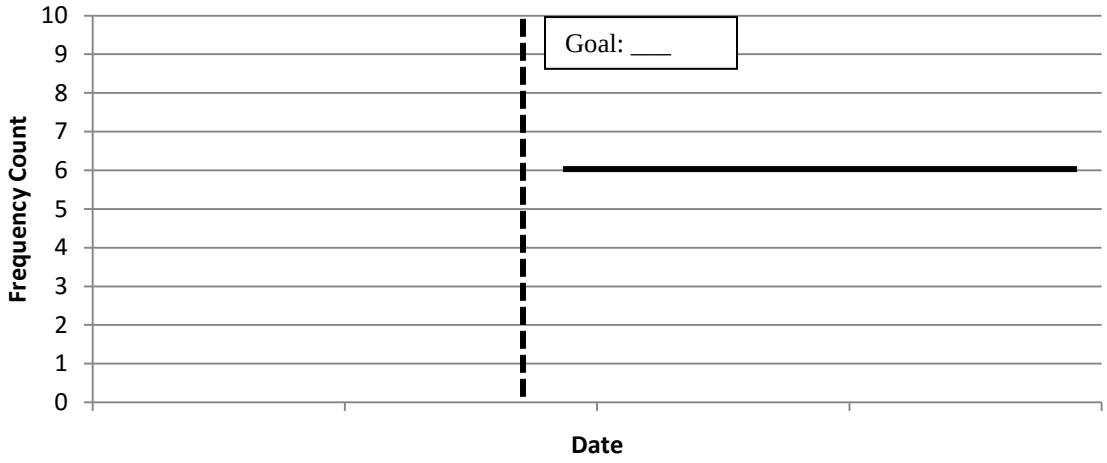
Self-monitoring involves the active evaluation of one's own behavior and has been used widely in education as a behavior modification technique. By (a) recording patterns of behavior and (b) analyzing those data, teachers' awareness of their behavior is raised. In the specific praise research, this awareness has resulted in substantial increases in teachers' use of specific praise, an evidence-based classroom management strategy.

Methods for Self-Monitoring

- Record tally marks
- Move paper clips from one pocket to the other
- Click a golf counter

Graph Template for Self-Monitoring Data

Behavior: _____



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Appendix M: Watch Instructions and Intervention Schedule

Intervention Logistics

Teacher ID: _____ Intervention Period: _____ to _____

[Sample] Schedule for ID XX

Monday – 9/28	Tuesday – 9/29	Weds. – 9/30	Thursday – 10/1	Friday – 10/2
BLACK	BLACK	BLUE	BLACK	BLUE

Monday – 10/5	Tuesday – 10/6	Weds. – 10/7	Thursday – 10/8	Friday – 10/9
BLUE	BLUE	BLACK	BLUE	BLUE

Monday – 10/12	Tuesday – 10/13	Weds. – 10/14	Thursday – 10/15	Friday – 10/16
BLACK	BLUE	BLACK	BLACK	BLACK

Monday – 10/19	Tuesday – 10/20	Weds. – 10/21	Thursday – 10/22	Friday – 10/23
BLACK	BLUE	BLUE	BLUE	BLACK
			Climate Survey URP-IR	***Climate Survey URP-IR***

Daily Instructions

Step 1: Put on the correct watch (BLACK or BLUE), according to the schedule above.

Step 2: At the beginning of the intervention period, start the watch.

Step 3: Conduct instruction as usual and deliver praise (to an individual student, small group of students, or the entire class) when the watch vibrates.

Step 4: At the end of the intervention period, stop the watch.

Troubleshooting

To start the watch…

- Press **MODE** (lower-left) three times to reach the **TIMER**, and then press **START/STOP** (upper-right) one time.

To stop the watch…

- Press **START/STOP** once, press and hole **SET/RESET** until the screen says TIMER again, and then press **MODE** two times to return to the home screen

*If the countdown timer is blank after your press MODE, the watch was re-set. (**Note:** This should not happen unless someone intentionally alters the settings or the battery dies.)*

- Obtain a substitute watch from the main office, of the correct color, and contact Kate at the end of the day.

Appendix N: Systematic Direct Observation Form

Date:	**Teacher ID:**	**Observer ID:**
Start Time:	**End Time:**	**IOA? ___ 2nd Obs. ID:**
Session #:	**Subject:**	**Rate:** ___ Black (0.40) ___ Blue (0.80)

Student Behavior

1. **On-task Behavior:** actively or passively participating in the classroom activity (e.g., writing, raising hand, answering a question, talking about a lesson, listening to the teacher, reading silently, or looking at instructional materials)
2. **Disruptive Behavior:** student action that interrupts regular school or classroom activity (e.g., out of seat, fidgeting, playing with objects, acting aggressively, talking/yelling about things that are unrelated to classroom instruction)

Teacher Practices

1. **Specific Praise:** Any behavior-specific verbal statement that indicates the teacher's approval of a desired academic or social behavior
   a. **Individual** – feedback about a desired academic or social behavior is provided to one student (e.g., "Thank you for raising your hand, Ashley.")
   b. **Group** – feedback about a desired academic or social behavior is provided to a group of students in the class (e.g., "Josh and Amy got right to work on their project!")
   c. **Class-wide** – feedback about a desired academic or social behavior is provided to the entire class (e.g., "Everyone has their eyes on me. Good.")
2. **General Praise:** Any verbal statement or gesture that indicates the teacher's approval of a desired academic or social behavior without specifying the behavior (e.g., "Great job, Andy!", thumbs up or 'okay' sign, "Awesome!", "Thank you, Carolyn.").

		1 :15	2 :30	3 :45	4 1:00	5 1:15	6 1:30	7 1:45	8 2:00	9 2:15	10 2:30	11 2:45	12 3:00	Total	IOA Sum
MTS	**On-task**														
Partial	**Disruptive**														
Event	**SP – individual**														
	SP – group														
	SP – class-wide														
Event	**General Praise**														

		13 3:15	14 3:30	15 3:45	16 4:00	17 4:15	18 4:30	19 4:45	20 5:00	21 5:15	22 5:30	23 5:45	24 6:00	Total	IOA Sum
MTS	**On-task**														
Partial	**Disruptive**														
Event	**SP – individual**														
	SP – group														
	SP – class-wide														
Event	**General Praise**														

		25	26	27	28	29	30	31	32	33	34	35	36	Total	IOA Sum
		6:15	6:30	6:45	7:00	7:15	7:30	7:45	8:00	8:15	8:30	8:45	9:00		
MTS	**On-task**														
Partial	**Disruptive**														
Event	**SP – individual**														
	SP – group														
	SP – class-wide														
Event	**General Praise**														

		37	38	39	40	41	42	43	44	45	46	47	48	Total	IOA Sum
		9:15	9:30	9:45	10:00	10:15	10:30	10:45	11:00	11:15	11:30	11:45	12:00		
MTS	**On-task**														
Partial	**Disruptive**														
Event	**SP – individual**														
	SP – group														
	SP – class-wide														
Event	**General Praise**														

		49	50	51	52	53	54	55	56	57	58	59	60	Total	IOA Sum
		12:15	12:30	12:45	13:00	13:15	13:30	13:45	14:00	14:15	14:30	14:45	15:00		
MTS	**On-task**														
Partial	**Disruptive**														
Event	**SP – individual**														
	SP – group														
	SP – class-wide														
Event	**General Praise**														

		61	62	63	64	65	66	67	68	68	70	71	72	Total	IOA Sum
		15:15	15:30	15:45	16:00	16:15	16:30	16:45	17:00	17:15	17:30	17:45	18:00		
MTS	**On-task**														
Partial	**Disruptive**														
Event	**SP – individual**														
	SP – group														
	SP – class-wide														
Event	**General Praise**														

		73	74	75	76	77	78	79	80	81	82	83	84	Total	IOA Sum
		18:15	18:30	18:45	19:00	19:15	19:30	19:45	20:000	20:15	20:30	20:45	21:00		
MTS	**On-task**														
Partial	**Disruptive**														
Event	**SP – individual**														
	SP – group														
	SP – class-wide														
Event	**General Praise**														

		85	86	87	88	89	90	91	92	93	94	95	96	Total	IOA Sum
		21:15	21:30	21:45	22:00	22:15	22:30	22:45	23:00	23:15	23:30	23:45	24:00		
MTS	**On-task**														
Partial	**Disruptive**														
Event	**SP – individual**														
	SP – group														
	SP – class-wide														
Event	**General Praise**														

		97	98	99	100	101	102	103	104	105	106	107	108	Total	IOA Sum
		24:15	24:30	24:45	25:00	25:15	25:30	25:45	26:00	26:15	26:30	26:45	27:00		
MTS	**On-task**														
Partial	**Disruptive**														
Event	**SP – individual**														
	SP – group														
	SP – class-wide														
Event	**General Praise**														

		109	110	111	112	113	114	115	116	117	118	119	120	Observation Complete!	Total	IOA Sum
		27:15	27:30	27:45	28:00	28:15	28:30	28:45	29:00	29:15	29:30	29:45	30:00			
MTS	**On-task**															
Partial	**Disruptive**															
Event	**SP – individual**															
	SP – group															
	SP – class-wide															
Event	**General Praise**															

SUMMARY TABLES:

Student Behavior			
	Total # of intervals behavior was present	**Total # of intervals in observation session**	**% Total**
On-task			
Disruptive			

Specific Praise (total)		
Total # of statements	**Total # of minutes in observation session**	**Rate per minute**

Specific Praise by Type								
Individual			**Group**			**Class-wide**		
Total # of statements	**Total # of minutes**	**Rate per minute**	**Total # of statements**	**Total # of minutes**	**Rate per minute**	**Total # of statements**	**Total # of minutes**	**Rate per minute**

General Praise		
Total # of statements	**Total # of minutes in observation session**	**Rate per minute**

TREATMENT INTEGRITY:

	Implemented as Planned	**Implemented with Deviation**	**Implemented Inappropriately**	***Agreement***
Adherence	(within +/- .033 of the prescribed rate)	(within +/- .066 of the prescribed rate)	(greater than +/- .066 of the prescribed rate)	1 or 0
	_____ 2	_____ 1	_____ 0	
Quality	**Very good**	**Fair**	**Poor**	1 or 0
	_____ 3 All three indicators are present without any flaws or just one of the indicators is somewhat flawed	_____ 2 One indicator is seriously flawed or two are somewhat flawed	_____ 1 Two indicators are seriously flawed or all three are somewhat flawed	
	Indicators: contingent, immediate, and sincere (i.e., tone and content match students' age, statements are varied)			

Complete calculations on the next page →

SDO IOA: Trial-by-Trial/Mean Count-per-Interval

For on-task and disruptive behavior: Determine agreement in each interval (0 or 1), then sum the number of intervals in which agreement was found and divide by the total number of intervals observed to find the percent of agreement. For specific praise: For each interval, divide the smaller count within an interval by the larger count within the interval (*Note*. "0" divided by "0" should be recorded as "1" or total agreement for the interval). Sum all of the interval IOA totals and record in the "Sum of Intervals" column. Complete the table below.

	# of Intervals with Agreement or Sum of Intervals	**Total # Intervals**	**% Agreement**
On-task			
Disruptive			
SP – individual			
SP – group			
SP – class-wide			
SP (total)			
General Praise			

Appendix O: Specific Praise Re-training Meeting: Procedural Integrity Sheet

Specific Praise Re-Training: Procedural Integrity

Date: _____ Teacher ID: _____ Start Time: _____

Materials:

- Wristwatches
- Audio recorder
- Training protocol and integrity sheet
- Blank SDO forms

Advance Preparation:

- Inform the teacher that she/he may wish to bring materials to conduct a brief mock instructional activity.

Meeting Components	Occurrence	Non-occurrence
1. Opening salutation		
2. Explain session purpose		
3. Review didactic intervention training		
4. Engage teacher in guided practice		
5. Provide feedback about guided practice		
6. Engage teacher in independent practice		
7. Provide teacher feedback about independent practice		
8. Address any teacher questions		
9. Closing salutation		

Appendix P: Climate Survey & URP-IR Combined Instructions

Classroom Climate Survey & URP-IR Combined Instructions

The Classroom Climate Survey and URP-IR are to be completed on [INSERT DATE] and no more than 30 minutes after your intervention period ends (i.e., after you stop the watch).

Put an X next to each administration step listed below as you complete it.

Administration Steps	Completed?
1. Provide each student with a copy of the Classroom Climate Survey for Students. Tell them that they should NOT put their names on the papers.	
2. Read the directions, included in the envelope, to the students.	
3. Assist students with completion of the survey as needed (e.g., repeat directions, read questions/answer choices out loud).	
4. Collect the surveys and review them for student names. • If a student put his/her name on the paper, or any other personal information, please use a marker to black it out.	
5. Place the completed student surveys back in the envelope.	
6. Complete one copy of the Classroom Climate Survey for Teachers.	
7. Place the completed teacher survey back in the envelope.	
8. Complete one copy of the Usage Rating Profile-Intervention Revised (URP-IR). • Think about the rate of praise you delivered today and your agreement with each of the 15 statements.	
9. Place the completed URP-IR back in the envelope.	
10. Seal the envelope.	
11. Below, write the time and date that you sealed the envelope.	

The Classroom Climate Survey, student and teacher versions, & the URP-IR were completed on:

			at			
Month	Day	Year		Hour	Minutes	AM/PM

Appendix Q: Usage Rating Profile – Intervention Revised (URP-IR) for Lower Rate

Usage Rating Profile-Intervention Revised (URP-IR)
Rate of **0.40** Specific Praise Statements per Minute – **BLACK Watch**

		Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1.	This intervention is an effective choice for addressing a variety of problems.	1	2	3	4	5	6
2.	I would be able to allocate my time to implement this intervention.	1	2	3	4	5	6
3.	The intervention is a fair way to handle the children's behavior problems.	1	2	3	4	5	6
4.	The total time required to implement the intervention procedures would be manageable.	1	2	3	4	5	6
5.	I would not be interested in implementing this intervention.	1	2	3	4	5	6
6.	I would have positive attitudes about implementing this intervention.	1	2	3	4	5	6
7.	This intervention is a good way to handle the children's behavior problems.	1	2	3	4	5	6
8.	Preparation of materials needed for this intervention would be minimal.	1	2	3	4	5	6
9.	Material resources needed for this intervention are reasonable.	1	2	3	4	5	6
10.	I would implement this intervention with a good deal of enthusiasm.	1	2	3	4	5	6
11.	This intervention is too complex to carry out accurately.	1	2	3	4	5	6
12.	This intervention would not be disruptive to other students.	1	2	3	4	5	6
13.	I would be committed to carrying out this intervention.	1	2	3	4	5	6
14.	The intervention procedures easily fit in with my current practices.	1	2	3	4	5	6
15.	The amount of time required for record keeping would be reasonable.	1	2	3	4	5	6

URP- I SCORING GUIDE

Factor I: ACCEPTABILITY
Items - 1 (1), 7 (3), 9* (5), 11 (6), 12 (7), 18 (10), 21 (12), 22 (13), 23 (14)

Factor II: UNDERSTANDING
Items – 4, 6, 25

Factor III: HOME SCHOOL COLLABORATION
Items – 5, 15, 28

Factor IV: FEASIBILITY
Items – 3 (2), 8 (4), 13 (8), 17 (9), 19* (11), 27 (15)

Factor V: SYSTEM CLIMATE
Items – 10, 14, 16, 20, 26

Factor VI: SYSTEM SUPPORT
Items – 2, 24, 29

* REVERSE CODE THESE ITEMS WHEN SCORING

Note: Use care when interpreting individual factors and in combination. For example, a LOW score for system support reflects greater ability to independently implement the intervention. Thus, if aggregating across all factors to find an overall mean indicative of more favorable responses, consider reverse coding all items in this factor.

Citation for the measure:
Chafouleas, S.M., Briesch, A.M., Neugebauer, S. R., & Riley-Tillman, T. C. (2011). *Usage Rating Profile – Intervention (Revised)*. Storrs, CT: University of Connecticut.

Suggested citation for the associated publication is as follows:
Briesch, A.M., Chafouleas, S. M., Neugebauer, S. R., & Riley-Tillman, T.C., (2011). Exploring the multi-dimensional influences on intervention usage: Revision of the Usage Rating Profile-Intervention (URP-IR).

Appendix R: Usage Rating Profile – Intervention Revised (URP-IR) for Higher Rate

Usage Rating Profile-Intervention Revised (URP-IR)
Rate of **0.80** Specific Praise Statements per Minute – **BLUE Watch**

		Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1.	This intervention is an effective choice for addressing a variety of problems.	1	2	3	4	5	6
2.	I would be able to allocate my time to implement this intervention.	1	2	3	4	5	6
3.	The intervention is a fair way to handle the children's behavior problems.	1	2	3	4	5	6
4.	The total time required to implement the intervention procedures would be manageable.	1	2	3	4	5	6
5.	I would not be interested in implementing this intervention.	1	2	3	4	5	6
6.	I would have positive attitudes about implementing this intervention.	1	2	3	4	5	6
7.	This intervention is a good way to handle the children's behavior problems.	1	2	3	4	5	6
8.	Preparation of materials needed for this intervention would be minimal.	1	2	3	4	5	6
9.	Material resources needed for this intervention are reasonable.	1	2	3	4	5	6
10.	I would implement this intervention with a good deal of enthusiasm.	1	2	3	4	5	6
11.	This intervention is too complex to carry out accurately.	1	2	3	4	5	6
12.	This intervention would not be disruptive to other students.	1	2	3	4	5	6
13.	I would be committed to carrying out this intervention.	1	2	3	4	5	6
14.	The intervention procedures easily fit in with my current practices.	1	2	3	4	5	6
15.	The amount of time required for record keeping would be reasonable.	1	2	3	4	5	6

URP- I SCORING GUIDE

Factor I: ACCEPTABILITY
Items - 1 (1), 7 (3), 9* (5), 11 (6), 12 (7), 18 (10), 21 (12), 22 (13), 23 (14)

Factor II: UNDERSTANDING
Items – 4, 6, 25

Factor III: HOME SCHOOL COLLABORATION
Items – 5, 15, 28

Factor IV: FEASIBILITY
Items – 3 (2), 8 (4), 13 (8), 17 (9), 19* (11), 27 (15)

Factor V: SYSTEM CLIMATE
Items – 10, 14, 16, 20, 26

Factor VI: SYSTEM SUPPORT
Items – 2, 24, 29

* REVERSE CODE THESE ITEMS WHEN SCORING

Note: Use care when interpreting individual factors and in combination. For example, a LOW score for system support reflects greater ability to independently implement the intervention. Thus, if aggregating across all factors to find an overall mean indicative of more favorable responses, consider reverse coding all items in this factor.

Citation for the measure:
Chafouleas, S.M., Briesch, A.M., Neugebauer, S. R., & Riley-Tillman, T. C. (2011). *Usage Rating Profile – Intervention (Revised)*. Storrs, CT: University of Connecticut.

Suggested citation for the associated publication is as follows:
Briesch, A.M., Chafouleas, S. M., Neugebauer, S. R., & Riley-Tillman, T.C., (2011). Exploring the multi-dimensional influences on intervention usage: Revision of the Usage Rating Profile-Intervention (URP-IR).

Appendix S: Summary Report Template

Summary Report Template

Teacher ID: _____ Date of Report: _____

Observations of teacher and student behavior were conducted throughout the duration of the study. The data collected during these observations are summarized below.

Specific Praise

During baseline, specific praise was delivered at a rate of [X.XX] statements per minute. Following training, specific praise was delivered at two different rates: 0.40 and 0.80 statements per minute. These rates were [describe implementation; e.g., consistently implemented as planned] and [describe quality; e.g., of high quality].

Disruptive Behavior

INSERT GRAPH

Disruptive behavior was observed during [X.XX%] of intervals during baseline. Under the rate of 0.40, disruptive behavior was observed during an average of [X.XX%] of intervals and [describe data pattern]. Under the rate of 0.80, disruptive behavior was observed during an average of [X.XX%] of intervals and [describe data pattern]. These data suggest that a rate of X.XX was more effective in decreasing disruptive behavior, and this was [describe results of optimal phase; e.g., confirmed during the final phase].

On-task Behavior

INSERT GRAPH

On-task behavior was observed during [X.XX%] of intervals during baseline. Under the rate of 0.40, on-task behavior was observed during an average of [X.XX%] of intervals and [describe data pattern]. Under the rate of 0.80, on-task behavior was observed during an average of [X.XX%] of intervals and [describe data pattern]. These data suggest that a rate of X.XX was more effective in increasing on-task behavior, and this was [describe results of optimal phase; e.g., confirmed during the final phase].

Classroom Climate

Prior to the specific praise intervention, students found the classroom climate to be [always, often, sometimes, never] positive. Under the rate of 0.40 specific praise statements per minute, [describe changes in student responses from baseline]. Under the rate of 0.80 specific praise statements per minute, describe changes in student response from baseline]. When the data under the two systematically manipulated rates are compared, [describe any patterns in the results]. When the more effective rate of praise was implemented in the optimal phase, [describe student

responses on survey, highlighting similarities and differences between optimal and intervention phases responses].

Prior to the specific praise intervention, you said that students found the classroom climate to be [always, often, sometimes, never] positive. Under the rate of 0.40 specific praise statements per minute, [describe changes in teacher responses from baseline]. Under the rate of 0.80 specific praise statements per minute, [describe changes in teacher responses from baseline]. When the data under the two systematically manipulated rates are compared, [describe any patterns in the results]. When the more effective rate of praise was implemented in the optimal phase, [describe teacher responses on survey, highlighting similarities and differences between optimal and intervention phases responses].

The data contained in this report are intended for your private use and will not be shared with school personnel. Thank you for your participation in this study.

_____

Kathleen M. Williamson, MA
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University of Connecticut

Appendix T: Final Meeting Procedural Integrity

Final Meeting Procedural Integrity

Date: _____ Teacher ID: _____ Start Time: _____

Meeting Components	Occurrence	Non-occurrence
1. Opening salutation		
2. Ask teacher for his/her perceptions of student behavior since training		
3. Review Summary Report		
4. Answer teacher questions		
5. Provide gift card and external cueing device		
6. Thank teacher for participation		
7. Closing salutation		