9-9-2018

The Effects of Noncontingent Praise (NCP) on Classroom Behavior

Kelly Poirot
Illinois State University, kpoirot@ilstu.edu

THE EFFECTS OF NONCONTINGENT PRAISE (NCP) ON CLASSROOM BEHAVIOR

KELLY POIROT

93 Pages

This dissertation reports on the effects of noncontingent praise (NCP) as a classroom behavioral intervention. Six teacher participants were trained to provide NCP to the classroom at their free operant level of praises and reprimands directed towards the classroom, either at fixed (NCPf) or variable (NCPv) rates. Class-wide rates of academic engaged time and inappropriate behaviors were collected to examine the student effects of the intervention. In addition, teacher perceptions of their relationships with their students, stress, and job satisfaction were measured both pre- and post- intervention. Treatment fidelity and intervention acceptability data were also examined.

Upon implementation of the intervention in each classroom, an immediate and stable increase in AET and decrease in IB was established. Effect sizes were varied. The trends in student behavior were more promising in the NCP variable intervention, suggesting that the variability of the schedule of praise may have a longer lasting effect on student behavior than a fixed schedule. In all NCPf and NCPv classrooms, praise increased from baseline to intervention. Limitations and implications were examined.

KEYWORDS: noncontingent praise; classroom management; academic engaged time; teacher-student relationship; teacher stress; job satisfaction; intervention acceptability; treatment fidelity

THE EFFECTS OF NONCONTINGENT PRAISE (NCP) ON CLASSROOM BEHAVIOR

KELLY POIROT

A Dissertation Submitted in Partial
Fulfillment of the Requirements
for the Degree of

DOCTOR OF PHILOSOPHY

Department of Psychology

ILLINOIS STATE UNIVERSITY

2019

THE EFFECTS OF NONCONTINGENT PRAISE (NCP) ON CLASSROOM BEHAVIOR

KELLY POIROT

COMMITTEE MEMBERS:

Gary Cates, Chair

Gregory Braswell

Dan Ispas

Nancy Latham

CONTENTS

TABLES

FIGURES

CHAPTER I: REVIEW OF RELATED LITERATURE

When a teachers enters their classroom for the first time, they expect to feel empowered by their career's benefit to the community and their students' academic successes (Kyriacou & Kunc, 2007). However, the reality of this career is that teachers often spend more time and energy on classroom management than actual teaching (Tye & O'Brien, 2002). Concerns with classroom behavioral management are a leading cause of job dissatisfaction among teachers (Liu & Meyer, 2005), yet teachers report not being adequately trained in the area of classroom management (Lew & Nelson, 2016). To study teacher job satisfaction, Tye and O'Brien (2002) administered a questionnaire to teachers who had graduated six to ten years prior. Many teachers had already left teaching, and the top three reasons were accountability, increased paperwork, and student attitudes/behaviors. Because of the changing standards and paperwork that comes with these changes (U.S. Department of Education, n.d.), teachers have less time to devote to relationship building and classroom management strategies with their students (Lew & Nelson, 2016). Beginning teachers report limited opportunities to effectively collaborate with other professionals and limited access to evidence-based, practical classroom management strategies (Confait, 2015), though collaboration has been found to be an effective way for teachers to learn these strategies (Confait, 2015; Tye & O'Brian, 2016). Because teachers enter the field expecting to find satisfaction in their students' successes (Kyriacou & Kunc, 2007), it is disappointing when students are uninterested in learning the lessons teachers provide, engage in disruptive behaviors, and seem indifferent towards their teachers (Tye & O'Brian, 2016). Thus, a classroom management technique, such as noncontingent praise, may empower teachers through both increasing students' academic engaged time and improving teacher-student relationships.

Teacher-Student Relationships

Supportive teacher-student relationships (TSR) contribute to students' academic achievement, adjustment to school, social skills, and engagement in learning (Rimm-Kaufman & Sandilos, n.d.). In addition, supportive TSR can act as a buffer for at-risk children against more serious behavioral (Spilt et al., 2011), social (Elledge, Elledge, Newgent, & Cavell, 2016), and academic (Fan 2012; Rimm-Kaufman & Sandilos, n.d.) problems. Teacher-student relationships are defined as the interpersonal patterns of behavior between the student and the teacher (Veldman et al., 2013), most often categorized as the degree of closeness and conflict that the student and teacher feel towards the other (Hagenauer, Haschler, & Volet, 2015; Jerome, Hamre, & Pianta, 2009; Rimm-Kaufman & Sandilos, n.d.; Spilt et al., 2011). In a study of six elementary schools, Klem and Connell (2004) found 89% of students reported more engagement in school if they had positive TSR. They also found that student-reported engagement was linked to higher attendance and test scores. While supportive teacher-student relationships areimportant for student outcomes, they are also important for teacher outcomes.

Research suggests that supportive TSR are imperative for the job satisfaction of teachers (Betoret, 2005; Chang, 2009; Spilt, Koomen, Thijs, & van der Leij, 2011; Rimm-Kaufman & Sandilos, n.d.). Job satisfaction occurs when individuals feel positively towards their work or work experiences (Locke, 1976), and burnout occurs when individuals exert exaggerated efforts towards unrealistic expectations or meeting others expectations before the needs of self are met, resulting in physical and mental exhaustion (Freudenberger, 1974). Burnout follows decreases in job satisfaction and increases in work stress (Veldman, Tartwijk, Brekelmans, & Wubbels, 2013). One of the most common sources of teacher work stress stems from their individual relationships with students (Chang, 2009; Friedman, 2006). Veldman et al. (2013) investigated

four teachers' job satisfaction, burnout, and student perceptions of TSR for twenty-five years utilizing qualitative and quantitative measures. Throughout their careers, all four teachers reported the importance of good TSR, and a decrease in both teacher-reported job satisfaction and student-reported relationship quality were often simultaneous over the years. In a multiple-case study, twelve veteran secondary school teachers were interviewed and administered questionnaires to examine their sense of efficacy, job satisfaction, and TSR. The researchers found that teachers who do not balance their aspirations of creating positive TSR and the realization of those aspirations have low job satisfaction, while teachers with the highest job satisfaction cite contact with their students as a major source of job satisfaction. In addition, teachers with low job satisfaction and negative relationships chose less contact time with students in school and found meaningful work outside of school (Veldman, Admiraal, Tartwijk, Mainhard, & Wubbels, 2014). While the research indicates TSR and job satisfaction are correlated, the previous studies could not delineate causal effects.

In a more recent study, Lavy and Bocker (2017) tested a sequential model of job satisfaction, hypothesizing that a sense of meaning at work would positively affect the teachers' relationships with their students, which would positively affect their job satisfaction. One hundred twenty teachers completed daily questionnaires regarding their sense of meaning at work, their perceptions of their relationships with their students, and their job satisfaction that day. These results suggested that when teachers feel a greater sense of meaning at work, they create and maintain better relationships with students, which lead to increased job satisfaction. To increase teachers' job satisfaction, Lavy and Bocker (2017) suggest helping teachers find meaning in daily events and encouraging teachers' investment in their relationships with their students.

Negative relationships with students are often related to problematic classroom management (Wubbles, Brekelmans, den Brok, & van Tartwijk, 2006). Disruptive behaviors restrict effective use of instructional time. A survey conducted by the American Federation of Teachers indicated that 36% of teachers estimated that they spent over two hours each week dealing with disruptive behaviors. In addition, 17% of those teachers said they spent over four hours each week managing disruptive behaviors. Although these figures may be surprising, they do not include the amount of time administrators spend dealing with students who have displayed disruptive behaviors (Walker et al., 2003). Because aberrant behavior has such detrimental impacts, it is critical that such behavior be addressed. The present study examined noncontingent praise as an intervention to improve teachers' relationships with their students and decrease aberrant behaviors in the classroom.

Class-Wide Behavior Management

Class-wide behavior management techniques are research-based and effective teaching strategies implemented with all students in the classroom to prevent or address problem behaviors (Farmer et al., 2006). Reupert and Woodcock (2010) identified class-wide behavior management techniques commonly mentioned in the literature, which included strategies such as: maintenance of regular classroom routines, communication of clear expectations and directions, teaching of appropriate behaviors, raise or lower voice, praise and encouragement, removal of privileges, and yelling. Class-wide behavior management techniques are often combined to help a large number of students while using few resources (Richards, Heathfield, & Jenson, 2010), and not one intervention is effective with all students in all situations (Walker & Shea, 1998). In classrooms with class-wide effective intervention practices, teachers and students are more likely to have positive interactions, which promotes student learning and academic

engagement (Conroy, Sutherland, Snyder, & Marsh, 2008; Diperna, Lei, Bellinger, & Cheng, 2015; Wubbels et al., 1999) and discourages teacher emotional exhaustion (Reinke, Herman, & Stormont, 2013).

Class-wide management techniques can be separated into four types: preventative, rewards, initial corrective, and later corrective (Reupert & Woodcock, 2010). These four types can be further separated into two: altering the antecedent and altering the consequence of the classroom behavior. Preventative techniques rely on altering the antecedent of a behavior, while reward and corrective techniques alter the consequence of a behavior. An antecedent is a stimulus that occurs immediately before the behavior, and is related to why the behavior occurs (Reupert & Woodcock, 2010; Steege & Watson, 2009). A behavior refers to the response to the antecedent, and a consequence is the reinforcement or punishment that immediately follows the behavior (Reuper & Woodcock, 2010). Strategies based on reward or recognition were associated with better TSR, and when teachers relied on these strategies, they were found to have more influence in the classroom (Jong et al., 2014). However, strategies based on discipline and negative consequences led students to perceive their teachers as less warm and having less influence in the classroom (Jong et al., 2014). In a study on pre-service teachers' use of strategies utilized in the classroom, teachers reported most frequently utilizing low-level initial corrective strategies, such as moving closer to a student or saying a student's name as a warning, which acts as a consequence to the student's behavior. Yet, when these teachers employ preventative techniques, they report finding these to be equally or more successful than other techniques (Reupert & Woodcock, 2010). Research suggests that preventative approaches are successful in creating a more positive environment and engaging students (Simonsen et al., 2008). There are

very few studies that have researched the effectiveness of improving TSR as a preventative approach (Korpershoeck et al., 2016).

Due to research suggesting preventative approaches are more successful (Simonsen et al, 2008; Steege & Watson, 2009), a more dramatic emphasis has been placed on preventative approaches and positive reinforcement as an empirically based method to prevent problem behaviors (Cohn, 2001). Such emphasis has brought about new national programs such as Positive Behavior Interventions and Supports (PBIS) in the schools (Sugai & Horner, 2002). While these techniques in schools have begun to make a difference in preventing problem behaviors, it is estimated that PBIS is in fewer than 8% of schools (Spaulding, Horner, May, & Vincent, 2008). The reasons for this could include cost, time, and motivation. Specifically cost is estimated to be about nine thousand dollars per school in a district, including unanticipated additional costs such as staff turnover and extra training. PBIS is also time-intensive; it is recommended to perform five and a half days of training workshops in the first year, and three days of training workshops in the following years, plus the implementation of the program (Horner et al., 2012). Research suggests that due to limited training in group strategies, teachers often plan individual student behavioral strategies (Tillery, Varjas, Meyers, & Collins, 2010). Because time, money, and motivation constraints hinder the implementation of such large programs, educators may be encouraged to use simpler, class-wide methods for managing disruptive behaviors and increasing academic engaged time, such as praise (Conroy et al., 2008; Reinke et al., 2013). The present study was conducted to identify the effects of noncontingent praise as a classroom intervention not only for improving teacher student-relationships, but also student behavior. This was achieved by measuring the students' academic engaged time.

Academic Engaged Time

One method to assess the effectiveness of classroom management interventions is to measure academic engaged time. The rationale for utilizing this dependent variable is that if a student is academically engaged, learning is more likely to occur than if they are not academically engaged (Finn & Zimmer, 2012). While allocated, or instructional, time refers to the minutes that a teacher is providing students with academic-related activities, academic engaged time (AET) is how much of the allocated time a student spends actively engaged in reading, math, and language arts (Rosenshine, 1981). Several studies have suggested that allotted academic time is half of each school day, and the level of students' AET during the allotted time may be as low as 45% (Black, 2002; Fisher, 2009). If a student is engaged in less than half of the allotted academic time, they are spending a quarter of their school day engaging in academic tasks, and perhaps wasting three-quarters of their school day. There is an empirical relationship between AET and academic performance (Finn & Zimmer, 2012; Gettinger & Walter, 2012) and these academic engagement behaviors can be manipulated through intervention (Finn & Zimmer, 2012).

AET can be divided into three components: behavioral, cognitive, and emotional (Finn & Zimmer, 2012; Mahatmya, Lohman, Matjasko, & Farb, 2012). The behavioral component emphasizes participation in school-related activities, for example, a student raising their hand, watching and listening to the teacher, or working on an assignment. In the current study, the behavioral component of AET is the component that will be assessed through an objective observation measure. The behavioral component of AET is important to research because practitioners understand that engagement behaviors are essential to learning (Finn & Zimmer,

2012), yet they may not have learned how to increase engagement behaviors in the classroom (Hawkins, Go, Hill, Battin-Pearson, & Abbott, 2001; Gettinger & Walter, 2012).

The cognitive component emphasizes investment in the instruction and schooling process. When a student is cognitively engaged, they are willing to exert effort to comprehend difficult material (Mahatmya et al., 2012). The emotional component emphasizes students' affective reactions in the classroom and their relationships within the classroom. Emotionally engaged students will have more positive reactions to new material and positive relationships with and support from their peers and teachers (Finn & Zimmer, 2012; Mahatmya et al., 2012).

Academic engagement evolves from early to middle childhood. In early childhood, the student's interaction with the environment is influenced by their individual characteristics (Mahatmya et al., 2012). In addition, having multiple positive interactions with a variety of people early in the student's schooling can promote learning and build a supportive social context, thus increasing academic engagement (Ramey & Ramey, 2004). In middle childhood, student engagement generally increases because they have learned the rules of school. Student-teacher and student-peer relationships become increasingly important as the student becomes older. Stressful teacher and peer relationships negatively influence the students' classroom engagement, but supportive relationships facilitate students' engagement and achievement (Mahatmya et al., 2012).

School-wide programs, such as First Things First (Connell & Klem, 2006), have worked to increase academic engagement by improving instruction and relationships in schools (Voelkl, 2012). An evaluation of First Things First (Connell & Klem, 2006) concluded that elementary students of supportive teachers were 89% more likely to be engaged than students with low levels of support, and the positive relationships and close-knit communities in the classrooms

aided in this increase. There are several different evidence-based interventions that can increase AET, but they fall under three categories: managerial, instructional, and student-mediated strategies. Managerial strategies are those that focus on behavior management, such as monitoring student behavior, minimizing classroom disruptions and off-task behaviors, providing positive reinforcement, and reducing transition time. Instructional strategies are those that emphasize effective and interactive instruction, such as the facilitation of active student responding and the provision of frequent feedback. Student-mediated strategies are those where the teacher teaches the student to perform the intervention, such as self-evaluation, self-monitoring, and study strategies (Gettinger & Walter, 2012).

Teacher support is a valuable resource, though it may be difficult to know where to start to increase teacher support in the schools. Students who have positive relationships with their teachers are more likely to be engaged academically (Connell & Klem, 2006). Teachers providing praise to their students may be a place to start, as it is both a managerial and instructional strategy in that it can serve as positive reinforcement and/or feedback. The present study was conducted to measure the effects of increased teacher praise on teacher-student relationships and AET.

Teacher Praise

Brophy (1981) defines praise as the expression of approval. An expression of approval could include anything from words of affirmation to a head nod in the student's direction. While praise statements generally provide feedback about a correct answer or appropriate behavior, behavior-specific praise is precise and contingent feedback (Feldman, 2003: Weinstein, 2003). As reinforcement, praise has two important advantages over tangible reinforcement. First, praise is free and can be provided immediately after the desired behavior (Brophy, 1981). Second,

frequent teacher praise leads to better relationships between teachers and students (Howell, Caldarella, Korth, & Young, 2014). In addition to these two advantages, praise can lead to higher rates of appropriate behaviors (Howell et al, 2014; Kern & Clemens, 2007), an increase in learning, better self-esteem among students (Brophy, 1981), an increase in student on-task behaviors (Sutherland, Wehby, & Copeland, 2000), and a general satisfaction with the classroom (Burnett, 2002).

Research on the effectiveness of praise has suggested that to be most effective, praise should be delivered frequently, specifically, and convincingly (Howell et al., 2014; Smith, Bicard, Casey, & Bicard, 2013). Although, praise, especially behavior-specific praise, is an effective method of increasing on-task behaviors and decreasing problematic behavior of students in the classroom, targeted praise was found to be used less than 10% of the time in a general education classroom (Burnett & Mandel, 2010; Dufrene, Lestremau, & Zoder-Martell, 2014; Sutherland et al., 2000).

The National Council on Teacher Quality (2014) lists behavior-specific praise as third in their list of "Big Five" evidence-based classroom management strategies. The first and second strategies relate to setting positively stated guidelines and expectations for various situations in the classroom. Even though the importance of teacher praise is widely known and acknowledged, only one-third of the 122 teacher preparation programs studied by the National Council on Teacher Quality (2014) actually require students to practice such classroom management techniques. Furthermore, many of those programs cover classroom management, but with more of an emphasis on an individual teacher's preference than evidence-based techniques (Greenberg, Putman, & Walsh, 2014).

In a review on the use of approval and disapproval in the classroom over the last 25 years, Beaman & Wheadall (2010) determined that academic behavior is praised more often than social behavior. In addition, inappropriate social behavior is three to six times more likely to attract teachers' attention than appropriate social behavior. This is particularly worrisome given that in classrooms containing students with emotional and behavioral disorders (EBD), the rates of praise ranged from 0.2 – 0.4 times per hour (Wehby, Symons, & Shores, 1995). Another study suggests general education students without special education needs tend to receive more praise than students with special educational needs in integrated classrooms (Derevensky & Leckerman, 1997). In a study conducted by Nelson & Roberts (2000), ninety-nine target students were identified due to behavioral concerns in the classroom. These students and their reciprocal interactions with teachers were observed over a three-year period, along with the teachers' reciprocal interactions with criterion students that were chosen for comparison as a typically behaving student in the classroom. The researchers reported that students with behavioral difficulties not only were provided praise less often than their peers without behavioral difficulties, but also were reprimanded much more than their peers. These studies together provide indication that teachers do not consistently and routinely take advantage of the beneficial effects of praise as a behavioral management technique and often resort to negative social interaction with students through reprimands (Beaman & Wheadall, 2010; Jenkins, Floress, & Reinke, 2015; Nelson & Roberts, 2002). Moreover these studies together suggest that despite evidence that praise is a time and cost efficient method for reducing aberrant behavior (Brophy, 1981) and improving socially acceptable behavior (Howell et al, 2014; Kern & Clemens, 2007), students who exhibit the most challenging behavior are provided less praise (Beaman & Wheadall, 2010; Derevensky & Leckerman, 1997; Wehby, Symons, & Shores, 1995).

Although there are often advantages to using praise, there are also inherent limitations. In a class of 30 students, it can be excessively challenging to track student praise on a student-by-student basis (Brophy, 1981). Also, despite all of the literature to support teacher praise in the classroom, there are mixed results about how best to deliver praise and its varying effectiveness (Brophy, 1981; Burnett, 2001; Elwell & Tiberio, 1994). It is unclear if it is better to praise a student loudly in front of the class or quietly as an aside. Research has indicated that preferences may differ from student to student; some students find praise extremely reinforcing while others find it extremely embarrassing (Brophy, 1981; Burnett, 2001; Elwell & Tiberio, 1994). Elwell and Tiberio (1994) investigated junior high and high school students' preferences for praise, and they also found that 91% of students prefer teacher praise. However, both Elwell and Tiberio (1994) and Burnett (2001) suggest that preferences for praise vary by grade level and gender. Results from both studies suggest that high school students prefer to be provided praise for their academic achievement than good behavior, but elementary students prefer to be praised for their good behavior and effort rather than their academic performance. Eight- to twelve-year-olds desired the most praise, while seniors in high school desired the least amount of praise. Taking these results into consideration, the current research investigated the effects of praise with elementary students. In conclusion, a functional relationship between praise and appropriate behaviors has been established through the literature (Jenkins et al., 2015; Stichter et al., 2009), however it is not clear if this relationship translates to an entire classroom. Jenkins (2015) suggests that future research should be directed to examine the relationship between a teacher's use of more praise and the class-wide appropriate behaviors.

There are several types of praise listed in the literature. The three main types of praise mentioned in the literature are process, outcome, and person praise. Process praise provides

information on the method of completion for or strategies used to complete a task (e.g., "You worked hard"; Skipper & Douglas, 2012). Person praise is when feedback evaluates the person as a whole or a person's traits (e.g., "You are a clever girl"). Outcome praise is when feedback evaluates the end result of a work ("Great job on your project"; Kamins & Dweck, 1999). Behavior specific praise is a verbal statement that indicates approval about a specific response (e.g., "Good sitting"), while academic praise indicates approval about an academic test (e.g., "Good job on this worksheet"; Conroy, Sutherland, Vo, Carr, & Ogston, 2014). Seemingly unimportant, but can make a difference, is the distinction between public and private praise. There is limited research to show how public and private praise affects children of different ages.

Student Grade

Preschool. Conroy et al., 2014 studied the effects of the BEST in CLASS Intervention, which is designed to reduce challenging behaviors in the classroom and increase child engagement through the further development of teachers' use of effective instructional practices. One of the eight learning modules included in this training program is behavior-specific praise. As teachers increasingly utilized behavior-specific praise, student engagement in learning increased and student disruptive behaviors decreased drastically (Conroy et al., 2014). In a similar study, behavior-specific, process praise was delivered to students in a Head Start classroom on a 30-second schedule. After teachers' use of praise increased, children's disruptive behaviors quickly decreased (Dufrene et al., 2012). In a study researching the effects of both process and person praise; however, both types of praise increased motivation compared to no praise (Haimovitz & Corpus, 2011). The research suggests that when utilizing praise with preschoolers, behavior-specific praise has been shown to increase engagement and decreases disruptive behavior, while person and process praise has been shown to increase motivation

(Conroy et al., 2014; Corpus & Lepper, 2007; Dufrene et al., 2012; Haimovitz & Corpus, 2011). Behavior-specific praise has been researched the most with regards with preschoolers, most likely because it is easy to utilize and provides specific information, but more research should be conducted to further determine the effects of various types of praise on preschool children.

Kindergarten. Additional research has been conducted to investigate the effects of praise among kindergarten students. In a study by Barker and Graham (1987), children aged four to twelve years old were presented with videotaped scenarios of two students who either failed or succeeded at a task. Following a success, the student was provided either neutral feedback or process praise. Following a failure, the student was provided either neutral feedback or a blame statement. The child participants were then asked to judge the effort and ability of each target child in the video. Most kindergarten-aged participants saw the child provided process praise (e.g., "Good thinking!") as more able and the blamed student as less competent (Barker & Graham, 1987).

In another experiment considering praise after experiencing a failure, kindergarten-aged participants acted out a scenario with dolls while the experimenter narrated. In all the scenarios, children worked hard on something and made an error in the process. After making the error, the children received one of three types of praise feedback: person praise, outcome praise, or process praise. The children who received process praise showed more positive ratings of self-assessment, affect, and persistence compared to person praise. Those who received person praise endorsed beliefs along the lines of helplessness and contingent self-worth (Kamins & Dweck, 1999). Research also indicates that verbal praise is just as motivating as gestural praise (Morris & Zentall, 2014), and there are no significant differences in intrinsic motivation between kindergarteners rewarded with money or praise (Sarafino & Stinger, 1981).

The previously mentioned research suggests that process and outcome praise affect kindergarten students' internal thought processes more positively than person praise (Kamins & Dweck, 1999), and students viewed praised peers as more able (Barker & Graham, 1987). Research also indicates that verbal praise, gestural praise, and money are equally motivating for kindergartens. (Morris & Zentall, 1999; Sarafino & Stinger, 1981). Even as early as ages five and six, students are making inferences about their peers' competence based on comments from their teachers, but all types of praise are motivating for the students.

Elementary students. Burnett (2001) was interested in elementary students' preferences for praise, especially as praise is used in the classroom. He used a ten-item Preference for Teacher Praise scale. The students could choose often, sometimes, or never for each of the items on the scale. Elementary students have reported desiring the most praise, whether academic or behavior, when compared to students of other ages, but overall, they prefer process praise. According to this self-report poll, 52% of elementary students prefer to be praised quietly while 31% prefer to be praised loudly (Burnett, 2001). Sarafino and Stinger (1981) found that further-graders provided with process praise while doing puzzles took home the most puzzles out of all the other age groups.

This is consistent with Barker and Graham's (1987) results indicating that middle elementary-aged students did not infer other students' ability as a function of teacher feedback, but late elementary-aged students saw praised students as less competent and blamed students as more able. In other research, process praise led to better-student relationships and higher rates of appropriate behaviors in elementary-aged students (Howell, Caldarella, Korth, & Young, 2014).

To study the effects of praise after success and praise after a failure, Skipper & Douglas (2012) instructed children to imagine themselves in five written scenarios based on everyday

school situations. Three scenarios ended with a success and two ended with a failure. After reading each scenario, children received person, process, or no praise. After a success, students responded equally to person, process, and no praise by showing positive affect, being pleased with performance, and showing intentions to persist. After a failure, students who had received process praise showed more positive responses in performance, affect, and persistence than those who had received person praise (Skipper & Douglas, 2012).

Other studies have also examined the effects of praise with students who have recently experienced failure (Corpus & Lepper, 2007; Mueller & Dweck, 1998). Specifically, children who received process praise showed more positive ratings of self-assessment, affect, and persistence while children who received person praise endorsed helplessness and contingent self-worth beliefs (Mueller & Dweck, 1998). Also, girls showed enhanced motivation after receiving process praise and decreased motivation after receiving person praise compared to no praise (Corpus & Lepper, 2007).

The previous research indicates that elementary-aged students prefer and respond more favorably to process praise, (Burnett, 2001; Corpus & Lepper, 2007; Howell et al., 2014; Mueller & Dweck, 1998; Skipper & Douglas, 2012) and person praise affects students negatively (Mueller & Dweck; Skipper & Douglas, 2012). This could be due to students internalizing person praise students and providing them with a helpless attitude, but process praise provides students with a mastery-oriented attitude (Skipper & Douglas, 2012).

Middle and high school students. Not surprisingly, middle and high school students tend to prefer academic praise over behavioral praise (Burnett, 2001; Elwell & Tiberio, 1994). Also, there is no difference in the effectiveness of loud or soft behavior-specific, process praise interventions on academic engagement and disruptive behaviors. In both loud and soft praise, on-

task behaviors increased and disruptive behaviors decreased in the classroom (Blaze, Olmi, Mercer, Dufrene, & Tingstom, 2014). This suggests that praise is beneficial and an effective classroom management tool for middle and high school students. Other than these three studies, there is little research to indicate how praise affects middle- and high school-aged students.

The results of these studies provide consistent support that students of different ages prefer and respond differently to different types of praise. In general, younger students tend to not react differently to process, person, academic, or behavioral praise; however, differences begin to appear in early elementary school. The evidence describes praise as an effective intervention for all ages; although its positive effects peak in elementary school. Because of this, the present study seeks to examine the effects of praise with elementary students.

Class-Wide Praise Interventions

While there have been a few studies examining how the rate of teacher praise affects individual student's levels of on-task behavior (Beaman & Wheadall, 2010; Jenkins, Floress, & Reinke, 2015; Nelson & Roberts, 2002; Reinke et al., 2013), fewer studies have examined praise-specific interventions in the classroom. Instead of examining only the effects of praise, classroom management strategies are coupled together to create an intervention package, such as Class-Wide Function-Related Intervention Teams (Juniper Gardens Children's Project, n.d.; CW-FIT). CW-FIT is taught to teachers and consists of four evidence-based activities aimed at improving class-wide engagement (Juniper Gardens Childrens' Project, n.d.).

To examine the effects of behavior-specific praise on the on-task behavior of her classroom, a seventh-grade teacher was trained to provide more behavior-specific praise and less reprimands to students (Hollingshead, Kroeger, Altus, & Trytten, 2016). With the help of the primary investigator, the teacher also developed classroom rules. The results of this study

suggested reducing reprimands and increasing praise could increase student on-task behavior. Qualitatively, the teacher and students comments throughout the intervention suggested that it created a more positive classroom environment. Moderately higher levels of teacher praise and student on-task behavior were maintained over a period of two months. These results suggest that an increase in teacher praise can lead to class-wide changes (Hollingshead et al., 2016).

In another study, consultants trained four teachers in situ to provide praise at a rate of one praise per minute (LaBrot, Pasqua, Dufrene, Brewer, & Goff, 2016). Every minute, the consultants provided verbal phrases or sentences through a bug-in-the-ear device that the teacher was expected to say exactly. The training sessions lasted for five days, and then data were collected on the teachers' levels of praise one week after and one month after the training. Teachers were observed providing the most praise during the in-situ training phase, and their rate of praise decreased substantially after the training was completed. One teacher provided close to zero praise following a second training session, therefore she was provided the option to utilize a MotivAider™ (i.e., device that vibrates on a set schedule) or feedback notes to increase her rate of praise. She chose the MotivAider™, which resulted in an immediate and stable increase in her rate of praise provided to the classroom (LaBrot et al., 2016). These results suggest that a MotivAider™ may be a helpful tool to utilize when reminding teachers to provide praise to their students. The current study followed-up on these results by also examining how scheduled praise impacts the students' on-task behavior.

The quality of the TSR has also been found to be significantly related to teachers' emotional experiences during instruction (Hagenauer, Hacher, & Volet, 2015). Teachers who felt more connected to their students through positive relationships experienced more joy and less anger and anxiety, suggesting that teachers' ability to manage classrooms and form positive

interpersonal relationships are important factors of teacher emotional wellbeing and job satisfaction (Hagenauer et al., 2015). A teacher's ability to connect to students is important, and thus may need to start by being artificially fostered in a systematic way, such as utilizing noncontingent praise.

Noncontingent Reinforcement

Providing praise on a timed schedule, such as the previous example, can be easily utilized in large classrooms (Cooper et al., 2007; Kaplan & Carter, 1995), is not dependent on student's behavior (Kodak, Miltenberger, & Romaniuk, 2003), and can prevent aberrant behaviors (Carr et al., 2000; Vollmer et al., 1993). Noncontingent reinforcement (NCR), also called a fixed-time schedule, is reinforcement provided to an individual on a timed schedule independent of an individual's behavior (Kodak, Miltenberger, & Romaniuk, 2003). NCR works on the antecedent end of the three-term contingency model. Through providing reinforcement freely and frequently, the individual's desire for reinforcement is met without the need to engage in the aberrant behavior (Kaplan & Carter, 1995; Vollmer et al., 1993). While both extinction and NCR break the behavior to consequence association, extinction works by completely removing reinforcement from the situation and NCR delivers reinforcement systematically (Alberto & Troutman, 2013). The teacher from the previous example could react to the student consistently leaving his seat during group instructional times by using NCR. Instead of only providing praise to the student while he is sitting in his seat, the teacher could instead provide praise to thestudent on a predetermined schedule regardless of the student's behavior at the time.

According to a review of the NCR literature conducted by Carr et al. (2000), NCR was not systematically studied until the late 1960s. Lachter, Cole, & Schoenfeld (1971) were among the first to evaluate dense and lean schedules of fixed ratio reinforcement with pigeons. They

found that dense schedules produced greater reductions in behavior. That is, those pigeons that received a higher rate of NCR had lower rates of behavior. This study points out an interesting phenomenon. When reinforcement was changed from being dependent on a response to being independent from a response, a consistent reduction in response was observed. NCR still allows for the presence of the reinforcer while extinction does not. In scenarios where reinforcement is unavoidable, NCR allows for the response-reinforcer relationship to be interrupted without taking away the reinforcement while decreasing the potential for an extinction burst (Carr et al., 2000).

According to Matson et al., 2011, NCR is the most commonly used behavioral intervention. NCR works by satisfying the establishing operations, therefore dissipating the need for the reinforcement. This process is called satiation. NCR could also aid in the extinction process because reinforcement is still being provided consistently (Vollmer et al., 1993). NCR is easy to use, and this is especially important when discussing the viability of an intervention in the classroom. NCR does not depend on tracking a child's behavior; instead it only depends on time. NCR in the form of praise also creates a positive, praise-filled environment, which is important in a classroom. A limitation of NCR is that while it suppresses problematic behaviors, it also can lead to the suppression of positive behaviors (Kaplan & Carter, 1995). The motivation to engage in these positive behaviors could be lost due to obtaining reinforcement without effort on the part of the student. Another limitation is that if the NCR schedule happens to coincide with the problem behavior, it could strengthen the problem behavior. To combat this, the recommendation is to thicken the reinforcement schedule so that the child's behavior is being reinforced more often than the problem behavior occurs (Kaplan & Carter, 1995; Vollmer et al., 1993).

Noncontingent reinforcement is a broad term, so instead the current research utilized the term noncontingent praise (NCP) to discuss the effects of praise delivered noncontingently of the behavior. An example of NCP for a behavior that is maintained by attention is delivering a statement of praise to a child every 2 minutes independent of the behavior the child is exhibiting at the moment the praise is delivered. By providing the child the attention that mediates his or her behavior, the need to engage in the unwanted behavior is no longer present. As such, NCR generally serves to suppress behavior, because the child is accessing reinforcement independent of his/her behavior (Carr et al., 2000; Vollmer et al., 1993).

NCR has been proven to be an effective treatment for problem behaviors. In a study conducted by Vollmer et al. (1993), three adult females diagnosed as mentally retarded received alternating treatments of NCR and DRO for their chronic self-injurious behaviors (SIB) maintained by attention. During the NCR condition, attention was delivered continuously at the beginning, and as the rate of self-injurious behaviors decreased, the schedule of attention was faded. Both NCR and DRO were effective in suppressing the self-injurious behaviors. NCR has clearly been an effective treatment for problem behaviors in a clinic setting and has become one of the most reported function-based interventions (Alberto & Troutman, 2013; Kaplan & Carter, 1995).

Noncontingent praise in the classroom. While many studies have demonstrated NCR to be effective in clinic settings, others have begun to demonstrate its promise in school settings. Rasmussen and O'Neill (2006) assessed the effects of noncontingent attention on the problem behavior of three students with emotional-behavioral disorders in a day-treatment classroom setting. Each students' initial noncontingent attention schedules were based on their problem behavior during baseline. All three students' levels of disruptive behavior decreased and were

generally maintained even when the noncontingent attention schedule was thinned (Rasmussen & O'Neill, 2006).

In a study by Banda and Sokolosky, (2012), disruptive behavior data were collected in a classroom of a 7-year-old boy diagnosed with ADHD. A functional analysis suggested his disruptive behaviors (e.g. talking out and loud vocalizations that disrupted other students' independent work) were maintained by attention. During a 5-minute period in the morning, the teacher provided noncontingent attention to the student every 20-seconds in the form of verbal praise, a smile, or eye contact. This attention was provided to him regardless of what behavior he was engaging in at that moment. In the two baseline phases of the ABAB study, the range of the frequency of talk outs was from 15 to 39, with an average frequency of 22.2 and 38.8 respectively. In the two intervention phases, the range of the frequency of talk outs was from 2 to 16, with an average frequency of 9.5 and 6.6. The noncontingent attention provided by the teacher was clearly effective in reducing talk out behaviors (Banda & Sokolosky, 2012). In another study, Austin and Soeda (2008) thought that many NCR schedules used in the literature were excessively dense and not practical to use in a classroom setting. In their study, a third-grade teacher chose a schedule of reinforcement for her general education classroom that she thought would be manageable. She decided on a 4-minute fixed-time schedule, which was effective in reducing off-task behavior for both of the observed boys. Again, these findings indicate that a schedule of noncontingent reinforcement does not need to be excessively dense to effectively reduce unwanted behaviors in a classroom setting. These findings also suggest that incorporating teacher opinion into the decision of a schedule of reinforcement may make an intervention more acceptable and easy to use for teachers.

More recently, Pinar (2015) examined the effects of time-based (i.e., fixed and variable) attention schedules with six students in inclusive classrooms: three with intellectual disabilities and three typically developing peers. For all six students, disruptive behaviors decreased and on-task behaviors increased. Teachers rated their acceptability of the intervention high, and reported to the researchers that they focused more on the positive behaviors following the intervention (Pinar, 2015). However, each of these studies examined the effects of noncontingent attention towards one student, not the entire classroom. The present study was conducted to examine the effects of training teachers to provide noncontingent praise to all students in the classroom.

Training of an Intervention

Learning a new skill is a process, not an instantaneous development. There are four levels for change when teachers implement a relationally-based intervention: (1) teachers' knowledge and cognitions about their interactions with their students, (2) the presence of relational supports for themselves, (3), teachers' exposure to individualized feedback regarding the implementation, and (4) a target on which to focus change efforts (Pianta, Hamre, & Allen).

Haring and Eaton (1978) proposed a research-based instructional hierarchy for teaching a new skill. The development of the instructional hierarchy has impacted our knowledge of learning in two ways. First, it taught practitioners to focus on student responding and the way responding changes over time by bringing the behavior under stimulus control through instruction before training the behavior to generalize to other stimuli (Ardoin & Daly, 2007; Haring & Eaton, 1978). Second, it taught practitioners how to generate stronger responses by reacting to the change in responding over time. In sum, the instructional hierarchy provides a framework for what to do and when to do it (Ardoin & Daly, 2007).

The first of four stages is the acquisition phase, which includes the first appearance of the behavior until it is relatively accurately performed (Haring & Eaton, 1978). The accuracy of the behavior is not necessarily stable at this point (Daly, Lentz, & Boyer, 1996). The level of accuracy required to move to the next stage is different depending on the specific skill. For example, one must spell their own name with 100% accuracy, but it is not a necessity to learn to spell all names with 100% accuracy, especially the names of unknown people. The second stage is fluency, which refers to how quickly and accurately the behavior can be performed. An example of fluency is how quickly one could correctly spell their own name. The third stage is generalization, which refers to the transfer of the accurate and fluent performance of the behavior to other settings or formats. For example, the skill of spelling correctly one's name at school and at home, on coloring and academic worksheets are examples of generalization of a behavior. The fourth and final stage is differentiation, which refers to the modification of the behavior to fit the response that is necessary. An example of differentiation is an individual's response to filling in their name in the bubbles on an OpScan sheet. Within each of these stages are various strategies to best meet the necessary requirements of the emphasis within each stage (Haring & Eaton, 1978).

To assist in the acquisition of the target behavior, Haring and Eaton (1978) recommend utilizing demonstration, models, cues, and prompting. Demonstration involves actively performing the skill, such as spelling out the individual's name on the board (Haron & Eaton, 1978). Modeling involves an example of the skill; for example, providing an example of the individual's name. A cue is a reminder of the skill without providing the entire answer. For example, a cue for spelling one's name would be telling them the first letter and letting the individual spell out the rest of their name.

An individual should receive certain interventions for where they are in the hierarchy (Ardoin & Daly, 2007; Daly et al., 1996), and there are many different evidence-based ways to train teachers how to utilize praise in the classroom (Cavanaugh, 2013; Pinter, East, & Thrush, 2015). Because the introduction of noncontingent praise is most likely a new concept, the current researchers followed the recommendations of an individual in the acquisition stage. They provided direct instruction on what noncontingent praise is and its benefits, and demonstrations in the form of examples of praise (Sweigart, Landrum, & Pennington, 2015). They also provided cues through the use of a MotivAider ™ and summative prompts in the form of performance feedback following each session.

Performance feedback has been used in several studies to train teachers on the use of behavior-specific praise (Cavanaugh, 2013; Duchaine, Jolivette, & Fredrick, 2011; Reinke, Lewis-Palmer, & Martin, 2007). Performance feedback is when an outside observer, such as a faculty member or graduate student, provides information about the individual's performance (Cavanaugh, 2013). It has been classified as an evidence-based intervention according to the What Works Clearing House guidelines (Fallon et al., 2015) and a potentially evidence-based intervention according to Council for Exceptional Children's standards (Sweigart, Collins, Evanovich, & Cothren, 2016). In a review of the literature on performance feedback and its effect on teacher praise, Sweigart et al. (2016) evaluated three methodologically sound studies suggesting that performance feedback does increase teachers' rate of praise in the classroom, but future research should continue to examine this link. The present study utilized performance feedback as a way to ensure that the intervention was implemented with fidelity.

Treatment Fidelity

When researching the effects of an intervention, treatment fidelity is an important component to consider. The term *treatment fidelity* implies various meanings across disciplines (Century & Cassata, 2014; King & Bosworth, 2014). According to Bellg et al. (2004), treatment fidelity is the "methodological strategies used to monitor and enhance the reliability and validity of behavioral interventions." While treatment fidelity research in psychology and education is young and growing, there is extensive research on treatment fidelity in related fields such as medicine and prevention science (Sanetti & Kratochwill, 2014).

Treatment fidelity is an important component of both research and practice. The level of treatment fidelity practitioners utilize could vastly change the interpretation of the results of a successful or unsuccessful intervention (King & Bosworth, 2014). Thus, to obtain accurate conclusions regarding the effectiveness of an intervention, treatment fidelity must be assessed (Bellg et al., 2004). Practitioners benefit from understanding the critical elements that comprise treatment fidelity and how that may impact their clients (Bellg et al., 2004). In addition, monitoring the fidelity of the intervention promotes early detection of errors, which in turn reduces costs and improves the intervention (Moncher & Prinz, 1991).

The purpose of the current study was to assess the effects of a class-wide intervention, noncontingent praise, in the following areas: students' academic engaged time, teacher-student relationships, teacher job satisfaction, intervention acceptability, and teacher stress.

Hypotheses

The following hypotheses were tested.

1. NCP will result in an increase of students' overall academic engaged time, defined as looking at the teacher, the board, or their work, making an appropriate comment, or following directions for a specific task.
2. Because teacher praise will become more consistent in the classroom as it is prompted, it is hypothesized that the rate of praise will increase from baseline to intervention and baseline to maintenance.
3. It is hypothesized that NCP will be highly acceptable (above a three on the IRP-15) to the teacher as a class-wide behavior management technique (Austin & Soeda, 2008).
4. The teachers' perceptions of the quality of the teacher-student relationship will increase following the NCP intervention.
5. The teachers' ratings of their job satisfaction will increase and stress will decrease following the NCP intervention.

CHAPTER II: METHODOLOGY

Participants

A university-based Institutional Review Board that oversees the protection of human participants in research approved all procedures used in the current study. Participants included six teachers and their classrooms in a school located in the Midwestern region of the United States. Consent was obtained from the teacher participants. All sessions were conducted during a 20-minute whole-group activity.

Classroom 1 was a fifth grade classroom. The teacher had a Master's degree and taught fifth grade for five years. The classroom was observed during reading instruction, which generally consisted of the teacher reading to the class, the class independently reading, or the class working on reading assignments.

Classroom 2 was a third grade classroom. The teacher was working towards a Master's degree and taught third grade for three years. The classroom was observed during science and social study instruction, which generally consisted of the class independently reading, listening to teacher instruction, or working on group projects.

Classroom 3 was a third grade classroom. The teacher had a Master's degree and taught third grade for thirteen years. The classroom was observed during reading instruction, which generally began with the teacher providing a lesson and instructions to the class at the carpet, and then the students working on a reading assignment or independently reading at their desks.

Classroom 4 was a first grade classroom. The teacher was enrolled in a Master's in education program and taught first grade for six years. The classroom was observed during spelling and writing instruction, which generally consisted of the teacher engaging the students

in the lesson through students answering questions verbally, reading out loud, or writing on individual whiteboards.

Classroom 5 was a fourth grade classroom. The teacher had a bachelor's degree and taught fourth grade for two years. The classroom was observed during writing and vocabulary instruction, which generally consisted of the teacher instructing the class on definitions while the class sat on the carpet or the teacher helping small groups of students while they worked on research projects independently.

Classroom 6 was a fifth grade classroom. The teacher had a bachelor's degree and taught fourth grade for four years. The classroom was observed during math instruction, which consisted of the teacher utilizing a PowerPoint to teach a math lesson while students took notes at their desks.

Materials

Demographics Questionnaire

Each teacher completed a demographic questionnaire to determine their age, gender, ethnicity/race, years of experience teaching, highest degree earned, and grade taught (Appendix A). Nationally, 84% of K-12 public school teachers are female. Twenty-two percent of teachers are under the age of 30, and 31% of teachers are aged 50 and older. With regard to race, 84% are White, 7% are Black, 6% are Hispanic, and 4% other races (Feistritzer, 2011).

Student-Teacher Relationship Scale – Short Form (modified; STRS-SF)

The modified STRS-SF (Whitaker, Dearth-Wesley, & Gooze, 2015; Appendix B) was altered from the original STRS-SF (Pianta, 1992) to gather information regarding how teachers feel about their relationships with the class as a whole, instead of separate students. It assesses student-teacher relationships on a 15-item Likert scale (See Appendix B). The Likert scale

ranges from 1 (definitely does not apply) to 5 (definitely applies). The items were grouped into two subscales, conflict and closeness, which have been shown to have high discriminant validity (Hamre & Pianta, 2001). Items for each subscale were summed to obtain a subscale score, with higher scores indicating higher levels of conflict or closeness. Possible scores were 8-40 for conflict and 7-35 for closeness. Whitaker et al. (2015) reported internal consistency of the modified scales to be .73 for conflict and .72 for closeness. The correlation between the two scales was -.37.

Teacher Stress Inventory (TSI)

Twelve items from the TSI (Fimian, 1987) were used to specifically measure teachers' stress in relation to discipline and motivation and work-related stressors (Appendix C). It assesses the teacher concerns on a 1 (no strength; not noticeable) to 5 (major strength; extremely noticeable) Likert scale. The internal consistency reliability was .80 for work-related stressors and .86 for discipline and motivation. The test-retest reliability was between .87 and .99 for both subscales. The TSI was demonstrated to have adequate content and convergent validity (Fimian & Fastenau, 1990).

Job Satisfaction Survey (JSS)

The JSS (Spector, 1994) is a 36-item scale that assesses employee attitudes about their job and specific aspects of their job (Appendix D). There are nine subscales with four items in each subscale to give scores for attitudes towards pay, promotion, supervision, fringe benefits, contingent rewards, operating procedures, coworkers, nature of work, and communication. In addition, a total score including all subscales is also provided. Teachers choose a number from 1 (disagree very much) to 6 (agree very much) for each item. The internal consistency reliabilities for each subscale ranged from .60 to .82 (Spector, 1985).

Intervention Rating Profile-15 (IRP-15)

The IRP – 15 (Martens, Witt, Elliott, & Darveaux, 1985) assesses general acceptability of an intervention through a 15-item Likert scale (See Appendix E). The Likert scale ranges from 1 (strongly disagree) to 6 (strongly agree). Total scores were generated and assessed to determine average acceptability of the interventions by the teacher, with higher scores meaning the intervention is more acceptable and lower scores meaning the intervention is not as acceptable by the teacher (Cihak et al., 2007). All items associated with the IRP-15 have factor loadings ranging from .82 to .95 on a single factor (Witt & Elliot, 1985). As cited in Witt and Elliot (1985), reliability of the IRP-15 was .98 (Witt & Martens, 1983).

Classroom Behavioral Observation

The Classroom Behavioral Observation Form (Cates, 2011; i.e., individual-fixed) was utilized to assess the average level of academic engaged time (AET) throughout the class (Appendix F). A 30-second partial time-sampling procedure was used to record the behavior of a different student. Therefore, each student was observed at least two times throughout the observation time in the same order each day, according to their seating chart. This method has been found to be consistent with criterion estimates of class-wide behaviors (Briesch, Hemphill, Volpe, & Daniels, 2014). To check the accuracy of global behaviors of the classroom, a scan was conducted during every fifth interval for high intensity behaviors. High intensity behaviors were defined as a student engaging in a behavior that disrupts the learning environment of more than one other student. This scan occurred twelve times during each observation period.

Teacher Behavior Observation

Each teacher's frequency of reprimands and praise were tallied throughout the 20-minute observation to determine the teacher's rate of attention towards the classroom. The data were recorded on the Classroom Behavioral Observation Form (Cates, 2011; Appendix F).

Procedure

Graduate clinicians were trained to code student and teacher behaviors through videos until they were able to code with at least 90% accuracy. Prior to the start of the intervention implementation, the classroom behaviors were coded over a 20-minute period for at least three days, which included the frequency of teacher praise and reprimands and a 30-second partial time sampling of alternating students' AET, inappropriate motor behavior, and inappropriate socializations. The layout of the classroom was illustrated on day one of the observation. The data were maintained in a locked room at a university clinic. A multiple baseline design across participants was used to determine the effectiveness of noncontingent praise as a class-wide intervention. In the baseline phase, the teacher was instructed to respond to the class as she normally would and graduate clinicians coded class-wide and teacher behaviors. The pre-intervention student-teacher relationship was assessed by giving each teacher the STSQ-SF during baseline. Demographic data, job satisfaction, and teacher stress data were collected during baseline. To determine the rate of NCP to be delivered during the intervention phases, the average rate of praise and reprimands provided by the teacher during baseline was calculated.

Between the baseline and the intervention phase, each teacher was trained on NCP and its benefits, including the differences between process and person praise. The graduate clinician demonstrated process, person, and general praise to the teacher.

During the intervention phase, the teacher was provided a MotivAider™ that vibrated on the predetermined NCP schedule and instructed to provide praise to a student or the classroom each time it vibrated. Upon receiving this signal, the teacher delivered praise to either an individual student or the whole class (e.g. "Good sitting, Brad"). The teacher was instructed to continue to praise, prompt, reprimand, or ignore students in the classroom as usual outside of the predetermined NCP schedule. The frequency of teacher attention directed towards the class and the students' AET were each recorded. Each session lasted 20 minutes. After each intervention session, teachers were provided performance feedback on the expected and provided praise frequency. Each baseline phase lasted at least three days and each intervention phase at least five days per the recommendation of What Works Clearinghouse (Kratochwill et al., 2010). After the intervention phase, each teacher completed the IRP-15 (Martens, Witt, Elliott, & Darveaux, 1985) to rate their acceptability of the intervention. All teachers completed the STRS-SF (Whitaker, et al., 2015) to assess their perceptions of the student-teacher relationship. Approximately two weeks after the intervention ended, a one-day maintenance phase was conducted. Interobserver agreement was assessed for 20% of each condition for each classroom.

Dependent Variables

Data on teacher attention (i.e. praise and reprimands) were collected through frequency counts divided by the amount of time observed to obtain a rate measure. Teacher praise was defined as any statement that indicated approval (e.g., "Good job sitting."). A teacher reprimand was defined as a statement that indicated rebuke (e.g., "Stop that!" or "No running.") or provided a consequence for an undesirable behavior. The average rate of AET exhibited by the classroom was collected through frequency counts divided by time for a rate measure. AET was

operationally defined as looking at the teacher, the board, or their respective work, making an educationally appropriate comment, and/or following directions for a specific task.

Student-teacher relationship was assessed before and after the intervention utilizing the STRS-SF (Whitaker et al., 2015). Job satisfaction was assess utilizing the JSS (Spector, 1994). The acceptability of the intervention was assessed using the IRP-15 (Martens, Witt, Elliott, & Darveaux, 1985); results below three indicated that the intervention was unacceptable to treat the problem, and results above three indicated that varying aspects of the intervention were acceptable (Witt & Martens, 1983).

Treatment integrity was assessed by recording the frequency of teacher praise and comparing it to the rate at which the MotivAider™ was set. If the frequency of teacher praise provided was at or above the prompted level, that day was coded as 100% treatment integrity. If the frequency provided was below the prompted level, the treatment integrity was then determined from the frequency of praise delivered to the target student divided by the number of times the teacher was signaled to provide praise and multiplied by 100 to obtain a daily percentage.

Independent Variables

The schedule of NCP was provided at the teacher's average level of attention directed towards the classroom in baseline (Poirot, Hilger, & Cates – unpublished manuscript). Because each classroom had differing rates of teacher behaviors, each classroom had a different level of NCP. Three classrooms were provided praise at a fixed schedule of NCP and three classrooms were provided praise at a variable schedule of NCP.

CHAPTER III: ANALYSIS OF DATA

Visual Analysis

A multiple-baseline design across students was used to evaluate the effects of NCP on the class-wide academic engaged time (AET) and teacher attention provided to the classroom. Based on suggestions by the What Works Clearinghouse for single case designs that meet evidence standards (Kratochwill et al., 2010), the following considerations were made: interobserver agreement, nonoverlapping data points, standard mean difference, and median baseline reduction.

Criteria for Designs that Meet Evidence Standards

The first criterion is that an independent variable was manipulated by the researchers. This was accomplished in that the presence of the MotivAider™ providing an NCP schedule for the teacher to follow was provided during the intervention conditions. The second criterion is that a multiple baseline design must include an attempt to demonstrate an intervention effect at three different points in time (Kratochowill et al., 2010). This was achieved by using at least three participants. At least three data points were gathered during the baseline phase to demonstrate the presence and pattern of AET. In a multiple baseline design, each phase must have at least three data points to meet standards (Kratochowill et al., 2010). This was achieved by collecting at least three data points per phase.

Interobserver agreement. Interobserver agreement (IOA) must be assessed for 20% of each condition during data collection (Kratochwill et al., 2010). Interobserver agreement was assessed using Trial-By-Trial IOA, which is calculated by the number of recorded items that were in agreement divided by the total number of items recorded. This number was multiplied by

100 to obtain a percentage (Cooper et al., 2007). The average IOA for baseline was 92.5%, intervention was 96.0%, and maintenance was 95.6%.

Criteria for Demonstrating Evidence of a Relation Between an Independent and Dependent Variable

Each graph was visually analyzed to examine data patterns within- and between- phases. The consistency of the level, trend, variability, immediacy of the effect, proportion of overlap, and consistency of data were examined to determine the presence of a causal relationship. External factors and anomalies were also observed. Decision rules were also based on the What Works Clearinghouse (Kratochwill et al., 2010). Specifically, these rules were 1) no evidence to support the intervention is exhibited if the study does not provide three demonstrations of an effect, 2) moderate evidence to support the intervention is exhibited if the study provides three demonstrations of an effect and at least one demonstration of a non-effect, 3) strong evidence to support the intervention is exhibited if the study provides three demonstrations of effects and no non-effects (Kratochwill et al., 2010). These data are presented in the results section.

Nonoverlapping data points. The proportion of overlap was examined using an alternative calculation of the percentage of non-overlapping data points between baseline and intervention phases. The percentage of data points exceeding the median of the baseline phase was calculated (Ma, 2006). Based on percentage of non-overlapping data points, the intervention was considered highly effective (90%), moderately effective (70-80%), or minimally effective (50-70%) (Nye & Turner, 2007). These data are presented in the results section.

Standard mean difference. Subtracting the mean of the baseline phase from the mean of the intervention phase and dividing that by the standard deviation of the baseline is how the standard mean difference was calculated (Watkins & Pacheco, 2000). The intervention was

determined to have had a large effect if the standard mean difference was greater than or equal to .8 standard deviations, a medium effect if it was greater or equal to .5 standard deviations, and a small effect if it was greater or equal to .2 standard deviations (Olive & Franco, 2007; Watkins & Pachecho, 2000). These data are presented in the results section.

Non-effects: Several non-effects could take place in single case design research. Non-effects include:

1) the absence of a clearly defined pattern of behavior during the baseline that could indicate the occurrence of behavior in the future,
2) the absence of a clearly defined pattern within any of the phases,
3) the intervention cannot be causally linked to the outcome variable because of a delay in change of student and teacher behaviors after the introduction of the NCP schedules or the observed and predicted patterns of student and teacher behavior overlap between baseline and intervention phase,
4) the absence of consistent patterns across similar phases,
5) and a causal relation is not demonstrated through comparison of the observed and predicted patterns of the student and teacher

Intervention Acceptability Analysis

The acceptability of both interventions was assessed using the IRP-15 (Martens, Witt, Elliott, & Darveaux, 1985); results below three indicated that the intervention was unacceptable to treat the problem, and results above three indicated that varying aspects of the intervention were acceptable (Witt & Martens, 1983). Total scores were generated and assessed to determine mean acceptability of the interventions by the teacher, with higher scores meaning the

intervention is more acceptable and lower scores meaning the intervention is not as acceptable by the teacher (Cihak et al., 2007).

Descriptive Data Analysis

Due to the small number of participants, the pre-intervention and post-intervention job satisfaction, teacher stress, and teacher-student relationship data were analyzed and interpreted with caution as descriptive data. Means, standard deviations, and Cohen's *d* effect sizes were reported.

CHAPTER IV: RESULTS

Hypothesis One

It was hypothesized that NCP will result in an increase in students' overall academic engaged time, defined as looking at the teacher, the board, or their work, making an appropriate comment, or following directions for a specific task.

For each classroom, the rate of NCP was calculated from the frequency of teacher attention (i.e., praise, reprimand) directed towards a group of three or more students during the baseline phase in each classroom. Teachers in Classrooms 1 through 3 provided praise on a fixed schedule (e.g., every 155 seconds), while teachers in Classrooms 4 through 6 provided praise on a variable schedule. See Table 1 for specific rates. The variable schedule was set using the "variable" function on the MotivAider™: the MotivAider™ sent a signal to the teacher at random intervals up to their individual rate (e.g., up to 155 seconds). The teacher was instructed to ignore the signals once they met their goal. Treatment integrity was 100% for all teachers in all conditions.

Table 1

NCP Schedules by Classroom

Fixed	1	375s
	2	155s
	3	331s
Variable	4	240s
	5	204s
	6	440s

Note: Displays the rate that each teacher provided praise to their classroom during the observation period.

Table 2

Means, Medians, and Ranges for Academic Engaged Time

	Mean		Median		Range Difference	
	Baseline	Intervention	Baseline	Intervention	Baseline	Intervention
1	74.1	77.1	76.5	76.5	32.3	8.9
2	66.5	85.3	64.7	83.8	23.5	8.8
3	70.1	85.9	67.6	85.3	29.4	8.8
4	82.9	88.8	82.4	88.2	17.7	11.7
5	74.1	88.8	73.5	91.2	17.7	5.9
6	80.7	89.4	79.4	88.2	17.7	8.8

Table 2 displays the means, medians, and range differences of the percentage of intervals that students were academically engaged for the baseline and intervention phases of each classroom. The range difference shows the variability of AET in each phase, and it was calculated by subtracting the lowest AET from the highest AET.

Table 3

Means, Medians, and Ranges for Inappropriate Behaviors

	Mean		Median		Range Difference	
	Baseline	Intervention	Baseline	Intervention	Baseline	Intervention
1	40.6	33.5	44.1	35.3	29.4	41.2
2	48.2	35.3	51.5	35.3	35.3	5.8
3	44.1	24.7	47.1	23.5	23.5	14.8
4	27.6	19.4	29.4	17.6	26.4	8.8
5	44.6	19.4	43.2	20.6	35.2	11.8
6	29.9	19.4	26.5	17.6	41.3	20.6

Table 3 displays the means, medians, and range differences of the percentage of intervals that students were engaged in inappropriate behaviors for the baseline and intervention phases of each classroom. The range difference shows the variability of IB in each phase, and it was calculated by subtracting the lowest IB from the highest IB.

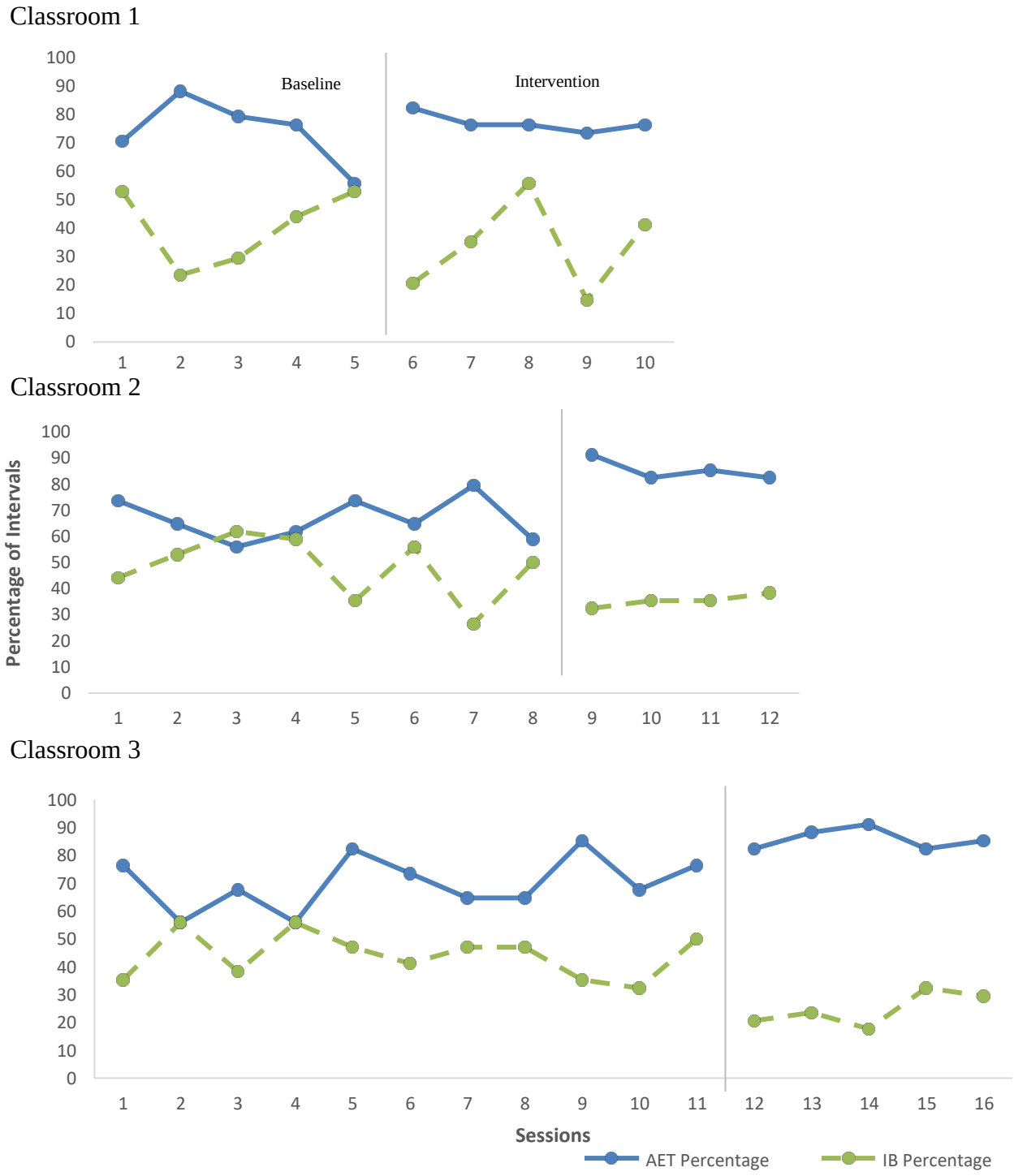


Figure 1. NCPf Classrooms: Academic Engaged Time and Inappropriate Behaviors

Classroom 1

The top graph in Figure 1 represents the percentage of intervals that the students in the classroom were academically engaged and the percentage of intervals they were engaged in inappropriate behaviors during baseline and intervention conditions.

Variability. Tables 2 and 3 represent the range differences for the academic engaged time and inappropriate behaviors of Classroom 1. During baseline, the range of AET was 32.3%, whereas during intervention the range was 8.9%, indicating less variability. However, inappropriate behaviors (IB) became more variable from baseline to intervention, shifting from 29.4% difference to 41.2%. These changes in variability suggest that NCP was more effective in stabilizing AET than IB.

Standard mean difference. was used to measure differences in level. Tables 2 and 3 represent the means for the academic engaged time and inappropriate behaviors of Classroom 1. The standard mean difference for AET was .24. This is considered to be a small effect (Olive & Franco, 2007; Watkins & Pachecho, 2000). The standard mean difference for IB was -0.52. This is considered to be a medium effect. These effect sizes suggest that while there was a change in the level of both AET and IB, the change was more significant for IB.

Non-overlapping data points. The percentage of non-overlapping data points for students' AET was 20 percent. This is considered to be an ineffective treatment. The percentage of non-overlapping data points for students' IB was 80 percent. This is considered a highly effective intervention (Nye & Turner, 2007). Based on this analysis, NCP had a larger effect on students' inappropriate behaviors than their academic engaged time.

Trend. The students' AET in baseline is decreasing at a steeper level than in intervention, suggesting that NCP slowed the decrease in AET. The students' IB in baseline and intervention have similar trends, suggesting that NCP did not impact the trend of IB.

Immediacy. During the first day of intervention, students' AET improved by 32 percentage points and IB decreased by 18 percentage points, indicating that there was an immediate effect upon implementation of the intervention.

Summary. The results for Classroom 1 suggest AET immediately improved and became more predictable (i.e., less variable and more level) from baseline to intervention. However, the change from baseline to intervention was a small effect. The results also suggest that from baseline to intervention, student IB decreased immediately and sustained a lower level. However, IB became more variable in intervention and had a similar increasing trend to that of IB in baseline. Together, these results suggest that while NCP had a positive effect on student behavior, it was a small effect.

Classroom 2

The middle graph in Figure 1 represents the percentage of intervals that the students in the classroom were academically engaged and the percentage of intervals they were engaged in inappropriate behaviors during baseline and intervention conditions. Only four days of data collection were collected for Classroom 2 intervention because the teacher was absent for two weeks after the fourth day of intervention.

Variability. Tables 2 and 3 represent the range differences for the academic engaged time and inappropriate behaviors of Classroom 2. The AET of Classroom 2 became less variable from baseline to intervention. During baseline, the range of AET was 23.5%, whereas during intervention the range was 8.8%, indicating less variability. IBs also became less variable from

baseline to intervention, shifting from 35.3% difference to 5.8%. This suggests that the intervention led to more stable responding in student behavior.

Standard mean difference was used to measure differences in level. Tables 2 and 3 represent the means for the academic engaged time and inappropriate behaviors of Classroom 2. The standard mean difference for AET was 2.30. This is considered to be a large effect (Olive & Franco, 2007; Watkins & Pachecho, 2000). The standard mean difference for IB was -1.05. This is considered to be a large effect. The large effects suggest that NCP had an effect on student behavior.

Non-overlapping data points. The percentage of non-overlapping data points for students' AET and IB was 100%. This is considered to be a highly effective intervention (Nye & Turner, 2007). Based on this analysis, NCP had a large effect on both students' inappropriate behaviors and their academic engaged time.

Trend. The students' AET in baseline is relatively stable, but the AET in intervention had a decreasing slope. The students' IB in baseline had a decreasing trend, but the IB in intervention had a slightly increasing trend. These changes in trend suggest that the intervention had a more potent effect at the beginning of the intervention than the end.

Immediacy. During the first day of intervention, students' AET improved 26 percentage points and IB decreased by 32 percentage points, indicating that there was an immediate effect upon implementation.

Summary. The results from Classroom 2 suggest AET immediately improved and became less variable from baseline to intervention. The results also suggest that NCP had a large effect on the level of AET, suggesting that AET improved substantially. However, this improvement may not have been sustained, as the trend began to decrease during intervention.

The results from Classroom 2 suggest NCP had a large effect on the level, variability, and immediacy of IB from baseline to intervention. Together, these results suggest that NCP had a large effect on student behavior, but the effect was more potent at the beginning of intervention than at the end.

Classroom 3

The bottom graph in Figure 1 represents the percentage of intervals that the students in the classroom were academically engaged and the percentage of intervals they were engaged in inappropriate behaviors during baseline and intervention conditions.

Variability. Tables 2 and 3 represent the range differences for the academic engaged time and inappropriate behaviors of Classroom 3. The AET of Classroom 3 became less variable from baseline to intervention. During baseline, the range of AET was 29.4%, whereas during intervention the range was 8.8%, indicating less variability. Inappropriate behaviors (IB) also became less variable from baseline to intervention, shifting from 23.5% difference to 14.8%.

Standard mean difference was used to measure differences in level. Tables 2 and 3 represent the means for the academic engaged time and inappropriate behaviors of Classroom 3. The standard mean difference for AET was 1.63. This is considered to be a large effect (Olive & Franco, 2007; Watkins & Pachecho, 2000). The standard mean difference for IB was -2.36. This is considered to be a large effect. The large effects suggest that NCP had a noticeable effect on student behavior.

Non-overlapping data points. The percentage of non-overlapping data points for both students' AET and IB was 100 percent. This is considered to be a highly effective intervention (Nye & Turner, 2007). Based on this analysis, NCP had a large effect on both students' inappropriate behaviors than their academic engaged time.

Trend. The trend of students' AET in baseline is increasing, while the trend of AET in intervention is level. This suggests that NCP stabilized the students' AET. The students' IB in baseline is decreasing slightly, while the students' IB in intervention is increasing. This suggests that while NCP may have had an effect on the level of IB, the effect was more potent at the beginning of the intervention than the end.

Immediacy. During the first day of intervention, students' AET improved 6 percentage points and IB decreased by 30 percentage points, indicating that there was more of an immediate effect on students' IB.

Summary. The results from Classroom 3 suggest that AET increased and became more predictable (i.e., less variable and stable trend) from baseline to intervention. The results from Classroom 3 also suggest that IB decreased immediately and became less variable from baseline to intervention. The effect for both AET and IB was large, indicating that NCP had a positive impact on student behavior overall.

Table 4

Summary of AET from NCPf Classrooms for All Dependent Measures

Classroom	Standard Mean Difference	Non-overlapping Data Points	Trend	Immediate	Stability
1	0.24	20%	Decrease	Yes	Yes
2	2.30	100%	Decrease	Yes	Yes
3	1.63	100%	Level	No	Yes

Table 5

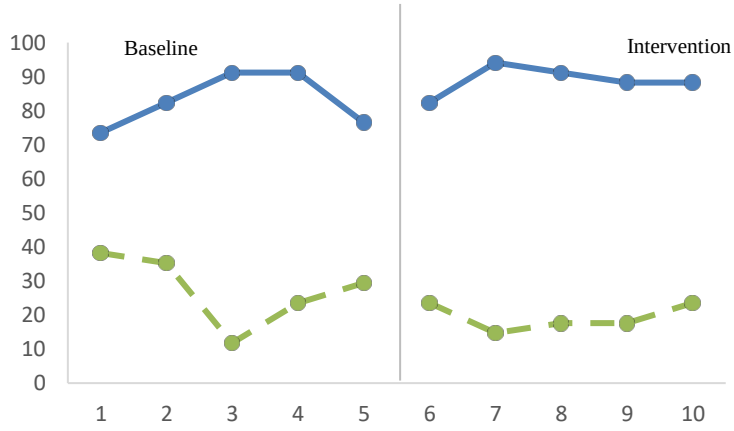
Summary of IB from NCPf Classrooms for All Dependent Measures

Classroom	Standard Mean Difference	Non-overlapping Data Points	Trend	Immediate	Stability
1	-0.52	80%	Level	Yes	No
2	-1.05	100%	Increase	Yes	Yes
3	-2.36	100%	Increase	Yes	Yes

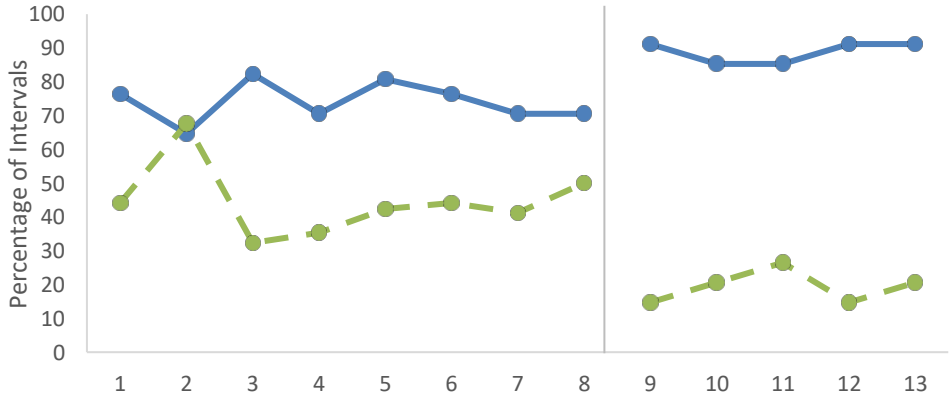
Overall Summary

Tables 4 and 5 depict the summary of data collected from the NCP fixed intervention classrooms. In Classroom 1, a small effect size was established for an increase in AET and a medium effect size was established for IB. In Classrooms 2 and 3, large effects were established for both an increase in AET and decrease in IB. While the NCP fixed intervention may have led to an immediate and stable improvement in student behaviors, the improvement was not shown to improve the trend of the students' behavior.

Classroom 4



Classroom 5



Classroom 6

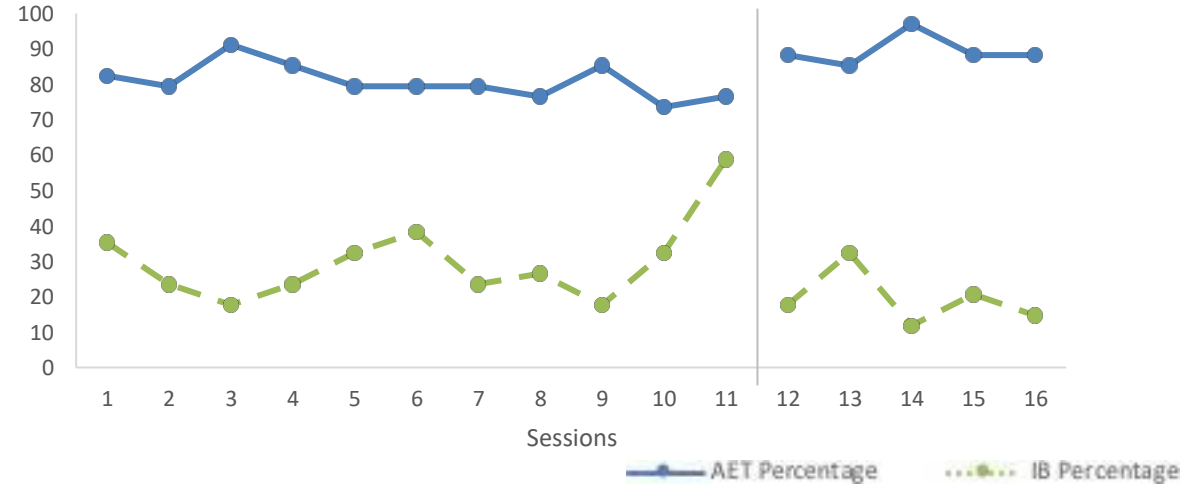


Figure 2. NCPv Classrooms: Academic Engaged Time and Inappropriate Behaviors

Classroom 4

The top graph in Figure 2 represents the percentage of intervals that the students in the classroom were academically engaged and the percentage of intervals they were engaging in inappropriate behaviors during baseline and intervention conditions.

Variability. Tables 2 and 3 represent the range differences for the academic engaged time and inappropriate behaviors of Classroom 4. The AET of Classroom 4 became less variable from baseline to intervention. During baseline, the range of AET was 17.5%, whereas during intervention the range was 11.4%, indicating less variability. Inappropriate behaviors (IB) also became less variable from baseline to intervention, shifting from 26.4% difference to 8.8%. This suggests that the AET and IB of the students increased in stability after implementation of the intervention.

Standard mean difference was used to measure differences in level. Tables 2 and 3 represent the means for the academic engaged time and inappropriate behaviors of Classroom 4. The standard mean difference for AET was 0.72 and for IB was -0.78. This is considered to be a medium effect (Olive & Franco, 2007; Watkins & Pachecho, 2000). The medium effects suggest that NCP had some effect on student behavior.

Non-overlapping data points. The percentage of non-overlapping data points for students' AET was 80 percent. This is considered to be a highly effective intervention. The percentage of non-overlapping data points for students' IB was 100 percent. This is considered a highly effective intervention (Nye & Turner, 2007). Based on this analysis, NCP had a large effect on both students' inappropriate behaviors than their academic engaged time.

Trend. The students' AET in baseline and intervention have similar increasing trends. The students' IB in baseline had a decreasing trend, but had a stable trend in intervention. These trends suggest that NCP did not affect the trend in student behavior.

Immediacy. During the first day of intervention, students' AET improved 6 percentage points and IB decreased by 6 percentage points, indicating that there was a small immediate effect.

Summary. The results from Classroom 4 suggest that upon implementation of NCP, AET increased and became less variable. The results also suggest that IB decreased, became less variable, and increased in stability from baseline to intervention. NCP was classified as highly effective with a medium effect size.

Classroom 5

The middle graph in figure 2 represents the percentage of intervals that the students in the classroom were academically engaged and the percentage of intervals they were engaged in inappropriate behaviors during baseline and intervention conditions.

Variability. Tables 2 and 3 represent the range differences for the academic engaged time and inappropriate behaviors of Classroom 5. The AET of Classroom 5 became less variable from baseline to intervention. During baseline, the range of AET was 17.7%, whereas during intervention the range was 5.9%, indicating less variability. Inappropriate behaviors (IB) became less variable from baseline to intervention, shifting from 35.2% difference to 11.8%. This suggests that NCP led to increased stability in student behaviors.

Standard mean difference was used to measure differences in level. Tables 2 and 3 represent the means for the academic engaged time and inappropriate behaviors of Classroom 5. The standard mean difference for AET was 2.5 and for IB was -2.3. These are considered to be

large effects (Olive & Franco, 2007; Watkins & Pachecho, 2000). The large effects suggest that NCP had an impact on student behavior.

Non-overlapping data points. The percentage of non-overlapping data points for both students' AET and IB was 100 percent. This is considered a highly effective intervention (Nye & Turner, 2007). Based on this analysis, NCP had a large effect on both students' inappropriate behaviors and their academic engaged time.

Trend. The students' AET in baseline was level, while it increased during intervention. This suggests that the intervention was continuing to have an impact on student behavior. The students' IB was decreasing slightly in baseline and increasing slightly in intervention. This suggests that NCP had a longer lasting effect on students' AET than IB.

Immediacy. During the first day of intervention, students' AET improved 20 percentage points and IB decreased by 35 percentage points, indicating that there was a substantial immediate effect.

Summary. The results suggest upon implementation of NCP, both AET and IB became less variable immediately and was classified as a highly effective intervention with a large effect size.

Classroom 6

The bottom graph in figure 2 represents the percentage of intervals that the students in the classroom were academically engaged and the percentage of intervals they were engaged in inappropriate behaviors during baseline and intervention conditions.

Variability. Tables 2 and 3 represent the range differences for the academic engaged time and inappropriate behaviors of Classroom 6. The AET of Classroom 6 became less variable from baseline to intervention. During baseline, the range of AET was 17.7%, whereas during

intervention the range was 8.8%, indicating less variability. Inappropriate behaviors (IB) became less variable from baseline to intervention, shifting from 41.3% difference to 20.6%. This suggests that NCP led to increased stability in student behaviors.

Standard mean difference was used to measure differences in level. Tables 2 and 3 represent the means for the academic engaged time and inappropriate behaviors of Classroom 6. The standard mean difference for AET was 1.74 and for IB was -0.90. These are considered to be large effects (Olive & Franco, 2007; Watkins & Pachecho, 2000). The large effects suggest that NCP had an impact on student behavior.

Non-overlapping data points. The percentage of non-overlapping data points for students' AET and IB was 100% and 80% respectively. This is considered a highly effective intervention (Nye & Turner, 2007). Based on this analysis, NCP had a large effect on both students' inappropriate behaviors and their academic engaged time.

Trend. The students' AET in baseline was decreasing and in intervention was increasing. This suggests that the intervention reversed the downward trend in AET and continued to have a positive impact on student behavior throughout the intervention. The students' IB was increasing in baseline and decreasing in intervention. This suggests that NCP also had a positive impact on student misbehavior throughout the intervention.

Immediacy. During the first day of intervention, students' AET improved 12 percentage points and IB decreased by 41 percentage points, indicating that there was a substantial immediate effect.

Summary. The results of Classroom 6 suggest upon implementation of NCP, both AET and IB became less variable immediately and was classified as a highly effective intervention with a large effect size.

Table 6

Summary of AET Data from NCPv Classrooms for All Dependent Measures

Classroom	Standard Mean Difference	Non-overlapping Data Points	Trend	Immediate	Stability
4	0.72	80%	Increase	Yes	Yes
5	2.50	100%	Increase	Yes	Yes
6	1.74	100%	Increase	Yes	Yes

Table 7

Summary of IB Data from NCPv Classrooms for All Dependent Measures

Classroom	Standard Mean Difference	Non-overlapping Data Points	Trend	Immediate	Stability
4	-0.78	100%	Level	Yes	Yes
5	-2.30	100%	Increase	Yes	Yes
6	-0.90	80%	Decrease	Yes	Yes

Overall Summary

Tables 6 and 7 depict the summary of data collected and visual analysis from the NCP variable intervention classrooms. In all classrooms upon implementation of the intervention, an immediate and stable increase in AET and decrease in IB was established. A medium effect size was established for an increase in AET and decrease in IB in Classroom 4, while large effect sizes were established for the other two classrooms. The trends in student behavior were more promising in the NCP variable intervention, suggesting that the variability of the schedule of praise may have a longer lasting effect on student behavior than a fixed schedule.

High Intensity Behavior

Data on high intensity behaviors (HIB) in the classroom were collected as a secondary method of assessing the impact NCP had on student behavior. High intensity behaviors were defined as any student engaging in behavior that disrupted the learning environment of two or more other students.

Table 8

High Intensity Behavior Averages

Classroom	Baseline	Intervention
1	4.4	5.8
2	6.6	5.0
3	4.1	1.6
4	2.8	1.0
5	5.9	2.6
6	1.9	2.0

Table 8 shows the averages of HIB in baseline and intervention of each classroom. The average of HIB decreased in four of the six classrooms, suggesting that NCP had an effect on HIB in those four classrooms.

Hypothesis Two

It was hypothesized that teacher praise would increase from baseline to intervention and baseline to maintenance. During intervention, the teacher in each classroom was provided an individual rate of praise to provide to their respective classroom based on the average amount of attention (i.e., praise and reprimands) they provided to their classroom during baseline. The MotivAider™ sent a signal on the predetermined schedule as a reminder of this goal. The teachers were also provided written feedback on whether they met their goal at the end of each intervention session.

Table 9

Praise Averages by Classroom

	Baseline	Intervention	Maintenance
1	1.0	5.6	2.0
2	2.0	8.8	1.0
3	0.6	4.2	3.0
4	4.0	8.6	3.0
5	3.3	7.4	2.0
6	1.5	4.6	5.0

Table 9 displays the average rates of praise each teacher provided to their classroom during the baseline, intervention, and maintenance phases.

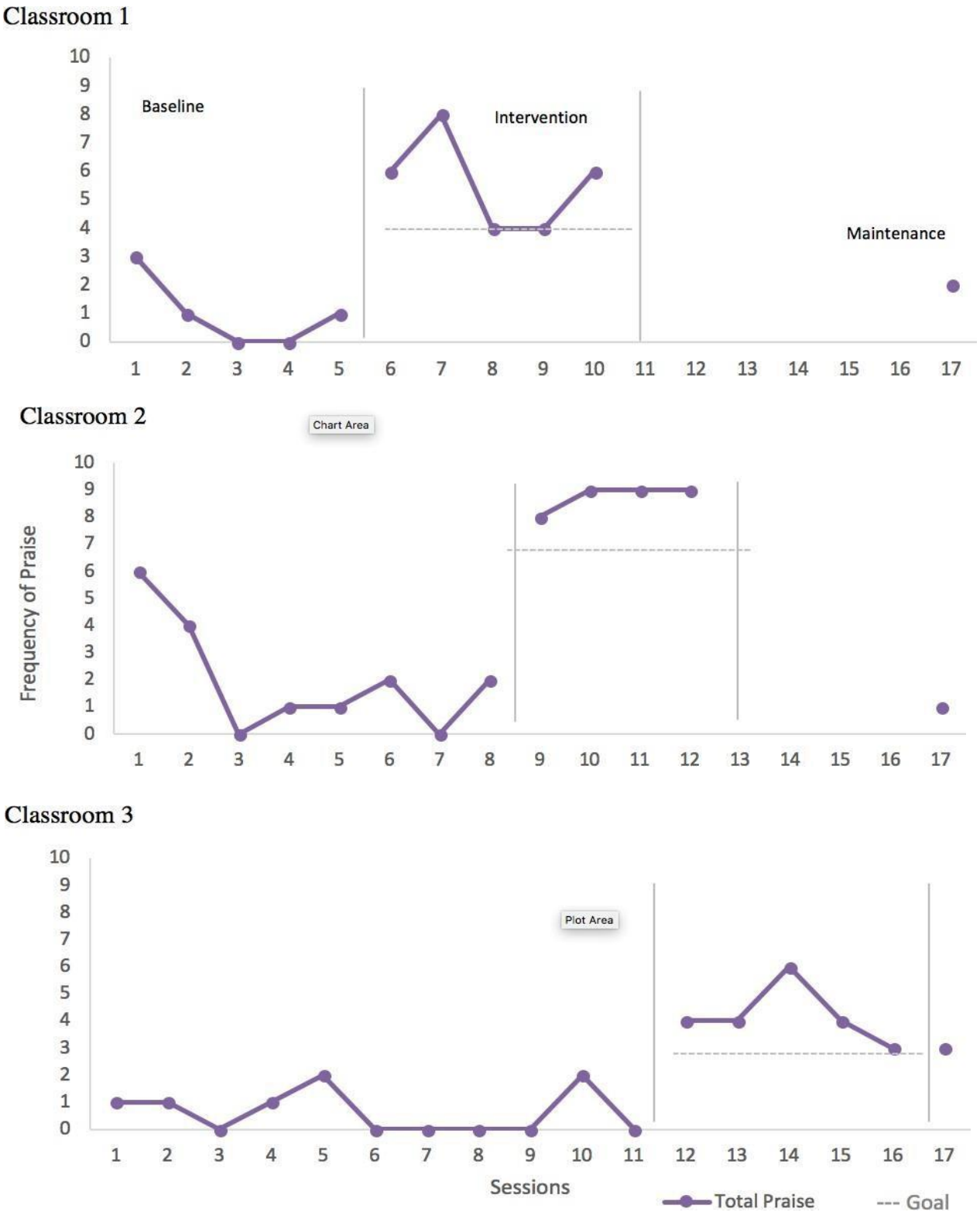


Figure 3: Levels of Praise in NCP Fixed (NCPf) Classrooms

Classroom 1

The top graph in figure 3 represents the frequency of praise that the teacher in Classroom 1 delivered to three or more students during the twenty-minute observation period in baseline, intervention, and maintenance conditions.

Variability. The variability from baseline to intervention was similar, with baseline praise ranging from 0 to 3 and intervention praise ranging from 4 to 8. This suggests that the NCPf intervention did not lead to increased stability in frequency of praise provided to students.

Standard mean difference was used to measure differences in level. The standard mean difference for praise from baseline to intervention was 3.76, which is considered to be a large effect size (Olive & Franco, 2007; Watkins & Pachecho, 2000). The large effect suggests that the NCPf intervention increased teacher praise.

Non-overlapping data points. The percentage of non-overlapping data points for teacher praise was 100 percent. This is considered a highly effective intervention (Nye & Turner, 2007). Based on this analysis, the NCPf intervention had a large effect on increasing teacher praise.

Trend. The trend line of teacher praise was decreasing in baseline and intervention, suggesting the effect the NCPf intervention had on teacher praise may have been more potent at the beginning of the intervention than the end.

Immediacy. During the first day of intervention, the teacher praised her class five more times than the last day of baseline, suggesting that the effect of the NCPf intervention was immediate.

Maintenance. According to Table 9, the teacher praise average decreased from baseline to maintenance by one praise. This suggests that the increase in teacher praise during intervention was not maintained when the intervention was no longer in place.

Summary. The results of Classroom 1 suggest upon implementation of the NCPf intervention, teacher praise increased from baseline to intervention and from baseline to maintenance.

Classroom 2

The middle graph in figure 3 represents the frequency of praise that the teacher in Classroom 2 delivered to three or more students during the twenty-minute observation period in baseline, intervention, and maintenance conditions.

Variability. The variability from baseline to intervention decreased, with baseline praise ranging from 0 to 6 and intervention praise ranging from 8 to 9. This suggests that the NCPf intervention led to increased stability in the frequency of praise provided to the classroom.

Standard mean difference was used to measure differences in level. The standard mean difference for praise from baseline to intervention was 3.26, which is considered to be a large effect size (Olive & Franco, 2007; Watkins & Pachecho, 2000). The large effect suggests that the NCPf intervention lead to an increase in class-wide teacher praise.

Non-overlapping data points. The percentage of non-overlapping data points for teacher praise was 100 percent. This is considered a highly effective intervention (Nye & Turner, 2007). Based on this analysis, the NCPf intervention had a large effect on increasing teacher praise.

Trend. The trend line of teacher praise was decreasing in baseline, while the trend line of teacher praise was slightly increasing in intervention. This suggests that NCPf may have reversed the decreasing trend of teacher praise for the duration of the intervention.

Immediacy. During the first day of intervention, the teacher praised her class six more times than the last day of baseline, suggesting that the effect of the NCPf intervention was immediate.

Maintenance. According to Table 9, the teacher praise average decreased from baseline to maintenance by one praise. This suggests that the NCPf intervention was not sustained over time.

Summary. The results of Classroom 2 suggest upon implementation of NCPf, teacher praise increased from baseline to intervention, but not from baseline to maintenance.

Classroom 3

The bottom graph in figure 3 represents the frequency of praise that the teacher in Classroom 3 delivered to three or more students during the twenty-minute observation period in baseline, intervention, and maintenance conditions.

Variability. The variability from baseline to intervention increased, with baseline praise ranging from 0 to 2 and intervention praise ranging from 3 to 6. This suggests that the NCPf intervention did not stabilize the frequency of praise delivered to the classroom.

Standard mean difference was used to measure differences in level. The standard mean difference for praise from baseline to intervention was 4.40, which is considered to be a large effect size (Olive & Franco, 2007; Watkins & Pachecho, 2000). The large effect suggests that the NCPf intervention lead to an increase in class-wide teacher praise.

Non-overlapping data points. The percentage of non-overlapping data points for teacher praise was 100 percent. This is considered a highly effective intervention (Nye & Turner, 2007). Based on this analysis, NCPf had a large effect on increasing teacher praise.

Trend. The trend line of teacher praise was increasing in baseline, while the trend line of teacher praise was decreasing in intervention. This suggests that NCPf had a more potent effect at the beginning of intervention than the end.

Immediacy. During the first day of intervention, the teacher praised her class four more times than the last day of baseline, suggesting that the effect of NCPf was immediate.

Maintenance. According to Table 9, the teacher praise average increased from baseline to maintenance by 2.4 instances of praise. This suggests that the NCPf intervention was sustained over time.

Summary. The results of Classroom 3 suggest upon implementation of NCPf, teacher praise increased from baseline to intervention and baseline to maintenance.

Overall Summary

In two of the three NCPf classrooms, the effects of NCPf were maintained at least three weeks following the conclusion of the intervention. In all NCPf classrooms, praise increased from baseline to intervention.

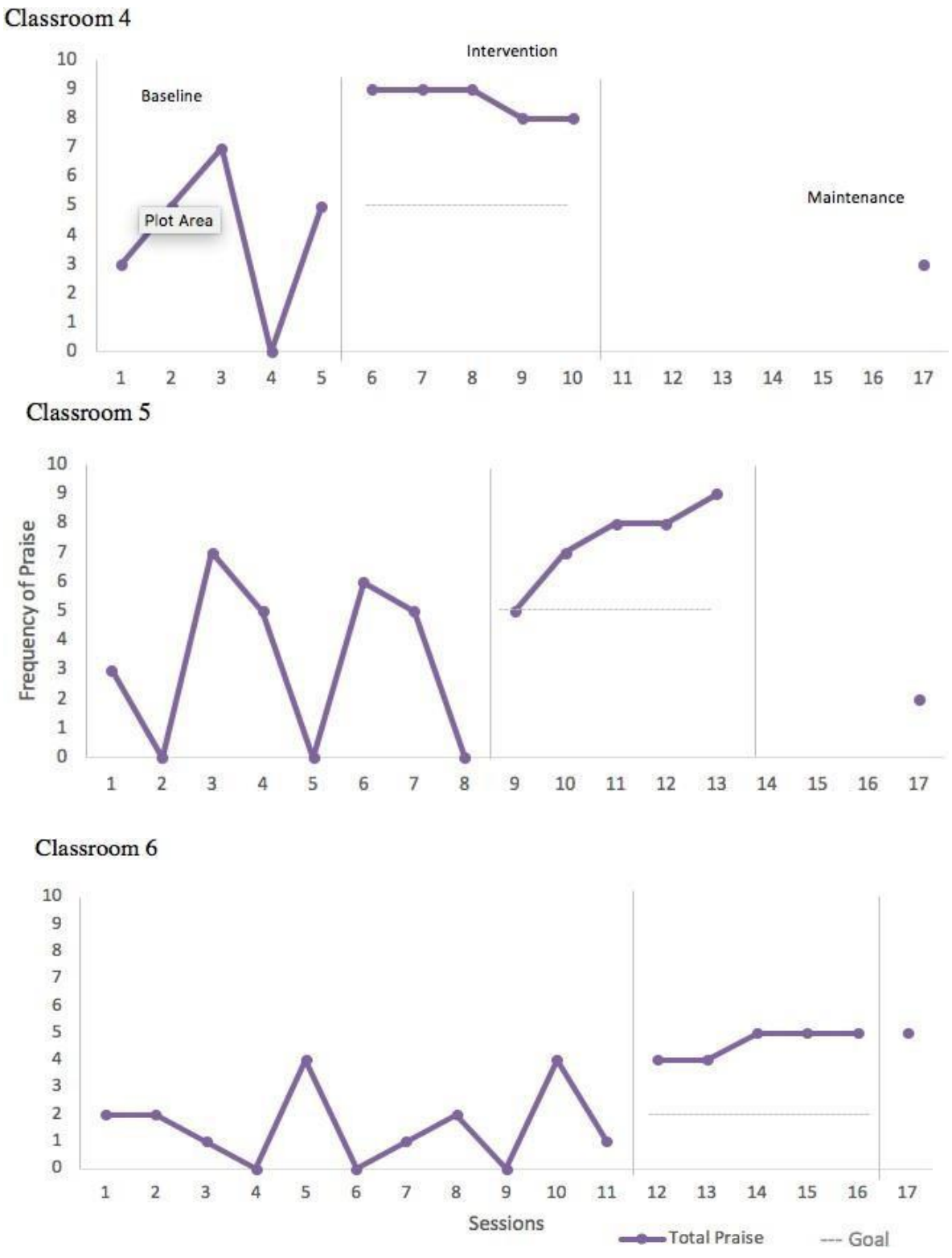


Figure 4: Levels of Praise in NCP Variable (NCPv) Classrooms

Classroom 4

The top graph in figure 4 represents the frequency of praise that the teacher in Classroom 4 delivered to three or more students during the twenty-minute observation period in baseline, intervention, and maintenance conditions.

Variability. The variability from baseline to intervention decreased, with baseline praise ranging from 0 to 7 and intervention praise ranging from 8 to 9. This suggests that the NCPv intervention led to increased stability in the frequency of praise provided to the classroom.

Standard mean difference was used to measure differences in level. The standard mean difference for praise from baseline to intervention was 1.74, which is considered to be a large effect size (Olive & Franco, 2007; Watkins & Pachecho, 2000). The large effect suggests that the NCPv intervention lead to an increase in class-wide teacher praise.

Non-overlapping data points. The percentage of non-overlapping data points for teacher praise was 100 percent. This is considered a highly effective intervention (Nye & Turner, 2007). Based on this analysis, NCPv had a large effect on increasing teacher praise.

Trend. The trend line of teacher praise was decreasing in baseline and intervention. This suggests the NCPv intervention did not have an effect in reversing the naturally occurring decreasing trend of praise.

Immediacy. During the first day of intervention, the teacher praised her class four more times than the last day of baseline, suggesting that the effect of NCPv was immediate.

Maintenance. According to Table 9, the teacher praise average decreased from baseline to maintenance by one praise. This suggests that the NCPv intervention was not sustained over time.

Summary. The results of Classroom 4 suggest upon implementation of NCPv, teacher praise increased from baseline to intervention, but not from baseline to maintenance.

Classroom 5

The middle graph in figure 4 represents the frequency of praise that the teacher in Classroom 5 delivered to three or more students during the twenty-minute observation period in baseline, intervention, and maintenance conditions.

Variability. The variability from baseline to intervention decreased, with baseline praise ranging from 0 to 7 and intervention praise ranging from 5 to 9. This suggests the NCPv intervention led to increased stability in the frequency of praise provided to the classroom.

Standard mean difference was used to measure differences in level. The standard mean difference for praise from baseline to intervention was 1.42, which is considered to be a large effect size (Olive & Franco, 2007; Watkins & Pachecho, 2000). The large effect suggests the NCPv intervention lead to an increase in class-wide teacher praise.

Non-overlapping data points. The percentage of non-overlapping data points for teacher praise was 100 percent. This is considered a highly effective intervention (Nye & Turner, 2007). Based on this analysis, NCPv had a large effect on increasing teacher praise.

Trend. The trend line of teacher praise was decreasing in baseline, while the trend line of teacher praise was increasing in intervention. This suggests that NCPv may have reversed the decreasing trend of teacher praise for the duration of the intervention.

Immediacy. During the first day of intervention, the teacher praised her class five more times than the last day of baseline, suggesting the effect of the NCPv intervention was immediate.

Maintenance. According to Table 9, the teacher praise average decrease from baseline to maintenance by 1.3 instances of praise. This suggests that the NCPv intervention was not sustained over time.

Summary. The results of Classroom 5 suggest upon implementation of NCPv, teacher praise increased from baseline to intervention, but not from baseline to maintenance.

Classroom 6

The bottom graph in figure 4 represents the frequency of praise that the teacher in Classroom 6 delivered to three or more students during the twenty-minute observation period in baseline, intervention, and maintenance conditions.

Variability. The variability from baseline to intervention decreased, with baseline praise ranging from 0 to 4 and intervention praise ranging from 4 to 5. This suggests the NCPv intervention led to increased stability in the frequency of praise provided to the classroom.

Standard mean difference was used to measure differences in level. The standard mean difference for praise from baseline to intervention was 2.12, which is considered to be a large effect size (Olive & Franco, 2007; Watkins & Pachecho, 2000). The large effect suggests the NCPv intervention led to an increase in class-wide teacher praise.

Non-overlapping data points. The percentage of non-overlapping data points for teacher praise was 100 percent. This is considered a highly effective intervention (Nye & Turner, 2007). Based on this analysis, NCPv had a large effect on increasing teacher praise.

Trend. The trend line of teacher praise was increasing in both baseline and intervention phases. This suggests the NCPv intervention did not have an effect on the trend of praise.

Immediacy. During the first day of intervention, the teacher praised her class three more times than the last day of baseline, suggesting that the effect of the NCPv intervention was immediate.

Maintenance. According to Table 9, the teacher praise average decrease from baseline to maintenance by 3.5 instances of praise. This suggests that the NCPv intervention was not sustained over time.

Summary. The results of Classroom 6 suggest upon implementation of NCPv, teacher praise increased from baseline to intervention, and from baseline to maintenance.

Overall Summary

In one of the three NCPv classrooms, the effects of NCPv were maintained at least three weeks following the conclusion of the intervention. In all NCPv classrooms, praise increased from baseline to intervention.

Hypothesis Three

It was hypothesized that NCP would be highly acceptable (above a three on the IRP-15) to the teacher as a class-wide behavior management technique (Austin & Soeda, 2008). Overall, teachers responded favorably to most items on the IRP-15, see table 10 for average scores by teacher and overall.

Table 10

IRP-15 Survey Scores

NCPf Classroom	Score	NCPv Classroom	Score
Teacher 1	3.87	Teacher 4	5.47
Teacher 2	4.53	Teacher 5	4.73
Teacher 3	4.80	Teacher 6	5.00
NCPf Mean	4.40	NCPv Mean	5.07
Total Mean 4.73			

Specifically, the mean teacher rating for acceptability was 4.73 (*SD* = 0.53), with a mean of 4.40 (*SD* = 0.48) for the NCPf intervention and a mean of 5.07 (*SD* = 0.37) for the NCPv intervention. The results suggest while both interventions were acceptable to the teachers, the NCPv intervention was slightly more acceptable.

Hypothesis Four

It was hypothesized that the teachers' perceptions of the quality of the teacher-student relationship would increase following the NCP intervention. The means and standard deviations from the STRS-SF are reported in Table 11.

Table 11

STRS-SF Means and Standard Deviations

		Pre	Post
CLOSENESS	Total	33.00 *(1.55)*	32.50 *(2.88)*
	NCPf	33.33 *(1.15)*	32.33 *(3.79)*
	NCPv	32.67 *(2.08)*	32.67 *(2.52)*
CONFLICT	Total	24.00 *(5.66)*	23.50 *(5.54)*
	NCPf	25.33 *(8.39)*	26.33 *(6.03)*
	NCPv	22.67 *(2.08)*	20.67 *(4.04)*

The mean teacher rating for closeness (see Table 11) was 33.00 (*SD* = 1.55) before intervention and 32.50 (*SD* = 2.88) after intervention (*d* = 0.22). The mean teacher rating for closeness for the NCP fixed intervention was 33.33 (*SD* = 1.15) before intervention and 32.33 (*SD* = 3.79) after intervention. The mean teacher rating for closeness for the NCP variable intervention was 32.67 (*SD* = 2.08) before intervention and 32.67 (*SD* = 2.52) after intervention. These results suggest that teachers' overall perceptions of closeness to their students did not change upon implementation of the intervention.

The mean teacher rating for conflict was 24.00 (*SD* = 5.66) before intervention and 23.50 (*SD* = 5.54) after intervention (*d* = 0.09). The mean teacher rating for conflict for the NCP fixed

intervention was 25.33 (*SD* = 8.39) before intervention and 26.33 (*SD* = 6.03) after intervention. Teachers in the NCP variable intervention rated conflict as 22.67 (*SD* = 2.08) before intervention and 20.67 (*SD* = 4.04) after intervention.

Table 12

STRS-SF Scores by Teacher

	Closeness		Conflict	
Teacher	Pre	Post	Pre	Post
1	32	28	21	27
2	34	34	20	20
3	34	35	35	32
4	32	30	25	25
5	31	33	21	17
6	35	35	22	20

Individual STRS-SF scores by teacher are reported in Table 12. Due to the small number of participants, strong conclusions cannot be made. However, these results suggest that teachers' perceptions of conflict with their students were not impacted by the implementation of the intervention.

Hypothesis Five

It was hypothesized the teachers' ratings of their job satisfaction would increase and stress would decrease following the NCP intervention. Means and standard deviations from the job satisfaction survey are reported in Table 13. Individual teacher scores are reported in Table 14.

Table 13

JSS Means and Standard Deviations

	Pre		Post	
	M	*SD*	*M*	*SD*
Total	114.00	17.45	121.33	18.01
NCPf	121.00	11.53	130.00	14.11
NCPv	107.00	21.93	112.67	19.66

With regard to job satisfaction (Table 12), the mean teacher rating was 114.00 (*SD* =17.45) before intervention and 121.33 (*SD* =18.01) after intervention (*d* = 0.41). The mean teacher rating in the NCP fixed intervention was 121.00 (*SD* =11.53) before intervention and 130.00 (*SD* = 14.11) after intervention. The mean teacher rating in the NCP variable intervention was 107.00 (*SD* = 21.93) before intervention and 112.67 (*SD* = 19.66) after intervention.

Table 14

JSS Scores by Teacher

	Pre	Post
Teacher 1	134	143
Teacher 2	117	115
Teacher 3	112	132
Teacher 4	116	123
Teacher 5	82	90
Teacher 6	123	125

Individual teacher scores are reported in Table 14 above. Due to the small number of participants, strong conclusions cannot be made. However, the results suggest job satisfaction slightly increased following the intervention.

Table 15

TSI Means and Standard Deviations

		Pre		Post	
		M	*SD*	*M*	*SD*
Work-Related Stressors	Total	3.36	0.71	3.64	0.82
	NCPf	3.44	0.25	3.89	0.19
	NCPv	3.28	1.08	3.39	1.21
Discipline and Motivation	Total	3.22	0.76	3.06	0.86
	NCPf	3.33	0.17	3.06	1.06
	NCPv	3.11	1.17	3.06	0.86

Table 15 displays the means and standard deviations from the Teacher Stress Inventory (TSI). The total mean teacher rating of work-related stressors was 3.36 (*SD* = 0.71) before intervention and 3.64 (*SD* = 0.82) after intervention (*d* = 0.37). Specifically, teachers in the NCP fixed intervention rated work-related stressors as 3.44 (*SD* = 0.25) before intervention and 3.89 (*SD* = 0.19) following intervention. Teachers in the NCP variable intervention rated work-related stressors as 3.28 (*SD* = 1.08) before intervention and 3.39 (*SD* =1.21) following intervention.

The total mean teacher rating of discipline and motivation stressors was 3.22 (*SD* = 0.76) before intervention and 3.06 (*SD* = 0.86) after intervention (*d* = 0.20). Specifically, teachers in the NCP fixed intervention rated discipline and motivation stressors as 3.33 (*SD* = 0.17) before intervention and 3.06 (*SD* = 1.06) after intervention. Teachers in the NCP variable intervention rated discipline and motivation stressors as 3.11 (*SD* = 1.17) before the intervention and 3.06 (*SD* = 0.86) after intervention. These scores are reported in Table 15.

Table 16

TSI Scores by Teacher

Teacher	Work-Related Stressors		Discipline and Motivation	
	Pre	Post	Pre	Post
1	3.17	4.00	3.33	3.67
2	3.50	3.67	3.50	3.67
3	3.67	4.00	3.17	1.83
4	4.30	4.12	4.30	4.00
5	2.17	2.00	2.00	2.33
6	3.33	4.00	3.00	2.83

Individual teacher scores are reported in Table 16 above. Due to the small number of participants, strong conclusions cannot be made. These results suggest following the NCP intervention, teachers' perceptions of their work-related stressors increased slightly, while their perceptions of discipline and motivation stressors decreased slightly.

CHAPTER V: DISCUSSION

This study sought to investigate the effectiveness of noncontingent praise (NCP) as a data-based intervention with six elementary teachers and their classrooms. The intervention consisted of teachers providing praise to their students at the teachers' free operant level of attention directed towards the classroom. Two types of schedules were used to prompt the teacher to provide praise: fixed and variable. This study assessed the effects of the two types of NCP schedules on the students' academic engaged time and inappropriate behaviors. It also assessed the effects of the two types of NCP schedules on attention provided by the teacher to the classroom and the teachers' stress levels, relationships with the classroom, and job satisfaction.

The results of the current study suggest that NCP has promise as a class-wide intervention by increasing AET and decreasing IB. With regard to student behavior, NCPv led to a larger increase in AET and decrease in IB than NCPf. Variable schedules of reinforcement are more difficult to use in practice, but they are the best approach for sustained behavior change (Cooper, Heron, & Heward, 2007; Miltenberger, 2011). NCP had a larger impact on some classrooms than others; specifically, Classroom 1 demonstrated a smaller effect size than the other classrooms. This could potentially be due to activities in which Classroom 1 engaged. Classroom 1 was observed during reading, which was sometimes independent reading and other times working on a reading project on their computers. It was difficult for the observers to accurately code the behaviors of the students while they were on their computers.

With regard to teacher praise, all classrooms experienced an increase in teacher praise from baseline to intervention. This suggests that the MotivAider™ was a successful method of prompting the teacher to provide praise on a schedule. In fact, the training and use of the

MotivAider™ assisted teachers with completing the treatment with 100% integrity. The intervention was successful in helping half of the teachers maintain the levels of praise after intervention. Two-thirds of the teachers that maintained their levels of praise were in the NCP fixed condition. This suggests that while NCPv may lead to better student outcomes, NCPf may have better outcomes for teacher praise because it becomes more of a routine for the teacher. The variable schedule is less predictable and therefore less able to be maintained. It may be beneficial for future research to identify ways to maintain the increase in praise after intervention.

The results from the pre- and post-intervention surveys were inconclusive. There are several reasons why this may be. First, the intervention may have needed to be in place longer to see differences in job satisfaction, teacher stress, or student-teacher relationships. In addition, the timing of the surveys may not have been the best to accurately reflect any changes that occurred through the intervention. The pre-intervention surveys were administered to the teachers at the beginning of a new semester, while the post-intervention surveys were administered to the teachers mid-semester as Partnership for Assessment of Readiness for College and Careers (PARCC), mandatory state-wide testing, was beginning. Teachers may likely feel differently about their stress levels, job satisfaction, and relationships with their students at the beginning of a semester versus in the middle of the semester, with or without an intervention in place.

Limitations

There were shortcomings in the current study that should be addressed. The classroom schedule was unpredictable and the set up of each classroom changed at least once during data collection, which could impact the reliability of the data. Several times, the observers would code behaviors at the same time of the day but during a different activity or during a transition to the same activity. Because data were collected in a naturalistic environment, these disruptions

were expected and the observers generally continued to code behaviors that day and documented these disruptions. Classroom 2 was an exception, as five intervention data points could not be collected due to a week and a half of teacher absences following four days of intervention data collection. Because the four intervention data points were consistent, it was decided that a fifth intervention data point was not necessary to analyze the data.

Another potential limitation is teacher buy-in, or teacher's perceptions, beliefs, and values (Lee & Min, 2017), towards the NCP intervention before it began. Teacher buy-in is important for an intervention because with buy-in, teachers are more likely to participate in the intervention with fidelity thus having greater impact on student behavior (James & Sewell, 2015; Lee & Min, 2017; Turnbull, 2002). Data were not collected on teacher-buy in before the start of intervention; however, acceptability data on the intervention as collected after the intervention. All teachers participated in the intervention with 100% treatment integrity, suggesting that all teachers had bought in to the intervention. Anecdotally, researchers noted that some teachers appeared more motivated to provide genuine class-wide praise than others. This could impact the results of the intervention.

This study utilized 30-second partial interval recording to measure student academic engaged time and inappropriate behaviors. Several times, researchers observed that students might display inappropriate behaviors for several seconds, quickly switch to being engaged in the lesson for a short time, and then display inappropriate behaviors again. Because researchers could only mark AET or IB once during a 30-second interval, this may not have provided accurate information about the students behaviors during the entire 30-second interval. For future studies, it may be a more appropriate measure of AET and IB to utilize 10-second whole or

partial interval recording. Both of these types of recording would provide more data in the same amount of time and could provide more precise information about student behaviors.

Three of the six classrooms utilized an NCP variable schedule with the MotivAider™. The variable function on the MotivAider™ made it impossible to know how many times it provided a prompt during the twenty minute observation period. Teachers in all classrooms were instructed on their goal for the session, and if the MotivAider™ prompted the teacher after the goal was met, the teacher was instructed to ignore the prompt. Because of this, the teachers in the NCPv condition may have received more prompts than their goal. This may have inflated the teachers' rates of praise in the intervention phases of the NCPv conditions, so the results should be interpreted with caution.

Lastly, researchers failed to consider the impact that technology would have on the collection of data in the classroom. Sometimes, the classroom activities required the use of individual laptops for each student. While a student was working on a laptop, it was difficult to determine whether the student was on-task. For example, the student may have been observed typing and staring intently at their computer screen, but unless the observer could see the student's screen, the observer did not know whether the student was working on an assignment or playing a game. As such, students were assumed to be academically engaged when computer screens could not be observed and the student was actively looking at the screen and/or typing. The observers may have marked AET when in fact, a student was playing a game on their computer. This may have resulted in higher percentage of AET intervals than in actuality.

Future Directions

Future research should continue to investigate the effects of NCP as a class-wide intervention. The NCP intervention is easy to implement, acceptable to teachers, and does not

require a change to the classroom schedule. The results from this study suggest the NCP intervention, whether fixed or variable, also positively impacts teacher and student behavior. Future research should investigate the effects of NCP with classrooms of different grade levels and settings to better understand the generalizability of NCP. It would also be beneficial to investigate the potential effects NCP has on teacher job satisfaction, stress levels, and relationships with their classroom. Additionally, it would be beneficial to better understand the effects that teacher buy-in and quality of praise have on student behavior. In conclusion, as research on NCP is further investigated, the outcome will be a better understanding of NCP to allow teachers to positively impact their students' behaviors.

REFERENCES

Alberto, P. A., & Troutman, A. C. (2013). *Applied behavior analysis for teachers.* Upper Saddle River, NJ: Pearson Education, Inc.

Ardoin, S. P., & Daly, E. J. (2007). Introduction to the special series: Close encounters of the instructional kind-how the instructional hierarchy is shaping instructional research 30 years later. *Journal of Behavior Education, 16*, 1-6.

Austin, J. L., & Soeda, J. M. (2008). Fixed-time teacher attention to decrease off-task behaviors of typically developing third graders. *Journal of Applied Behavior Analysis, 41*(2), 279-283.

Banda, D. R. & Sokolosky, S. (2012). Effectiveness of noncontingent attention to decrease attention-maintained disruptive behaviors in the general education classroom. *Child & Family Behavior Therapy*, *34*(2), 130-140.

Barker, G. P., & Graham, S. (1997). Developmental study of praise and blame as attributional cues. *Journal of Educational Psychology, 79*(1), 62-66. http://dx.doi.org/10.1037/0022-0663.79.1.62

Beaman, R., & Wheadall, K. (2010). Teachers' use of approval and disapproval in the classroom. *Educational Psychology*, *20*(4), 431-446. http://dx.doi.org/10.1080/713663753

Betoret, F. D. (2006). Stressors, self-efficacy, coping resources, and burnout among secondary school teachers in spain. *Educational Psychology*, *26*(4), 519-539.

Black, S. (2002). Time for learning. *American School Board Journal, 189*, 58–62.

Blaze, J. T., Olmi, D. J., Mercer, S. H., Dufrene, B. A., & Tingstom, D. H. (2014). Loud versus quiet praise: A direct behavioral comparison in secondary classrooms. *Journal of School Psychology, 52,* 349-360.

Briesch, A. M., Hemphill, E. M., Volpe, R. J., & Daniels, B. (2014). An evaluation of observational methods for measuring response to classroom intervention. *School Psychology Quarterly, 30,* 37-49.

Brophy, J. (1981). Teacher praise: A functional analysis. *Review of Educational Research, 51*(1), 5-32.

Burnett, P. C. (2001). Elementary students' preferences for teacher praise. *Journal of Classroom Interaction, 36*(1), 16-23.

Burnett, P. C. (2002). Teacher praise and feedback and students' perceptions of the classroom environment. *Educational Psychology*, *22*(1), 1-16.

Burnett, P., & Mandel, V. (2010). Praise and feedback in the primary classroom: Teachers' and students' perspectives. *Australian Journal of Educational and Developmental Psychology, 10,* 145-154.

Carr, J. E., Coriarty, S., Wilder, D. A., Gaunt, B. T., Dozier, C. L., Britton, L. N., Avina, C., & Reed, C. L. (2000). A review of "noncontingent" reinforcement as treatment for the aberrant behavior of individuals with developmental disabilities. *Research in Developmental Disabilities, 21*(5), 377-391.

Cates, G. L. (2011). *Behavioral Observation Form - Classroom* [Measurement instrument]. Retrieved from: http://garycates.net/6.html

Cavanaugh, B. (2013). Performance feedback and teachers' use of praise and opportunities to respond: A review of the literature. *Education and Treatment of Children, 36*(1), 111-137.

Chang, M. (2009). An appraisal perspective of teacher burnout: Examining the emotional work of teachers. *Educational Psychology Review, 21*(3), 193-218.

Cihak, D., Alberto, P. A., & Frederick, L. D. 2007. Use of brief functional analysis and intervention evaluation in public settings. *Journal of Positive Behavior Interventions, 9*(2), 80-93.

Cohn, A. M. (2001). *Positive behavioral support: Information for educators.* Retrieved from: http://www.nasponline.org/resources/factsheets/pbs_fs.aspx

Confait, S. (2015). Beginning teachers' challenges in their pursuit of effective teaching practices. *Cogent Education, 2*(1).

Connell, J. P., & Klem, A. M. (2006). First things first: What it takes to make a difference. In R. W. Smith (Ed.), Time for change: New visions for high school (pp. 15–40). Cresskill, NJ: Hampton Press.

Conroy, M., Sutherland, K., Snyder, A. L., & Marsh, S. (2008). Class-wide interventions: Effective instruction makes a difference. *TEACHING Exceptional Children, 40*(6), 24-30.

Conroy, M. A., Sutherland K. S., Vo, A. K., Carr S., & Ogston, P. L. (2014). Early childhood teachers' use of effective instructional practices and the collateral effects on young children's behavior. *Journal of Positive Behavior Interventions, 16*(2), 81-92. doi:10.1177/109830071347866

Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). *Applied behavior analysis*. Upper Saddle River, NJ: Pearson Education, Inc.

Corpus, J. H., & Lepper, M. R. (2007). The effects of person versus performance praise on children's motivation: Gender and age as moderating factors. *Educational Psychology, 27*(4), 487-508.

Daly III, E. J., Lentz Jr, F. E., & Boyer, J. (1996). The instructional hierarchy: A conceptual model for understanding the effective components of reading interventions. School Psychology Quarterly, 11, 369-398.

Dart, E. H., Radley, K. C., Briesch, A. M., Furlow, C. M., & Cavell, H. J. (2016). Assessing the accuracy of classwide direct observation methods: Two analyses using simulated and naturalistic data. *Behavioral Disorders, 41*(3), 148-160.

Derevensky, J. L. & Leckerman, R. (1997). Teachers' differential use of praise and reinforcement practices. *Canadian Journal of School Psychology, 13*(1), 15-27.

Diperna, C., Lei, P., Bellinger, J., & Cheng, W. (2015). Effects of a universal positive classroom behavior program on student learning. *Psychology in the Schools, 53*(2), 189-203.

Duchaine, E. L., Jolivette, K., Fredrick, L. D. (2011). The effect of teacher coaching with performance feedback on behavior-specific praise in inclusion classrooms. *Education and Treatment of Children, 34*, 209–227.

Dufrene, B. A., Lestremau, L., & Zoder-Martell, K. (2014). Direct behavioral consultation: Effects on teachers' praise and student disruptive behavior. *Psychology in the Schools, 51*(6), 567-580. http://dx.doi.org/10.1002/pits.21768

Dufrene, B. A., Parker, K., Menousek, K., Zhou, Q., Harpole, L. L., & Olmi, D. J. (2012). Direct behavioral consultation in head start to increase teacher use of praise and effective instruction delivery. *Journal of Educational and Psychological Consultation, 22*(3), 159-186.

Elledge, L., Elledge, A., Newgent, R., & Cavell, T. (2016). Social risk and peer victimization in elementary school children: The protective role of teacher -student relationships. *Journal of Abnormal Child Psychology, 44*(4), 691-703.

Elwell, W. C. & Tiberio, J. (1994). Teacher praise: What students want. *Journal of Instructional Psychology, 21*(4), 322-328.

Fallon, L. M., Collier-Meek, M. A., Maggin, D. M., Sanetti, L. M. H., & Johnson, A. H. (2015). Is performance feedback an evidence-based intervention? A systematic review and evaluation of single-case research. *Exceptional Children, 8*, 227–246. doi:10.1177/0014402914551738

Fan, F. A. (2012). Teacher: Students' interpersonal relationships and students' academic achievements in social studies. *Teachers and Teaching: Theory and Practice, 18*(4), 483-490.

Farmer, T W. Goforth, J., Hives. J., Aaron, A., Hunter, R. & Sgmatto. A. (2006). Competence enhancement behavior management. *Preventing School Failure, 50,* 39-44.

Feistritzer, C. E. (2011). Profile of teachers in the U.S. 2011. *National Center for Education Information.* Washington, D. C.: Library of Congress. Retrieved from: https://www.edweek.org/media/pot2011final-blog.pdf

Feldman, S. (2003). The place for praise. *Teaching PreK-8, 5*(6).

Fimian, M. J. (1987). Teacher stress: An expert appraisal. *Psychology in the Schools, 24*, 5-14.

Fimian, M. J., & Fastenau, P. S. (1990). The factorial validity, content validity, and alpha reliability of the Teacher Stress Inventory: A re-analysis of aggregate data. *Journal of Organizational Behavior, 11*(2), 151-157.

Finn, J. D., & Zimmer, K. (2012). Student engagement: What is it? Why does it matter? In Christenson, S. L., Reschley, A. L., & Wylie, C. (Eds.), *Handbook of research on student engagement (pp. 653–680).* New York, NY: Springer-Verlag.

Fisher, D. (2009). The use of instructional time in the typical high school classroom. *The Educational Forum, 73*, 168–173.

Freudenberger, H. J. (1974). Staff burn-out. *Journal of Social Issues, 30*(1), 159-165.

Friedman, I. A. (2006). Classroom management and teacher stress and burnout. In C. M. Evertson, & C. S. Weinstein (Eds.). *Handbook of classroom management; Research, practice, and contemporary issues, (pp. 925-944*). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Gettinger, M., & Walter, M. J. (2012). Classroom strategies to enhance academic engaged time. In Christenson, S. L., Reschley, A. L., & Wylie, C. (Eds.), *Handbook of research on student engagement (pp. 653–680).* New York, NY: Springer-Verlag.

Greenberg, J., Putman, H., & Walsh, K. 2014. *Training our future teachers: Classroom management*. Retrieved from: http://www.nctq.org/dmsView/Future_Teachers_Classroom_Management_NCTQ_Report

Hagenauer, G., Hascher, T., & Volet, S. E. (2015). Teacher emotions in the classroom: Associations with students' engagement, classroom discipline and the interpersonal teacher-student relationship. *European Journal of Psychology of Education*, *30*(4) 385-403.

Haimovitz, K., & Corpus, J. H. (2011). Effects of person versus process praise on student motivation: stability and change in emerging adulthood. *Educational Psychology*, 1-15. DOI: 10.1080/01443410.2011.585950

Hamre, B. K. and Pianta, R. C. 2001. Early teacher-child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development*, 72: 625 –638.

Haring, N. G. & Eaton (1978). Systematic instructional procedures: An instructional hierarchy. In Haring, N. G., Lovitt, T. C., Eaton, M. D., & Hansen, C. L. (Eds.), *The fourth R: Research in the classroom (pp. 23-40).* Columbus, OH: Charles E. Merrill.

Hawkins, J. D., Guo, J., Hill, K. G., Battin-Pearson, S., & Abbott, R. D. (2001). Long-term effects of the Seattle Social Development intervention on school bonding trajectories. *Applied Developmental Science*, *5*, 225–236.

Hollingshead, A., Kroeger, S. D., Altus, J., & Trytten, J. B. (2016). A case study of positive behavior supports-based interventions in a seventh-grade urban classroom. *Preventing School Failure: Alternative Education for Children and Youth*, *60*(4), 1-8.

Horner, R., Sugai, G., Kincaid, D., George, H., Lewis, T., Eber, L., Barrett, S., Algozzine, B. (2012). *What does it cost to implement school-side PBIS?* Retrieved from: http://www.pbis.org/blueprint/evaluation-briefs/cost-of-implementation

Howell, A., Caldarella, P., Korth, B., & Young, R. K. (2014). Exploring the social validity of teacher praise notes in elementary school. *Journal of Classroom Interaction*, *49*(2), 22-23.

James, M. D., & Sewell, C. S. (2015). Building community among staff and fostering teacher buy-in. *Georgia Association for Positive Behavior Support Conference.* 10.

Jenkins, L. N., Floress, M. T., & Reinke, W. (2015). Rates and types of teacher praise: A review and future directions. *Psychology in the Schools, 52*(5), 463-476.

Jerome, E. M., Hamre, B. K., & Pianta, R. C. (2009). Teacher-child relationships from kindergarten to sixth grade: Early childhood predictors of teacher-perceived conflict and closeness. *Social Development, 18*(4), 915-945.

Jong, R., Mainhard, T., Tartwijk, J., Veldman, I., Verloop, N., & Wubbels, T. (2014). How pre-service teachers' personality traits, self-efficacy, and discipline strategies contribute to the teacher-student relationship. *British Journal of Educational Psychology*, *84*(2), 294-310. doi: 10.1111/bjep.12025

Juniper Gardens Children's Project. (n.d.). What is CW-FIT? *University of Kansas.* Retrieved from: https://cwfit.ku.edu/about.

Kamins, M. L., & Dweck, C. S. (1999). Person versus process praise and criticism: implications for contingent self-worth and coping. *Developmental Psychology, 35*(3), 835-847. http://dx.doi.org/10.1037/0012-1649.35.3.835

Kaplan, J. S., & Carter, J. (1995). *Beyond behavior modification: A cognitive-behavioral approach to behavior management in the school* (3rd ed.). Austin, TX: PRO-ED, Inc.

Kern, L. & Clemens, N. H. (2007). Antecedent strategies to promote appropriate classroom behavior. *Psychology in the Schools, 44*, 65-75.

Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health, 74*(7), 262-273.

Kodak, T., Miltenberger, R. G., & Romaniuk, C. (2003). A comparison of differential reinforcement and noncontingent reinforcement for the treatment of a child's multiply controlled problem behavior. *Behavioral Interventions, 18,* 267-278.

Korpershoeck, H., Harms, T., de Boer, H., van Kuijk, M., & Doolaard, S. (2016). A meta-analysis of the effects of classroom management strategies and classroom management programs on students' academic, behavioral, emotional, and motivational outcomes. *Review of Educational Research, 86*(3), 643-680.

Kratochwill, T. R., Hitchcock, J., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M. & Shadish, W. R. (2010). *Single-case designs technical documentation.* Retrieved from: http://ies.ed.gov/ncee/wwc/pdf/wwc_scd.pdf.

Kyriacou, C., & Kunc, R. (2007). Beginning teachers' expectations of teaching. *Teaching and Teacher Education, 23*(8), 1246-1257. DOI: 10.1016/j.tate.2006.06

LaBrot, Z. C., Pasqua, J. L., Dufrene, B. A., Brewer, E., & Goff, B. (2015). In situ training for increasing Head Start after-care teachers' use of behavior-specific praise. *Journal of Behavioral Education, 16*(3), 280-290.

Lachter, G. D., Cole, B. K., & Schoenfeld, W. N. (1971). Response rate under varying frequency of non-contingent reinforcement. *Journal of the Experimental Analysis of Behavior, 15,* 233–236.

Lavy, S., & Bocker, S. A path to teacher happiness? A sense of meaning affects teacher- student relationships, which affect job satisfaction. *Journal of Happiness Studies.* DOI 10.1007/s10902-017-9883-9

Lee, S. W., & Min, S. (2017). Riding the implementation curve: Teacher buy-in and student academic growth under comprehensive school reform programs. *The Elementary School Journal, 117*(3), 371-395.

Lew, M. M., & Nelson, R. (2016). New teachers' challenges: How culturally responsive teaching, classroom management, and assessment literacy are intertwined. *Multicultural Education, 23*(3/4), 7-13.

Liu, X., & Meyer, J. P. (2005). Teachers' perceptions of their jobs: A multi-level analysis of the teacher follow-up survey for 1994-5. *Teachers' College Record, 107*(5), 985-1003.

Locke, E. A. (1976). The nature and causes of job satisfaction. In M. D. Dunnette (Ed.), *Handbook of Industrial and Organizational Psychology.* 1297-1343. Chicago: Rand McNally.

Ma, H. (2006). An alternative method for quantitative synthesis of single-subject researches. *Behavior Modification, 30*(5), 598-617.

Mahatmya, M., Lohman, B. J., Matjasko, J. L., & Farb, A. F. (2012). Engagement across developmental periods. In S. L.Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement (pp. 45–63).* New York: Springer.

Martens, B.K., Witt, J.C., Elliott, S.N., & Darveaux, D.X. (1985). Teacher judgments concerning the acceptability of school-based interventions. *Professional Psychology: Research and Practice, 16,* 191-198.

Matson, J. L., Shoemaker, M. E., Sipes, M., Horovitz, M., Worley, J. A., Kozlowski, A. M. (2011). Replacement behaviors for identified functions of challenging behaviors. *Research in Developmental Disabilities, 32*(2), 681-684.

Miltenberger, R. G. (2011). *Behavioral modification: Principles and procedures.* Belmont, CA: Cengage Learning.

Morris, B. J., & Zentall, S. R. (2014). High fives motivate: The effects of gestural and verbal praise on motivation. *Frontiers in Psychology, 5,* 1-6. DOI: 10.3389/fpsyg.2014.00928

Mueller, C. M., & Dweck, C. S. (1998). Praise for intelligence can undermine children's motivation and performance. *Journal of Personality and Social Psychology, 75*(1), 33-52.

Nelson, J. R., & Roberts, M. L. (2000). Ongoing reciprocal teacher-student interactions involving disruptive behaviors in general education classrooms. *Journal of Emotional and Behavioral Disorders,* 8(1), 27-37.

Nye, C., & Turner, H. (2007). *Systematic review for single subject designs* [PowerPoint slides]. Retrieved from: www.ncddr.org/pd/workshops/07_12_05sr2/10.0_SSD_120507.ppt

Olive, M. L., & Franco, J. H. (2007). (Effect) size matters: And so does the calculation." *The Behavior Analyst Today (8)*2, 76-86.

Pianta, R. C. (1992). *Student-teacher relationship scale – short form.* [Measurement instrument].

Pianta, R. C., Hamre, B. K., & Allen, J. P. (2012). Teacher-student relationships and engagement: Conceptualizing, measuring, and improving the capacity of classroom interactions. In Christenson, S. L., Reschley, A. L., & Wylie, C. (Eds.), *Handbook of research on student engagement (pp. 653–680).* New York, NY: Springer-Verlag.

Pinar, E. S. (2015) Effectiveness of time-based attention schedules on students in inclusive classrooms in turkey. *Educational Sciences – Theory and Practice, 15*(5), 1305-1316.

Pinter, E. B., East, Al., & Thrush, N. (2015). Effects of a video-feedback intervention on teachers' use of praise. *Education and Treatment of Children, 38*(4), 451-472.

Poirot, K., Hilger, J., & Cates, G. L. (2016). *Differential effects of schedules of noncontingent praise (NCP) on class-wide student and teacher behavior* (Unpublished master's thesis). Illinois State University, Normal, Illinois.

Ramey, C. T., & Ramey, S. L. (2004). Early learning and school readiness: Can early intervention make a difference? *Merrill-Palmer Quarterly, 50,* 471–491.

Rasmussen, K. & O'Neill, R. E. (2006). The effects of fixed-time reinforcement schedules on problem behavior of children with emotional and behavioral disorders in a day-treatment classroom setting. *Journal of Applied Behavior Analysis, 39*(4), 453-457.

Reinke, W. M., Herman, K. C., & Stormont, M. (2013). Classroom-level positive behavior supports in schools implementing SW-PBIS: Identifying areas for enhancement. *Journal of Positive Behavior Interventions, 15*(1), 39-50.

Reinke, W. M., Lewis-Palmer, T., & Martin, E. (2007). The effect of visual performance feedback on teacher use of behavior-specific praise. *Behavior Modification, 31,* 247–263.

Reupert, A., & Woodcock, S. (2010). Success and near misses: Pre-service teachers' use, confidence and success in various classroom management strategies. *Teaching and Teacher Education, 26*(6), 1261-1268.

Richards, L. C., Heathfield, L. T., & Jenson, W. R. (2010). A classwide peer-modeling intervention package to increase on-task behavior. *Psychology in the Schools, 47(*6), 551-566.

Rimm-Kaufman, S., & Sandilos, L. (n.d.). Improving students' relationships with teachers to provide essential supports for learning. *American Psychological Association.* Retrieved from: http://www.apa.org/education/K12/relationships.aspx

Rosenshine, B. V. (1981). How time is spent in elementary classrooms. *Journal of Classroom Interaction*, *17*(1), 16-25.

Sarafino, E. , & Stinger, M.A. Developmental factors in the undermining effect of extrinsic rewards on intrinsic interest: Do young children over justify? The Journal of Genetic Psychology , 1981, 138 , 291-99.

Simonsen, B., Fairbanks, S., Briesch, A., Myers, D., & Sugai, G. (2008). Evidence-based practices in classroom management: Considerations for research to practice. *Education and Treatment of Children, 31*(3), 351-380.

Skipper, Y., & Douglas, K. (2012). Is no praise good praise? Effects of positive feedback on children's and university students' responses to subsequent failures. *British Journal of Educational Psychology*, *82*, 327-339. DOI:10.1111/j.2044-8279.2011.02028.x

Smith, C., Bicard, D. F., Casey, L. B., & Bicard, S. C. (2013). The effects of an interdependent group oriented contingency and performance feedback on the praise statements of pre-service teachers during a summer day-camp for children with disabilities. *International Journal of Behavioral Consultation and Therapy*, *8*(2), 14-16.

Spaulding, S. A., Horner, R. H., May, S. L., & Vincent, C. G. (2008). *Implementing of school-wide PBIS across the United States.* Retrieved from: http://www.pbis.org/blueprint/evaluation-briefs/implementation-across-us

Spector, P. E. (1985). Measurement of human service staff satisfaction: Development of the job satisfaction survey. *American Journal of Community Psychology, 13*(6). 693-713.

Spector, P. E. (1994). *Job Satisfaction Survey*. [Measurement instrument]. Retrieved from: http://shell.cas.usf.edu/~pspector/scales/jsspag.html

Spilt, J. L., Koomen, H. M. Y., Thijs, J. T., & van der Leij, A. (2012). Supporting teachers' relationships with disruptive children: The potential of relationship-focused reflection. *Attachment & Human Development, 14*(3), 305-318.

Steege, M. W., & Watson, T. S. (2009). Conducting school-based functional behavioral assessments: A practitioner's guide (2nd ed.). New York, NY: The Guilford Press.

Stichter, J. P., Lewis, T. J., Whittaker, T. A., Richter, M., Johnson, N. W., & Trussell, R. P. (2009). Assessing teacher use of opportunities to respond and effective classroom management strategies. *Journal of Positive Behavior Interventions, 11*(2), 68-81.

Sugai, G., & Horner, R. (2002). Introduction to the special series on positive behavior support in schools. *Journal of Emotional and Behavioral Disorders. 10*, 130-135.

Sutherland, K. S., Wehby, J. H., & Copeland, S. R. (2000). Effects of varying rates of behavior specific praise on the on-task behavior of students with EBD. *Journal of Emotional and Behavioral Disorders, 8*, 2-8.

Sweigart, C. A., Collins, L. W., Evanovich, L. L., & Cook, S. C. (2016). An evaluation of the evidence base for performance feedback to improve teacher praise using CEC's quality indicators. *Education and Treatment of Children, 39*(4), 419-444.

Sweigart, C. A., Landrum, T. J., & Pennington, R. C. (2015). The effect of real-time visual performance feedback on teacher feedback: A preliminary investigation. *Education and Treatment of Children, 38*(4), 429-450.

Tillery, A. D., Varjas, K., Meyers, J., & Collins, A. S. (2010). General education teachers' perceptions of behavior management and intervention strategies. *Journal of Positive Behavior Interventions, 12*(2), 86-102.

Turnbull, B. (2002). Teacher participation and buy-in: Implications for school reform initiatives. *Learning Environments Research, 5*(3), 235-252. DOI: 10.1023/A:1021981622041

Tye, B. B., & O'Brien, L. (2002). Why are experienced teachers leaving the profession? *Phi Delta Kappan, 84*(1), 24-32. DOI: 10.1177/003172170208400108

U.S. Department of Education. (n.d.). *College- and career-ready standards*. Retrieved from: http://www.ed.gov/k-12reforms/standards

Veldman, I., Admiraal, W., van Tartwijk, J., Mainhard, T., & Wubbels, T. (2016). Veteran teachers' job satisfaction as a function of personal demands and resources in the relationships with their students. *Teachers and Teaching: Theory and Practice, 22*(8), 913-926.

Veldman, I., van Tartwijk, J., Brekelmans, M., & Wubbels, T. (2013). Job satisfaction and teacher-student relationships across the teaching career: Four case studies. *Teaching and Teacher Education, 32,* 55-65.

Voelkl, K. E. (2012). School identification. In S. L. Christenson, A. L. Reschly & C. Wylie (Eds.), *Handbook of research on student engagement (pp. 193–218).* New York: Springer.

Vollmer, T. R., Iwata, B. A., Zarcone, J. R., Smith, R. G., & Mazaleski, J. L. (1993). The role of attention in the treatment of attention-maintained self-injurious behavior: Noncontingent reinforcement and differential reinforcement of other behavior. *Journal of Applied Behavior Analysis, 26,* 9-21.

Walker, H. M., Ramsey, E., Gresham, F. M. (2003). *How early intervention can reduce defiant behavior – and win back teaching time.* Retrieved from: http://www.aft.org/periodical/american-educator/winter-2003-2004/heading-disruptive-behavior

Walker, J. E., & Shea, T. M. (1998). *Behavior management: A practical approach for educators, 7th Edition.* Prentice Hall: Upper Saddle River.

Watkins, M. W., & Pacheco, M. (2000). Interobserver agreement in behavioral research: Importance and calculation. *Journal of Behavioral Education, 10*(4), 205-212.

Wehby, J. H., Symons, F. J., & Shores, R. E. (1995). A descriptive analysis of aggressive behavior in classrooms for children with emotional and behavioral disorders. *Behavioral Disorders, 20,* 87–105.

Weinstein, C. S. (2003). Secondary classroom management: lessons for research and practice (2nd ed.). Boston: McGraw Hill.

Whitaker, R. C., Dearth-Wesley, T., & Gooze, R. A. (2015). Workplace stress and the quality of teacher–children relationships in Head Start. Early Childhood Research Quarterly, 30, 57-69. doi: http://dx.doi.org/10.1016/j.ecresq.2014.08.008

Witt, J. C., & Elliott, S. N. (1985). Acceptability of classroom intervention strategies. *Advances in School Psychology, 4*, 251-288.

Witt, J. C., & Martens, B. K. (1983). Assessing the acceptability of behavioral interventions used in classrooms. *Psychology in the Schools, 20,* 510-517.

Wubbels, T., Brekelmans, M., den Brok, P., & van Tartwijk, J. (2006). An interpersonal perspective on classroom management in secondary classrooms in the Netherlands. In. C. Evertson & C. S. Weinstein (Eds), *Handbook of classroom management: Research, practice and contemporary issues* (pp.1161-1191). New York: Lawrence Erlbaum Associates.

APPENDIX A: TEACHER DEMOGRAPHIC QUESTIONNAIRE

1. What grade do you currently teach?
    a. How many years have you been teaching this grade?
    b. What grade do you enjoy teaching most?
2. How many years have you been teaching at this school?
3. How many years have you been teaching total?
4. What is your gender?
5. What is your age?
6. What race/ethnicity best describes you?
7. What is the primary language spoken in your home?
8. What is your highest degree earned?

APPENDIX B: STUDENT-TEACHER RELATIONSHIP SCALE – SHORT FORM

Page 1: modified STRS - SF instructions and items for use in Pennsylvania Head Start Staff Wellness Survey

Page 2: original STRS instrument

YOUR RELATIONSHIPS WITH CHILDREN IN THE CLASSROOM

Please reflect on how much each of the statements below currently applies to your relationship with the children in your classroom. All relationships are individual, but in responding, please think about your relationships with the children in your classroom in general. Use the scale below to choose the appropriate response for each item.

Definitely does not apply	Not really	Neutral, not sure	Applies somewhat	Definitely applies
1	2	3	4	5

1. I share an affectionate, warm relationship with the childre .
2. The children and I always seem to be struggling with each other.
3. If upset, the children will seek comfort from me.
4. The children are uncomfortable with physical affection or touch from me.
5. The children value their relationship with me.
6. When I praise the children, they beam with pride.
7. The children share information with me about hemselves even if I don't ask.
8. The children easily become angry with me.
9. It is easy to be in tune with what the children are feeling.
10. The children remain angry or are resistant after being disciplined.
11. Dealing with the childre drains my energy.
12. When the children are in a bad mood, I know we're in for a long and difficult day.
13. The children s feelings toward me can be hard to predict or can change suddenly.
14. The children are sneaky or manipulative with me.
15. The children openly share their feelings and experiences with me.

Citation: Whitaker, R. C., Dearth-Wesley, T., & Gooze, R. A. (2015). Workplace stress and the quality of teacher–children relationships in Head Start. *Early Childhood Research Quarterly, 30*, 57-69. doi: http://dx.doi.org/10.1016/j.ecresq.2014.08.008

1

APPENDIX C: TEACHER STRESS INVENTORY

The following are a number teacher concerns. Please identify those factors which cause you stress in your present position. Read each statement carefully and decide if you ever feel this way about your job. Then, indicate how strong the feeling is when you experience it by circling the appropriate rating on the 5-point scale. If you have not experienced this feeling, or if the item is inappropriate for your position, circle number 1 (no strength; not noticeable). The rating scale is shown at the top of each page.

Examples:

I feel insufficiently prepared for my job. 1 2 3 4 5

If you feel very strongly that you are insufficiently prepared for your job, you would circle number 5.

I feel that if I step back in either effort or commitment,
I may be seen as less competent. 1 2 3 4 5

If you never feel this way, and the feeling does not have noticeable strength, you would circle number 1.

	1	2	3	4	5
HOW STRONG ?	no strength; not noticeable	mild strength; barely noticeable	medium strength; moderately noticeable	great strength; very noticeable	major strength; extremely noticeable

WORK-RELATED STRESSORS

9. There is little time to prepare for my lessons/responsibilities.	1	2	3	4	5
10. There is too much work to do.	1	2	3	4	5
11. The pace of the school day is too fast.	1	2	3	4	5
12. My caseload/class is too big.	1	2	3	4	5
13. My personal priorities are being shortchanged due to time demands.	1	2	3	4	5
14. There is too much administrative paperwork in my job.	1	2	3	4	5

DISCIPLINE AND MOTIVATION

I feel frustrated...

20.... because of discipline problems in my classroom.	1	2	3	4	5
21.... having to monitor pupil behavior.	1	2	3	4	5
22.... because some students would better if they tried.	1	2	3	4	5
23.... attempting to teach students who are poorly motivated.	1	2	3	4	5
24.... because of inadequate/poorly defined discipline problems.	1	2	3	4	5
25.... when my authority is rejected by pupils/administration.	1	2	3	4	5

APPENDIX D: JOB SATISFACTION SURVEY

JOB SATISFACTION SURVEY

Paul E. Spector
Department of Psychology
University of South Florida

PLEASE CIRCLE THE ONE NUMBER FOR EACH QUESTION THAT COMES CLOSEST TO REFLECTING YOUR OPINION ABOUT IT.

		Agree very much	Agree moderately	Agree slightly	Disagree slightly	Disagree moderately	Disagree very much
1	I feel I am being paid a fair amount for the work I do.	1	2	3	4	5	6
2	There is really too little chance for promotion on my job.	1	2	3	4	5	6
3	My supervisor is quite competent in doing his/her job.	1	2	3	4	5	6
4	I am not satisfied with the benefits I receive.	1	2	3	4	5	6
5	When I do a good job, I receive the recognition for it that I should receive.	1	2	3	4	5	6
6	Many of our rules and procedures make doing a good job difficult.	1	2	3	4	5	6
7	I like the people I work with.	1	2	3	4	5	6
8	I sometimes feel my job is meaningless.	1	2	3	4	5	6
9	Communications seem good within this organization.	1	2	3	4	5	6
10	Raises are too few and far between.	1	2	3	4	5	6
11	Those who do well on the job stand a fair chance of being promoted.	1	2	3	4	5	6
12	My supervisor is unfair to me.	1	2	3	4	5	6
13	The benefits we receive are as good as most other organizations offer.	1	2	3	4	5	6
14	I do not feel that the work I do is appreciated.	1	2	3	4	5	6
15	My efforts to do a good job are seldom blocked by red tape.	1	2	3	4	5	6
16	I find I have to work harder at my job because of the incompetence of people I work with.	1	2	3	4	5	6
17	I like doing the things I do at work.	1	2	3	4	5	6
18	The goals of this organization are not clear to me.	1	2	3	4	5	6

PLEASE CIRCLE THE ONE NUMBER FOR EACH QUESTION THAT COMES CLOSEST TO REFLECTING YOUR OPINION ABOUT IT.

		Agree very much	Agree moderately	Agree slightly	Disagree slightly	Disagree moderately	Disagree very much
19	I feel unappreciated by the organization when I think about what they pay me.	1	2	3	4	5	6
20	People get ahead as fast here as they do in other places.	1	2	3	4	5	6
21	My supervisor shows too little interest in the feelings of subordinates.	1	2	3	4	5	6
22	The benefit package we have is equitable.	1	2	3	4	5	6
23	There are few rewards for those who work here.	1	2	3	4	5	6
24	I have too much to do at work.	1	2	3	4	5	6
25	I enjoy my coworkers.	1	2	3	4	5	6
26	I often feel that I do not know what is going on with the organization.	1	2	3	4	5	6
27	I feel a sense of pride in doing my job.	1	2	3	4	5	6
28	I feel satisfied with my chances for salary increases.	1	2	3	4	5	6
29	There are benefits we do not have which we should have.	1	2	3	4	5	6
30	I like my supervisor.	1	2	3	4	5	6
31	I have too much paperwork.	1	2	3	4	5	6
32	I don't feel my efforts are rewarded the way they should be.	1	2	3	4	5	6
33	I am satisfied with my chances for promotion.	1	2	3	4	5	6
34	There is too much bickering and fighting at work.	1	2	3	4	5	6
35	My job is enjoyable.	1	2	3	4	5	6
36	Work assignments are not fully explained.	1	2	3	4	5	6

APPENDIX E: INTERVENTION RATING PROFILE - 15

Intervention Rating Profile –15 (IRP-15)

The purpose of this questionnaire is to obtain information that will aid in the selection of classroom interventions. These interventions will be used by teachers of children with behavior problems. Please circle the number that best describes your agreement or disagreement with each statement using the scale below.

1=strongly disagree 2=disagree 3=slightly disagree 4=slightly agree 5=agree 6=strongly agree

1.	This would be an acceptable intervention for the child's problem behavior.	1 2 3 4 5 6
2.	Most teachers would find this intervention appropriate for behavior problems in addition to the one described.	1 2 3 4 5 6
3.	This intervention should prove effective in changing the child's problem behavior.	1 2 3 4 5 6
4.	I would suggest the use of this intervention to other teachers.	1 2 3 4 5 6
5.	The child's problem behavior is severe enough to warrant use of this intervention.	1 2 3 4 5 6
6.	Most teachers would find this intervention suitable for the behavior problem described.	1 2 3 4 5 6
7.	I would be willing to use this intervention in the classroom setting.	1 2 3 4 5 6
8.	This intervention would *not* result in negative side effects for the child.	1 2 3 4 5 6
9.	This intervention would be appropriate for a variety of children.	1 2 3 4 5 6
10.	This intervention is consistent with those I have used in classroom settings.	1 2 3 4 5 6
11.	The intervention was a fair way to handle the child's problem behavior.	1 2 3 4 5 6
12.	This intervention is reasonable for the behavior problem described.	1 2 3 4 5 6
13.	I liked the procedures used in this intervention.	1 2 3 4 5 6
14.	This intervention was a good way to handle this child's behavior problem.	1 2 3 4 5 6
15.	Overall, this intervention would be beneficial for the child.	1 2 3 4 5 6

APPENDIX F: CLASS WIDE BEHAVIORAL OBSERVATION FORM

Class Wide Behavioral Observation Form

Teacher: _____ **Date:** _____

Observer: _____ **Time:** _____

Subject/Activity: _____

Student Behavior	Definitions
Academic Engaged Time (AET)	Student appropriately responding to teacher and/or lesson
Inappropriate Socialization (IS)	Student socializing in a manner inconsistent with intended learning
Inappropriate Motor Behavior (IMB)	Student engaging in behavior incompatible with learning other than socialization (e.g. out of seat, staring out window etc.)

For Student Behavior: if it occurs within the 30 second interval, put an X in the box

Teacher Behavior	Definitions
Reprimand (R)	Statement indicating rebuke or a negative consequence
Process Praise (Pro)	Statement indicating approval about student's effort, strategy
Person Praise (Pers)	Statement indicating approval about the student (e.g., attribute, performance)
General Praise (Gen)	Statement indicating approval (e.g., "Good job, Student.")

For Teacher Behavior: Place a tally mark in the appropriate row each time it occurs

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	AET																				
	IS																				
	IMB																				
		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STUDENT	AET																				
	IS																				
	IMB																				
		41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
	AET																				
	IS																				
	IMB																				

TEACHER	R	
	Pro	
	Pers	
	Gen	