INCREASING SECONDARY TEACHERS' USE OF PRAISE WITH VIDEO PERFORMANCE FEEDBACK

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The dynamic of the general education classroom has changed over the past decade with the implementation of No Child Left Behind (2001) and the Individuals with Disabilities Education Improvement Act (2004). To begin the process of meeting NCLB and IDEA regulations, states have created academic standards that are tested annually through standardized assessments, in addition to creating accountability systems for teachers. In order for all students to develop mastery of the academic standards, students with disabilities were included into the general education classroom on a greater scale than previously seen. Teachers in inclusive settings require strategies to assist in promoting appropriate behavior and learning, specific praise serves as a potential classroom management strategy for the inclusive setting where teachers' use of praise statements potentially decreases disruptive behavior and ultimately improves instructional time. Current literature assessing the use of specific praise in the classroom contains methodological weaknesses and neglects populations, like secondary general education teachers, that are in great need of additional classroom management strategies. The current study expanded on the literature to include secondary general education teachers, as well

as improving on methodological weakness discussed in the review. *Tools for Positive Behavior Change* with specific praise was demonstrated as a viable strategy for the inclusive setting by improving student-teacher interactions and decreasing student disruptive behavior.

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PREFACE

Thank you to my husband, Kevin, my son, Rush, and the rest of my wonderful family who offered endless support through this process. To my mother, Pat, my mother-in-law, Gail, and my grandmother, Carol, for picking up the slack at home and helping me to juggle everything. Your love and belief in me helped to make this dream a reality. Thank you to my advisor, Doug, for his guidance, patience, and understanding.

1.0 INTRODUCTION

Federal legislation instituted in the past decade, such as No Child Left Behind and Individuals with Disabilities Education Improvement Act (NCLB; IDEIA; Wright & Wright, 2006), has altered the dynamic of the general education classroom, as well as the role and responsibilities of the general education teacher. NCLB created a climate of high-stakes, standards-linked testing that pushed administrators and teachers to align curriculum to state standards and change instructional practices to ensure the success of all students (Scruggs, Brigham, & Mastropieri, 2013; Plank & Condliffe, 2013). NCLB stressed a curriculum/assessment relationship mandating all students receive assessment on the same curricula material (Umpstead, 2008).

The requirements of NCLB necessitated sweeping changes: all populations of students regardless of disability or disadvantage must have access to the standards assessed (Bicard, Bicard, Casey, & Nichols, 2008). The changes, in turn, increased the practice of inclusion (Zigmond, Kloo, & Volonino, 2009). Many educators determined that for students with disabilities to achieve proficiency, they needed to experience inclusive environments to better access the advanced standards reflected on standardized testing (Fuller, Wright, Gesicki, & Kang, 2007). IDEIA supported this practice by recommending that students with disabilities spend as much time as possible in an inclusive setting (Fuller et al., 2007; Zigmond et al., 2009). IDEIA presents these recommendations in terms of Least Restrictive Environment (LRE). Many

states have adopted policies that translate the recommendations from NCLB and IDEIA into a percentage of time that students with disabilities be included in general education classrooms, for instance, Georgia endorses the 80/90 rule where 80% of students with disabilities spend 90% of their time in a general education setting (Dee, Jacob, & Schwartz ., 2013). Recommendations such as this have increased both the diversity of general education classrooms and the number of students educated there, in addition to affecting classroom quality.

The inclusive changes resulting from interpretations of NCLB and IDEIA have impacted specific aspects of the classroom environment, including student-teacher interactions, classroom organization, and instructional support (Plank & Condliffe, 2013). Plank and Condliffe (2013) explain that student achievement is directly related to classroom variables rather than school variables. The authors assessed third grade classrooms prior to high-stakes testing and after testing and found that third grade classrooms prior to high-stakes testing lacked instructional support, had a greater number of negative student-teacher interactions, and a great number of classroom protocols or rules. Second graders, not participating in high-stakes testing, did not experience the same changes. The findings of the study demonstrate that teachers can alter instructional practices and interactions when facing the pressures of high-stakes testing.

The type of interaction, positive or negative, between student and teacher can greatly impact student academic performance, more so than individual student or school demographics (Roorda, Koomen, Spilt, & Oort, 2011; Plank & Condliffe, 2013). Pianta and colleagues (2008) found that a positive, supportive classroom teacher was a strong predictor of literacy and math outcomes for third and fifth grade students. Roorda and colleagues (2011) extended these findings at the secondary level. Despite the relationship between positive student-teacher interactions and achievement, Roorda et al. (2001) found that the interactions between students

and teachers become more negative as students grow older. These findings suggest that focusing on the improvement of student-teacher interactions, particularly at the secondary level where decline begins in earnest, will likely improve student academic performance and assist teachers in managing student inappropriate behavior (Roorda et al., 2011).

Research shows that the implementation of components of NCLB has led to an increase in negative student-teacher interactions, which often leads to more disruptive behavior and inappropriate behavior (Way, 2011). As discussed above, secondary teachers experience a greater number of negative interactions and have more issues with behavior management due to the higher levels of inappropriate behavior (Roorda et al., 2011). Teachers' inability to manage behavior and classroom organization in positive ways can significantly reduce teaching effectiveness and student performance (Brophy, 1981). With the pressure of standardized assessment performance, teachers should create an environment that fosters improved achievement with as few disruptions as possible (Oliver & Reschly, 2007). One such strategy, behavior specific praise (BSP), is shown to promote positive interactions, decrease disruptive behavior, explicitly state expectations, and potentially enhance learning within a classroom (Musti-rao & Haydon, 2011).

BSP ideally increases positive student-teacher interactions which can lead to improved student achievement (Pianta et al., 2008). Research has shown that BSP increases the use of positive statements with elementary general education and special education teachers (Allday et al., 2012; Chalk & Bizo, 2004; Pisacreta, Tincani, Connell, & Axelrod, 2011). Praise can have the ability to develop engagement in students because teachers offer a direct statement of the contingency between the behavior and the reinforcement (Brophy, 1981). In the act of praising teachers can identify the student behaviors that they are trying to reinforce, and give BSP

(Conroy et al., 2009). The use of BSP can increase the likelihood that the target student will repeat the behavior because expected behaviors are being explicitly stated and reinforced. Allday and colleagues (2012) have shown that increasing a teacher's use of positive or praise statements at the elementary level has the potential to increase on-task behavior for students with emotional behavioral disorder and can decrease disruptive behavior as demonstrated by Pisacreta and colleagues (2011). Consistent use of BSP could change the pattern of the students' behavior, potentially improving the classroom environment by decreasing disruptive behavior and increasing engagement (Musti-rao & Haydon, 2011).

BSP offers a management strategy to deal with the new dynamic of the general education classroom in the wake of high-stakes testing and teacher accountability. Researchers have offered a variety of BSP interventions that include definitions of BSP, examples of BSP, and practice giving BSP in the classroom (e.g., Allday et al., 2012; Duchaine et al., 2011; Hawkins & Heflin, 2011). Within these interventions, teachers often receive feedback either written, verbal, or visual representation of the teachers' use of BSP during each observation to improve teacher implementation of the intervention (Duchaine et al., 2011; Hawkins & Heflin, 2011; Pisacreta et al., 2011; Reinke et al., 2007; Reinke et al., 2008). Despite the variations in both training and feedback researchers have demonstrated consistent improvement in elementary and special education teachers' use of BSP during the intervention phase and subsequent improvement in student on-task behavior or a decline in disruptive behavior (Allday et al., 2012; Duchaine et al., 2011; Hawkins & Heflin, 2011; Myers et al., 2011; Pisacreta et al., 2011; Sutherland et al., 2001). However, very few of the studies in the literature base addressed the use of BSP with general education teachers, especially secondary teachers in the inclusive classroom.

Secondary general education teachers have faced a greater number of changes due to NCLB and IDEIA than their elementary counterparts, as many states have made high-school graduation dependent on demonstrating proficiency on the high-stakes testing (Heckman & LaFontaine, 2010). This has led to full inclusion of most students with disabilities, an increase in class size to include these students, and greater pressures for proficiency on standardized assessments (Heckman & LaFontaine, 2010). With the change in the classroom environment, the pressures of demonstrating proficiency in all students, and the concern about increased negative interactions, as discussed above, secondary general education teachers are in need of a strategy that encompasses the use of BSP. By extending the literature to this group of teachers, the foundation of the research base will be strengthened and BSP will be demonstrated to be a viable, evidenced-based, classroom management strategy for secondary general education teachers in the inclusive classroom.

2.0 LITERATURE REVIEW

Past research demonstrates, teachers, particularly those working with students with disabilities, often struggle with the use of positive statements and instead overuse negative statements (Baloglu, 2009; White, 1975). In addition, the transition to full inclusion of students with disabilities into general classrooms as a result of NCLB and IDEIA has often found both elementary and secondary teachers unprepared to manage the behavioral needs of their students (Duchaine, Jolivette, & Fredrick, 2011; Holdheide & Reschly, 2008; Oliver & Reschly, 2007). With the pressures and additional responsibility from NCLB for all students, especially those at-risk, to become proficient in reading, writing, math and science, teachers are in need of effective strategies that develop positive student-teacher interactions that can support student engagement and thus increase student achievement (O'Connor et al., 2011). In addition, general education teachers find additional professional development in the area of classroom management is needed to better manage the diverse needs of an inclusive classroom. Behavior specific strategies (BSP) strategies make it possible to improve student-teacher interactions, decrease inappropriate behavior, and potentially increase student engagement by creating a positive classroom environment that improves achievement.

2.1 PURPOSE OF THE REVIEW

A systematic review of BSP teacher interventions would help identify the essential components of the BSP interventions, as well as the approaches used in both past and current research to measure the effectiveness of the BSP intervention. The use of BSP teacher interventions has spanned more than two decades amassing a conglomeration of approaches to training teachers and components used to convey the use and benefits of BSP in the classroom. With such an array of studies and approaches, a better understanding of the research settings of the interventions, the specific training components included in the interventions, the use of feedback during intervention, and the measurement of student outcomes as way of determining the intervention's effectiveness is needed. Identifying how previous research has addressed each of these components is necessary to creating a BSP classroom management approach that assists teachers to address the added issues created by NCLB, inclusion, and high-stakes testing. In this chapter, a review of the research literature on BSP was undertaken that addresses: (1) how the settings and participants have varied within the studies; (2) what the key components to the intervention are and how feedback is incorporated; and (3) what outcome measures were used to evaluate the effectiveness of the BSP teacher intervention and how these outcomes were defined and measured.

2.2 METHODS FOR REVIEW

Two computerized databases (i.e., ERIC and PSYCINFO) provided the foundation for the initial search results. Descriptors and all possible variations including *classroom*

management, *behavior specific praise* or *praise statements*, and *teachers* were used within the search. An ancestral search also identified pertinent articles (Pisacreta, Tincani, Connell, & Axelrod, 2011; Chalk and Bizo 2004). An additional step involved a hand search of the *Journal of Positive Behavior Interventions*; a journal that often reports research on classroom management strategies for various academic behaviors.

To meet criteria for the review, an article had to:

1. Appear in a peer-reviewed journal. Theses and dissertations do not meet criteria.
2. Include elementary or secondary teachers as participants in the research study. Studies including pre-service (e.g., Reupert & Woodcock, 2010) or early childhood teachers (e.g., Fullerton, Conroy, & Correa, 2009) did not meet inclusion criteria.
3. Include a teacher intervention that isolates behavior specific praise. Praise as a larger portion of a teacher intervention (e.g., MacSuga & Simonsen, 2011) did not meet inclusion criteria.
4. Report direct measurement of effects of at least one independent variable (e.g., Visual Performance Feedback or VPF) on a primary dependent variable of teacher behavior (e.g., Behavior Specific Praise or BSP).
5. Include behavior specific praise as a dependent measure. Teacher interventions that focus on BSP (e.g., Matheson & Shriver 2005; McNamara, Harrop, & Owen, 1987), but do not measure changes in use of BSP were not included.
6. Employ a single-subject, experimental, or quasi-experimental research design rather than a qualitative research approach (e.g., Roache, 2011).

The initial on-line searches generated 456 articles of which only 12 met all of the above inclusion criteria. An ancestral search of relevant literature reviews and all articles meeting

criteria generated two additional articles; one more article resulted from the hand search. The qualifying 15 articles meeting review criteria were published in 10 journals. Table 1 summarizes critical features of the 15 research articles. The studies are numbered, and to make the discussion that follows more readable, they will be referred to by number.

2.3 RESULTS FROM THE REVIEW

2.3.1 Settings and Participants

Across the 15 studies, there was a wide range of variability in both the settings and participants. In four studies (3, 10, 11, 14), the authors did not disclose the gender or grade assignment of the participants. In the remaining 11 studies, participants included both elementary and secondary teachers who taught students with and without disabilities. There were 65 teacher participants (45 females, 10 males, and 10 participants whose gender was not reported). The participants ranged from kindergarten teachers to high school teachers. In some studies, authors offered information about the teachers' certification: there were 20 general education teachers (1, 3, 6, 7, 8, 9, 11, 15) and 11 special education teachers (3, 4, 5, 6, 10, 11, 13), and 14 unknown (2, 8, 12, 14). The group of general education teachers included 13 elementary teachers (1, 6, 9, 11), four middle school teachers (1, 6, 7, 11), and three high school teachers (3). The special education teachers included one elementary (5), nine middle (4, 6, 10, 11), and one high school (3). The variation in teacher grade level and certification created a wide variety of research settings.

Researchers conducted their research in a range of settings including: alternative or self-contained classrooms (4, 5, 10, 13, 14), inclusive elementary classrooms (1, 2, 8, 9, 12, 15), inclusive middle school classrooms (6, 7) , inclusive high school classrooms (3), or both middle and high school classrooms (11).

In addition, to teacher participants, some of the studies reported on student behavior as well as teacher behavior (1, 2, 3, 6, 7, 8, 9, 13, 15). Some student participants were selected in relation to a particular disability category like EBD (1,13), others (3, 6) randomly selected a number of students to observe in each session. Some observed the entire class (2, 7, 9, 13, 15), and one (8) used teacher-identified students. Reinke and colleagues (2007) had teachers' select students demonstrating the most problem or disruptive behavior within the classroom. Teacher background, classroom setting, and student make up influenced the intervention components selected by the researchers, as well as the duration and implementation of the intervention.

2.3.2 Intervention Components

The interventions within the current body of literature contain two parts: teacher training and post-training. In some studies, researchers described in detail the teacher training (1, 3, 4, 6, 7, 9, 11, 12, 14); in others, authors supplied only brief summaries of the training (2, 5, 8, 13, 15). There was considerable variation in the definition of behavior specific praise and how this behavior was measured.

In the post-training phase of the studies, some researchers used some form of feedback (3, 4, 6, 7, 9, 11, 13) and some did not (1, 2, 5, 12, 14, 15).

2.3.2.1 Teacher Training

The instructional components of an intervention are an integral part of improving the frequency of BSP use in the classroom. Horner and colleagues (2005) explain that in single-subject research the independent variables, the teacher intervention in the current studies under review, "are operationally defined to allow both valid interpretation of results and accurate replication of the procedures" (p. 67). However, the current research lacks consistent explanations of the BSP training. Some researchers offered a detailed explanation of the components of the training (1, 3, 4, 6-, 7, 9, 11, 12, 14); in others, the researchers did not (2, 5, 8, 13, 15).

The specificity of the explanations for the training varied for each study with some researchers describing all aspects of the instruction; including duration of the study, number of times the participants received training, and the criterion levels in place (1, 3, 10, 12). Other researchers offered a detailed description of the content of the instruction and the number of times the participants received the training without mentioning the duration (4, 6, 7). The description of the instruction for the studies mentioned above included ways of explaining BSP, examples of BSP, modes of dissemination, and individuals involved in implementation (4, 6, 7).

As an additional component of the training, some researchers also added goal-setting for the participants (3-4 & 6) with another adding a criterion measure for completing the intervention (4). The goal-setting component referenced the teacher's use of BSP during baseline and required the teacher to set a goal for improvement in the intervention phase. In the description of the intervention, one group of researchers offered the specific formula for calculating the teachers' goal value (4); whereas, others allowed the teachers to choose a number of BSP statements as their goal that was greater than his/her performance in baseline (3, 6). The

criterion measure used by Hawkins and Heflin (2011) was designed to ensure that the teachers met their goal for BSP before leaving the intervention phase. To meet criterion teachers had to reach their goal for three consecutive sessions across a minimum of five sessions. The goal setting and criterion were set during training prior to the observation and feedback portion of the intervention; however, both were consistently referenced during feedback.

In the description of the methods for the studies lacking operational definitions of the intervention (2, 5, 8, 13, 15) the researchers merely provided a brief statement about the intervention focusing on BSP and the duration of the intervention. The researchers did not offer a description of how the participants learned about BSP, how many times they met with the researcher for training, or if the participants had to reach a criterion level before moving forward in to the next phase of the study.

2.3.2.2 Definitions of BSP

For training purposes, the teacher participants within each study were offered specific definitions of BSP. The majority of the studies defined BSP as an interaction between student and teachers where the teacher provides a student or students with a praise statement that is contingent on a behavior and specifies a behavior (1, 3, 4, 5, 6, 8, 9, 13). A number of the studies referred to BSP as specific praise (2, 10, 11, 12, 15); however, the definition contained the same components as the one discussed above, a praise statement that is both contingent on a behavior and specifies a behavior. For one of the studies (7), BSP was referred to as teacher praise and consisted of praise statements given to students who demonstrated behaviors that followed the classroom rules. This definition is similar to the one above; however, it is specific to classroom rules. One study (14) did not contain definitions of the dependent measures or a description of how BSP was explained to the teacher participants.

2.3.2.3 Post-Training

To support the instructional portion of the study many of the researchers implemented a feedback protocol throughout the intervention (3, 4, 6, 7, 8, 9, 10, 13). However, other researchers performed the BSP training and then proceeded with observations without the implementation of feedback (1-2, 5, 11-12, 14-15).

Studies with feedback. The interventions that included feedback offered feedback in similar forms (i.e., written or verbal); however, there was great variation around when the feedback was given following training. Researchers gave feedback in the form of visual performance feedback (VPF), verbal feedback through consultation, or written feedback. The protocols consisting of visual performance feedback (VPF; 3, 4, 7, 8, 9) used a graph to chart each teacher's frequency of BSP during an observation. The researcher then added to the graph after each subsequent observation. VPF was initially introduced by Reinke et al. (2007) and was staggered across the intervention, so the teacher received VPF during different weeks within the intervention. Reinke et al. (2007) did not offer any verbal feedback when the teacher received the graphical representation of his/her use of BSP. The basic format of VPF was maintained by the other three researchers who used VPF and the researchers cited Reinke et al. (2007) when describing the feedback format. There were a few additions made to VPF. Hawkins and Heflin (2011) as well as Pisacreta et al. (2011) coupled it with verbal feedback and offered the feedback at consistent intervals throughout the intervention phase. Reinke and colleagues (2008) with Duchaine et al. (2011) offered additional written examples of BSP.

The researchers who did not perform VPF (6, 10, 13) offered written or verbal feedback on a consistent schedule during the intervention. During the feedback sessions, the teachers were given examples where they correctly used BSP in previous observations (10, 13) or offered

specific ways to improve BSP in the classroom (6). The feedback sessions also referenced any goals that were set during training (6). The feedback sessions were usually short in duration, five to ten minutes, and occurred prior to the start of an observation. The added time with teachers to present the feedback was one of the primary reasons the remaining studies chose not to use feedback as part of the intervention.

Studies without feedback. The researchers of the six studies without feedback mentioned that it was either impractical or not feasible in real-time school settings or outside the study (1, 2, 5, 12, 14, 15). It was believed that teachers would not have time available for an additional consultation following training. However, a few researchers attempted feedback in a different manner by having teachers self-monitor their behavior as part of the intervention, which did not require additional time following training (1, 5, 12, 14). To perform self-monitoring the teacher was expected to keep track of his/her frequency of BSP in a given period and then assess the improvement or lack thereof in using BSP (5). During the training of BSP teachers were taught a particular method of keeping track of their use of BSP while teaching (2). For instance, Kalis et al. (2007) had the teacher tally the number of BSP statements she offered in a fifteen minute period of teaching, which was denoted by a timer. Researchers did not review the teachers' tally or determine if it was similar to their own. The primary focus of these interventions was the initial training and teachers' increased use of BSP without further cues (1). The researchers kept the instruction and data collection protocols simple.

2.4 OUTCOME MEASURES

The researchers in the 15 studies focused on both teacher measures and student measures to determine the effectiveness of the BSP intervention. The teacher measures focused on teacher general praise statements (1, 4, 5, 6, 8, 9, 10, 13), BSP statements (in all studies because that was part of the criteria for inclusion in the review), and in a few studies on teachers' use of negative statements (6) or reprimands (7, 9, 14). Similarly, the student measures assessed effectiveness of the teachers' implementation of the intervention and intervention components. Researchers measured students' on-task behavior (1, 2, 3, 13) or engagement, off-task behavior (1, 6, 15), or disruptive behavior (6, 7, 8, 9) to determine student responses to the intervention. Important aspects of both the teacher measures and student measures were the methods of measurement used by the researchers, as well as, frequency and duration of measurement. Each of the aspects relating to the outcomes measures of the studies are discussed in more detail below.

2.4.1 Teacher Measures

The presentation of results varied depending on the researchers' method of measuring the behaviors, which made comparison and overall analysis of results difficult. The primary differences between studies were the use of continuous (i.e., frequency), discontinuous (i.e., interval recording), and/or self-monitoring (i.e., taken by the teacher) recording. For the continuous observation technique researchers observed teachers for 10 minutes (4, 9), 15 minutes (3, 6, 14), or 30 minutes (1, 15), recording the frequency of general praise (1, 4, 9), BSP (all), and negative statements (6) or reprimands (9, 14) in that time. A few studies relied on the teachers' ability to track the frequency of their own behavior through the use of a self-monitoring

strategy (2, 5, 11). The remaining studies used discontinuous recording, such as, interval recording, to track teacher behavior with one study using 15 second intervals to track both BSP and reprimands (7), two studies using 10 second intervals (8, 10), and two using one-minute intervals (12, 13).

When presenting the results of the behaviors recorded from each observation some alterations were made to the data for presentation in the results section of the articles. A few of the researchers maintained the frequency count when presenting teacher behavior (3, 5, 9, 12, 14, 15); however, a number of the researchers converted the observation data into rate per minute (8, 11, 13) or percent change (1, 10) or ratio of positives to negatives (2, 6). Altering the data for presentation by changing to percent change may skew the data and give the impression of greater improvement during intervention. As Johnston and Pennypacker (2009) explain frequency counts or rate per minute should be used in visual analysis to offer a representative example of the behavior from the observations.

The results from researchers using continuous data collection methods demonstrated improvement in the number of general praise statements (1, 4, 9), and BSP inform baseline to intervention (1, 3, 4, 6, 9, 14,15). The researchers who measured general praise did not show as great an improvement from baseline to intervention as that seen with BSP. Since, the primary focus of each of the interventions was increasing the use of BSP, fewer general praise statements would be expected following the intervention. Allday and colleagues (2012) noted an increase in teacher 1's use of general praise, with a rate of .31 in baseline to .58 post-intervention; however, all three other teachers showed a decline in general praise from baseline to post-intervention as expected following training focused on implementing more BSP. Hawkins and Heflin (2011) demonstrated a similar pattern in general praise statements with all three teachers improving

general praise in the first intervention phase, but declining in the withdrawal, second intervention, and maintenance phases. Teacher 3 was the only one who demonstrated higher levels of general praise in the maintenance phase of the study with a mean of .1 in baseline and 1 in maintenance (Hawkins & Heflin, 2011). Unlike the two previous studies, Reinke et al. (2008) showed marked improvement with all four teachers' use of general praise from baseline to intervention with feedback. Teacher 1 demonstrated a mean of .31 in baseline and a mean of 1.42 in the intervention with feedback phase, while teacher 2 had a mean of .55 praise statements in baseline and increased to 1.7 in intervention. Teacher 3 showed an improvement from baseline to intervention with a mean of 1.03 in baseline and 1.98 during intervention with feedback, and teacher 4 followed a similar pattern as teachers 1 and 2 with a mean of .44 in baseline increasing to 1.77 in intervention with feedback.

The researchers using discontinuous forms of data measurement consistently demonstrated improvements in BSP in the intervention phase; however, there was some inconsistency with teachers maintaining the use of BSP following the intervention phase. Allday and colleagues (2012) presented substantial changes in the use of BSP (based on a calculation of the percent change) with the four teachers demonstrating a percent change from 59% to 642% between baseline and intervention. The teacher participating in Van de Mars' (1989) study also demonstrated improvement with a baseline average of .4 to an intervention average of 1.06. Duchaine et al. (2011) demonstrated increases in BSP from baseline to maintenance with teacher 1 demonstrating 0 BSP in baseline, a mean of 9.7 BSP in intervention, and a mean of 9 BSP in maintenance. The remaining two teachers demonstrated a very similar pattern. Similar improvements were shown by Hawkins & Heflin (2011), all three teachers demonstrated less than 1 BSP per minute (Range: .3-.9) during baseline, increased to an average rate of 3.5 BSP

during the first intervention (Range: 2.4-5.8), decreased to a mean rate of 1.3 during withdrawal, and increased to a mean rate of 5.6 during second intervention (Range: 5.2-6). Reinke et al. (2007) also followed a withdrawal design with the average rate of BSP during the first intervention at .71 for the four teachers (Range: .40- 1.15) and almost doubling during the second intervention to a mean rate of 1.37 (Range: .84-1.78). Unlike the other researchers who used continuous variables, Myers and colleagues (2011) presented the results as a ratio of positive to negative statements. Two of the teachers demonstrated low variable ratios during baseline (Range: 1:1.8 – 1:2.2) to Tier 2 (4.5:1- 5.9:1), so they were placed into Tier 3 where the number of positives greatly increased (6.6 and 8.3) and the number of negatives decreased to 1 or 0. The other two teachers demonstrated higher rates of praise during baseline (2.7:1 & 10.2:1), so only entered Tier 2 where their rates of praise continued to increase.

Researchers measuring teachers' demonstration of negative statements or reprimands used either continuous forms of measurement (6, 9, 14) or discontinuous (7). As discussed above Myers et al. (2011) presented teachers' use of negative statements as part of a positive to negative ratio. During baseline, teachers ranged from an average of 1 negative statement to 2.2 negative statements in an observation, but decreased the average number of negative statements to 0 for teachers 2 and 3 and 1 for teachers 1 and 4 during the Tier 2 intervention. Reinke and colleagues (2008) noted decreases in reprimands by all four teachers from baseline to intervention, with the greatest change demonstrated by teacher 3 who averaged 1.6 reprimands per minute during baseline and decreased to .68 during intervention with feedback. A similar pattern was shown by the other three teachers in the difference between baseline and intervention, with teacher 1 using .38 reprimands per minute on average during baseline and .33 during intervention with feedback, teacher 2 showed a mean of .79 reprimands per minute during

baseline, declining to .58 during intervention, and finally teacher 4 demonstrating an average of .3 reprimands per minute during baseline and a mean of .13 reprimands per minute during intervention with feedback. The results presented by Sutherland and colleagues (2001) differed slightly because the study was a group design approach instead of a multiple-baseline design. The treatment group demonstrated a decline in the average number of reprimands between pre-treatment (M=0.429) and maintenance (M=0.187); whereas, the non-treatment group showed only a slight decrease in the number of reprimands from pre-treatment (M= 0.369) and maintenance (M= 0.333). Pisacreta and colleagues (2011) demonstrated that the teachers in their study did not decrease the number reprimands, but increased the number of specific praise statements thereby improving their overall ratio. All three teachers maintained an average of 1 reprimand per interval. The remaining studies only assessed for general praise and/ or BSP using either self-monitoring techniques or discontinuous observation.

The researchers using self-monitoring methods of data recording demonstrated increases in both general praise (Kalis et al., 2007) and BSP; however, the results were not as robust as the results from continuous observation. Kalis and colleagues (2007) reported a study with one teacher performing self-monitoring on the frequency of praise and BSP given during 45-minute class periods. The teacher demonstrated an average of 1.75 general praise statements in baseline, an average of 21 in intervention, and an average of 23 in maintenance. The teacher did not demonstrate any BSP in baseline, but increased to an average of 4.43 in intervention and 6 in maintenance. The results offered by Chalk and Bizo (2004), as well as, Simonsen et al. (2013) also show improvement but the results given are from shorter observation periods than that of Kalis and colleagues (2007). Chalk & Bizo (2004) presented results from 15 minute observations and those of Simonsen et al., (2013) were given in rate per minute. The four teachers who

participated in Chalk and Bizo's (2004) study demonstrated an average of 25 BPS (Range: 18-42) during baseline and an average of 36 BSP (Range: 30-50) post-intervention. The five teachers who participated in the study performed by Simonsen et al. (2013) showed few changes in the amount of praise from baseline to maintenance with a mean of .55 BSP per minute during baseline, .61 during intervention, and .60 in maintenance.

The researchers using discontinuous methods of observation presented varied results, similar to the variability in the duration of the intervals. Pisacreta et al. (2011) performed 15 second interval recording, as noted above, and demonstrated a mean ratio of .05:1, BSP to negatives or reprimands (Range: 0:1 - .1:1) in baseline, a mean ratio of 1.4:1 (Range: 1.1:1 – 1.9:1) during intervention, and 1.3:1 (Range: 1.1:1 – 1.2:1) during the feedback phase. Reinke and colleagues (2007), as well as, Simonsen and colleagues (2010) performed studies using 10 second intervals and demonstrated similar progression in teacher use of general praise and BSP. Reinke et al. (2007) presented low variable rates of BSP for all teachers in baseline (Range: 1.25-5.27), with consistent increases for all three teachers during the performance feedback intervention (Range: 8.71 – 17.91). The teachers participating in Simonsen et al.'s (2010) study showed a mean percent change of 4.7 in intervention and a 14.9 percent change during performance feedback from baseline. Speidel and Tharp (1978) along with Sutherland et al. (2000) performed one minute interval recording for all phases of the study demonstrating increases in BSP from baseline to post-intervention for all teachers. Speidel and Tharp (1978) presented a mean of 3.77 BSP during baseline for all participants, increasing to a mean of 13.63 following intervention, and a mean of 12 BSP in follow-up. The teacher participants in Sutherland and colleagues' (2000) study demonstrated similar patterns with a mean of 1.3 BSP during baseline, 6.7 in first intervention, 1.7 during withdrawal, and increasing back up to 7.8 in

the reintroduction of the intervention. Each of the studies showed improvement in teacher use of BSP; however, the range and variability in measurement, as well as, the methodological issues with operationally defining the dependent and independent variables creates questions about the reliability of the data (Horner et al., 2005).

2.4.2 Student Measures

The researchers who collected student outcome data measured on-task behavior (1, 2, 3, 6, 13), off-task behavior (1, 6, 15), or disruptive behavior (6, 7, 8, 9) to determine the impact of the intervention on student behavior. Researchers chose both different student behaviors and different forms of measurement to assess the effectiveness of the intervention. Despite the variation in definitions and methods of measurement, the results pertaining to student behavior showed similar patterns.

On-task behavior consists of multiple behaviors demonstrated by students including actively listening to teacher, appropriately oriented in seat, following instructions, responding to questions, and working on given assignments (1, 3, 13). The above definition was also used by Myers et al. (2011); however, the behavior was termed engagement, instead of on-task. Allday and colleagues (2012) also included seeking help appropriately in their definition of on-task behavior. Chalk and Bizo (2004), who also measured on-task behavior, did not describe the behaviors or actions they looked for during observations to denote that students were on-task. A few researchers chose to measure off-task behavior (1, 6) in addition to on-task behavior, while one researcher (15) measured only off-task behavior. Allday and colleagues (2012) defined off-task behavior as any behavior that was not encompassed by their on-task behavior definition. Both Van de Mars (1989) and Myers et al. (2012) offered similar descriptions of off-task

behaviors consisting of engaging in any activity other than the one designated by the teacher, not following directions given by the teacher, not following class rules, and not orienting their body in the appropriate direction. In addition, to the description of the behaviors Myers and colleagues (2011) included time parameters on the behaviors, for instance, "not participating for at least 5s of a 10s interval in an activity as directed by the teacher" (p. 41). The final student behavior, disruptive behavior, which was observed by one group of researchers (Myers et al., 2011) in addition to on-task and off-task behavior and as a single measure of student behavior for the remaining researchers (7, 8, 9) was defined as a behavior that interfered with or interrupted learning, did not align with classroom expectations, or was inappropriate for the ongoing classroom activity. The researchers of each study chose varying methods to measure these behaviors and often chose methods different from the one used to measure teacher behavior.

To measure student behavior, researchers either collected data simultaneously with teacher data using momentary time sampling (1, 3, 6, 7), alternated observing teacher and students in different sessions using interval recording (2, 13, 15), split the observation sessions in half by observing teachers for the first part and students for the second using partial-interval recording (8), or performed independent observations for both teacher behavior and student behavior using a frequency count (9). The researchers using momentary time-sampling followed different observation methods. For instance, Allday and colleagues (2012) used 10 second intervals alternating between the designated students, while Myers et al. (2011) measured student and teacher behavior simultaneously during the interval. The other researchers utilized 15 second (7) and one-minute intervals (3) respectively, simultaneously tracking both teacher and student behavior. The researchers measuring by session broke the classroom into quadrants and observed the students in a particular quadrant for the duration of the interval and then moved

onto the next quadrant (2, 13, 15). They rotated through the various quadrants until the observation time was complete. The variations in measurement were often a result of how students were selected for the study.

Students were either chosen at random for observation (2, 6, 7, 8, 14) or particular students were chosen prior to the start of the study by a researcher or teacher to be observed for the duration of the study (1, 9, 13,15). Researchers who selected particular students often picked students who qualified as EBD (1, 5, 10, 13.14) or demonstrated a greater amount of disruptive behavior than their peers (7, 8).

The results all demonstrated that student outcome measures coincided with improvements in teacher use of BSP. The data collection procedure did not appear to impact the relationship between teacher use of BSP and student outcome measures. All research showed an improvement in teacher use of BSP with a decrease in disruptive behavior (6, 7, 8, 9, 15) or an increase in on-task behavior (1, 2, 4, 13, 14). These summary statements may be too definitive, however, because teacher behaviors and student behaviors were often measured in different manners, for instance, the researcher used a continuous method of measurement for teacher behaviors and a discontinuous method, like interval recording, for student behaviors.

2.5 SUMMARY OF FINDINGS

The 15 studies reviewed above offered a range of methodological approaches both in study design and measurement of the independent and dependent variables. The variability in the methodological components of the studies affected the quality, reliability, and overall outcomes of the research (Horner et al., 2005; Odom, Brantlinger, Gersten, Horner, Thompson,

& Harris, 2005). In the selection of various methodological approaches the researchers also specified for whom the practice was effective and in what context (Odom et al., 2005). The contexts of the studies ranged considerably leaving gaps in the literature base, preventing generalization of the effectiveness of the practice. The settings included alternative or self-contained classrooms (4, 5, 10, 13, 14), inclusive elementary classrooms (1, 2, 8, 9, 12, 15), inclusive middle school classrooms (6, 7), inclusive high school classrooms (3), or both middle and high school classrooms (11). The participants consisted of 20 general education teachers (1, 3, 6, 7, 8, 9, 11, 15) and 11 special education teachers (3, 5, 6, 10, 11, 13), and 14 unknown teachers (2, 8, 12, 14). The outcomes of these studies cannot be generalized beyond the context and participants, leaving a gap for inclusive secondary settings with general education teachers, as only two studies addressed a secondary context with general education teachers (3, 7) and one study addressed both a secondary inclusive setting (11), as well as an elementary setting. It is important to note that these two studies did not focus exclusively on general education teachers.

Other methodological decisions, such as the descriptions of the intervention, impact the overall quality of the research reviewed. As discussed earlier, a number of the researchers neglected to operationally define their independent variable (2, 5, 8, 13, 15) which is a requirement for replication. These researchers also failed to ensure that the independent variable was actively manipulated - a key component of quality in single-subject research (Horner et al., 2005). Lack of an operational definition of the interventions creates concerns about how information about BSP was disseminated to the teacher participants and the tool or training manipulative that was used to impart this information. This issue creates questions about quality.

There were also concerns about the dependent variables and how they were measured. Horner and colleagues (2005) describe the need for the dependent variable or observed behavior

to be measured continuously. Many of the researchers chose discontinuous forms of measurement for their dependent variables (1, 2, 3, 7, 8, 10, 12, 13), impacting the quality of the study as well as the reliability of the findings, which will be addressed in more detail in the coming section (Rapp, Caroll, Strangeland, Swanson, & Higgins, 2011). In addition, some researchers measured teacher dependent measures with one form of measurement and student measures with another (1, 2, 3, 6, 7, 8). Reinke and colleagues (2008) were the only group to measure both teacher and student variables using continuous forms of measurement.

The discrepancies in the measurement led to concerns about the outcomes. Not only were there inconsistencies in measurement, which made interpretation of outcomes difficult, but data were also altered into forms such as percent change (1, 13). The use of percent change veers away from the recommended mean or effect size, in addition to visual analysis, to document the functional relationship and demonstrate an effect (Horner et al., 2005; Johnston & Pennypacker, 2009). As the form of measurement has the ability to impact reliability of the outcomes, so does manipulation of the data. Questions regarding both quality and reliability inevitably lead to concerns about the documented effects of the intervention.

If methodological issues appear throughout the literature in different aspects of the study design, it is difficult to conclude that BSP is an effective classroom strategy, despite the positive outcomes. The brief review of each of these components highlights the current issues within this literature base and the methodological areas that need to be addressed to be able to document BSP as an effective intervention for the inclusive classroom.

2.6 DISCUSSION

The expectations of high-stakes testing and teacher accountability that are being enforced by both state and federal government requires an additional focus on student achievement by the classroom teacher (Plank & Condliffe, 2013). In order for teachers to maintain this focus, they first need the ability to manage student behavior and maintain on-task and engaged students (Oliver & Reschly, 2007). Behavior specific praise (BSP) offers a classroom strategy that can improve student-teacher interaction and decrease disruptive behavior, thereby increasing instructional time leading to additional opportunities for both academic behaviors and academic gains (Freiberg, 2002). Authors of the reviewed research demonstrate that BSP has the potential to be a viable strategy for improving a teacher's management of the inclusive classroom and increasing student-teacher positive interactions. The studies discussed assess various attributes of a BSP intervention and offer a blueprint for the components needed in future research. The variations in the participants, instructional components, feedback, and outcome measures need to be addressed to assist in the development of these future studies. Assessing the various components of the methodology in the current research body helps determine which aspects of the interventions have been effective, where the gaps in the literature exist, and how further research may add to the current body to improve generalization of BSP as an effective classroom strategy (Oliver & Reschly, 2007). Inevitably, the analysis of the components discussed above will lead to the development of a comprehensive classroom management strategy that will assist secondary general education teachers in managing the inclusive setting and the demands of teacher accountability systems, an area the current literature has not fully addressed.

2.6.1 Settings and Participants

The use of behavior specific praise (BSP) as a classroom management strategy ranged in focus from self-contained classrooms with students primarily diagnosed with EBD to general education inclusive classrooms (3 & 4). The body of research includes both special and general education classrooms at the secondary and elementary level, as well as inclusive classrooms across grade levels. The difficulty with the current literature is that there has been very little replication of either participant characteristics or setting characteristics. Demonstrating effectiveness of BSP in multiple settings is beneficial; however, showing replication in a single setting may also increase the power of the findings. With the recent increase in inclusion due to NCLB (2001) and IDEA (2004), additional research performed in the inclusive classroom with a focus on general educators is pertinent.

The variability in participants mirrored the variability in settings. The research included general education, special education, co-teaching, and a combination of both. The pre-service training received by special educators included a much different curriculum from that of general educators (Russell & Russell, 2011). A difference in training leads to different skill sets. Special educators often receive at least one, if not more, courses on behavior management and may receive strategies specific to disability categories (Oliver & Reschly, 2007). Elementary general education teachers often receive an array of courses that contain components focusing on behavior management; secondary general educators often receive no such coursework on classroom management (Holdheide & Reschly, 2008). However, with the increase in inclusion and the added focus on at-risk students due to NCLB and accountability systems, secondary general education teachers are working in environments where behavior management is needed in order to meet the instructional demands (Plank & Condliffe, 2013). Only three of the studies

discussed earlier were performed in a secondary inclusive classroom setting and only 6 of the 11 teacher participants were general education teachers (3, 7, 11). None of the researchers focused solely on general education teacher participants in a secondary inclusive setting. The lack of behavior management training in general education teacher preparatory programs, combined with the new dynamic of an inclusive setting and the pressures of teacher accountability creates the need for BSP interventions to be measured in a group of secondary general education participants (Holdheide & Reschly, 2008).

2.6.2 Intervention Components

The components of the instructional intervention for teachers varied greatly in the duration, content, and mode of delivering the information, but most notably in the description of the training included in the article. In order for BSP interventions to successfully assist secondary general education teachers, the intervention needs to be explicit in its description, feasible in duration, allow for practice of content, and be palatable for the teachers (Odom et al., 2005; Oliver & Reschly, 2007).

2.6.2.1 Training Description

The lack of description in six of the studies (2, 5, 7, 11, 13, 15) prevents replication of the training protocol by other researchers. As Horner et al. (2005) explains when determining the quality of a study, the independent variable should be described with replicable precision. The teacher interventions presented in each study are designed for use in classrooms, so each component of the training should be clearly delineated for future use by other education professionals, especially duration or time spent training each teacher. The inclusion of duration

is extremely important in teacher interventions because teachers have limited time available to participate in trainings outside of their normal schedule (Desimone, 2011). This being said, Desimone (2011) goes on to recommend professional development that consists of more than 20 hours across a semester, with the majority of these hours spent on reviewing implementation and receiving feedback on implementation, and the initial conceptual training compiling the least number of the hours. The recommendations for review and feedback lead to another major component of the BSP interventions: the feedback protocols.

2.6.2.2 Feedback

As described above, feedback became an integral part of the post-training phase of the interventions within this body of literature. Literature on feedback recommends that the feedback protocol clarify good performance, facilitate self-assessment, and encourage dialogue between the participant and researcher in relation to the intervention (Nicol & Macfarlane-Dick, 2006). In addition, the implementation of feedback, specifically performance feedback, improves participant use of the intervention (Noell, Witt, Gilbertson, Ranier, & Freeland, 1997). Performance feedback within this body of literature included a range of protocols from visual performance feedback (VPF; 8, 11) to visual self-modeling (VSF; 4) to merely written or oral feedback on performance of the intervention offered by the researcher (5, 6). All feedback protocols and modes of feedback attempted to increase use of the intervention and maintain that use, as discussed by Noell et al. (1997) with such a variety of approaches to feedback, it is difficult to determine the most effective way to administer feedback to the teachers.

The lack of consistency in protocols leads to a need for streamlining feedback protocols and performing replication. The use of visual performance feedback appears to be an effective practice as demonstrated by Hawkins & Heflin (2011) and Reinke et al. (2007); however, these

two studies do not use VPF in the same way. Duchaine et al. (2011) follow a similar feedback protocol as Hawkins & Heflin (2011) with the exception of a visual component and still demonstrate an increase in use of the intervention into the maintenance phase. An extension of visual performance feedback is video performance feedback, which offers teachers the ability to view themselves carrying out the targeted behaviors. One primary benefit of extending the current VPF to include video is research on video feedback has demonstrated that it generates more frequent use of the behavior being displayed (Fukkink, Trienekens, & Kramer, 2011). The impact of video feedback in increasing targeted behaviors improves considerably when the desired behaviors are reviewed as part of a larger training program. One explanation for increases in the targeted behaviors is that the initial training focuses the attention of the participants on the aspects of their behavior central to the program (Zhang, Lundenberg, Koehler, & Eberhardt, 2011). Including video feedback in future BSP intervention protocols may improve the frequency of the behaviors, as well as the time spent on review of implementation (as recommended by Desimone, 2011).

2.6.3 Outcome Measures

The results of the research discussed throughout the paper were overwhelmingly positive. However, determining the degree of improvement is difficult due to the variation in presentation of results and measurement procedures, as well as differences in measured variables. The use of ratios or rates by some researchers and frequency or interval recording by others, makes comparing results and determining the extent of improvement demonstrated by a participant problematic. Participants in certain studies appeared to perform better than participants in other studies, but one study may have presented continuous data, while another study opted for either a

discontinuous or self-monitoring method of measurement. For instance, Pisacreta and colleagues (2011) performed 15 second partial-interval recording, a discontinuous method of measurement and only reported average ratios of positives to negatives for each teacher in each phase; versus, continuous recording as demonstrated by Duchaine et al. (2011) who reported the average frequency of each 15 minute observation session for every teacher. Each method has limitations in relation to accuracy and reliability. Johnston and Pennypacker (2009) describe accuracy as the ability of the measurement technique to approximate the true value; whereas, reliability refers to the extent the measurement technique offers the same value when repeated in natural contexts. Rapp and colleagues (2011) recently reviewed the accuracy and reliability of continuous versus discontinuous methods of measurement and found that partial interval recording (PIR), "failed to detect changes that were evident with continuous duration recording," (p.392). Whereas, combining PIR with momentary time sampling (MTS), another discontinuous method of measurement, increased the recognition of small behavioral changes, the combination also increased the number of false positives in comparison to continuous recording. The results discussed by Rapp and colleagues (2011) call into question the reliability and accuracy of findings from interventions, like Simonsen et al. (2010), where discontinuous methods were used and the researchers only reported percent change of each teacher; rather than reporting more direct measures of behavior, such as frequency. As Rapp and colleagues go on to discuss, the more calculations that change the original observed number, the greater chance for inflation or other obscurity, which decreases both accuracy and reliability. The findings discussed in relation to continuous and discontinuous methods of measurement creates uncertainty about the results of a number of the interventions discussed above, as well as the description of the results when frequency and rate were not offered.

The research consistently demonstrated improvement in teacher use of BSP. Not all teachers were able to maintain the use of BSP after the intervention, but during the intervention BSP levels rose across all studies. The researchers measuring general praise, in addition, to BSP demonstrated increases throughout the intervention. However, the gains made in the use of BSP were greater than those in general praise. While most researchers measured general praise in addition to BSP, a much smaller portion measured negative statements or reprimands in conjunction with positives.

The measurement of negative statements is considered important for determining if teachers interact more positively or more negatively with students. As discussed earlier, student-teacher interactions that are predominantly negative adversely affect achievement (Pianta et al., 2008). Previous research recommends teachers demonstrate a frequency of 4:1 positive to negative statements in a 15 minute observation session to create a positive classroom environment and improve student engagement and achievement (Myers et al., 2012). For these reasons, future research should include measurement of negative teacher statements as well as positive teacher statements, but report both frequency and ratio data.

2.6.3.1 Student Measures

The primary separation in the literature with outcome measures existed between the researchers that measured student data and those that did not. Allday et al. (2012) argued that the inevitable goal of a teacher intervention is to improve student performance or behavior; therefore, student behavior needs to be measured. Sutherland and Oswald (2005) also support collection of student outcome measures by stressing that research methods must capture the bidirectional influences represented in student and teacher interactions. In contrast, Hawkins &

Heflin (2011) argued that measuring student behavior before determining the overall effectiveness of the teacher intervention was unnecessary.

The disagreement regarding student outcomes measures extended into how student behavior was measured. Some researchers chose to measure individual students (5, 7-8), while others chose to measure the entire class by randomly selecting individual students (3), and others chose to measure both (1). The change in student behavior was inconsistent across the studies that measured for this variable. Whether researchers measured on-task behavior or disruptive behavior; the results still varied, unlike the results of the teacher interventions, which were consistently positive. As discussed by Sutherland and Oswald (2005), the variation in student behavior presents concern about whether the student measures were inadequate or if the interventions were not influencing student behavior as effectively as they were influencing teacher behavior.

An additional difficulty with the measurement of student behavior was the difference in method used from the teachers. Many of the studies measured teacher behavior in one manner and student behavior in another, making it difficult to make direct comparisons within a study. For instance, Allday and colleagues (2012) used direct continuous observation for teachers and partial-interval recording for students. In order to measure students and teachers with the same method, future research should consider student behavior as a group behavior of the classroom. The goal of BSP interventions is to impact the entire classroom not an individual student, so measuring the group behavior would be more appropriate given the focus of intervention (Johnston & Pennypacker, 2009).

2.7 CONCLUSION AND QUESTIONS

Behavior specific praise (BSP) is presented throughout the literature as a potentially effective classroom management intervention that has the ability to increase positive student-teacher interactions and decrease disruptive student behavior thus improving student achievement (Pianta et al, 2008; O'Connor et al., 2011). The 15 studies reviewed ranged in settings and participants, including both special education and general education with a heavy focus on elementary general education teachers. The majority of the studies demonstrated an improvement in teacher use of BSP during intervention with inconsistent results in maintaining that use. Student outcomes followed teacher performance – as teachers improved their use of BSP, students increased on-task behavior and decreased disruptive behavior. However, some methodological issues and gaps in the current literature prevent BSP from meeting the necessary quality indicators to be considered an effective practice (Horner et al., 2005).

Many of the researchers did not describe the BSP intervention to replicable precision nor offer a clear description of the training components used with teachers. The current literature also had a dearth of researchers using continuous forms of measurement to determine the effect of the BSP intervention on both teacher and student outcomes. This issue impacted the quality and reliability of the current findings, creating a need for additional research focusing on the gaps in the literature, particularly with settings and participants, as well as the quality of the study design.

The population most in need of the BSP intervention is secondary general education teachers in the inclusive classroom. None of the researchers in the current body of literature, however, focused an entire study on this particular population (Oliver & Reschly, 2007). As discussed above, there are a number of reasons for pursuing a study with secondary general

educators with the most notable being the greater number of negative student-teacher interactions occurring with this population and the ever changing dynamic of the inclusive secondary classroom (Holdenheide & Reschly, 2008; White, 1975).

In addition to focusing the setting and participants on the secondary inclusive general education classroom, the intervention needs to be described in replicable form and take into account the demands placed on the participants in relation to schedule (Desimone, 2011; Horner et al., 2005). The components of the intervention must be clearly delineated for the participants, as well as future researchers. The intervention should include a brief initial training and rely on a feedback protocol to review and improve implementation. The feedback protocol should contain video feedback to improve the frequency of the target behavior (BSP) and also increase the power of the feedback (Fukkink et al., 2011). Implementing each of these aspects in the intervention should assist participants in maintaining the use of BSP beyond the confines of the study.

In order to further create a replicable study, consistent measurement methods for both teacher and student variables must be considered, as this presented as a limitation in previous literature. Researchers often switched between continuous methods of measurement for teachers and discontinuous methods for student variables. The results of these two methods of measurement produce numbers with different meanings and make comparisons and correlations difficult (Rapp, Carroll, Stangeland, Swanson, & Higgins, 2011). In addition, the researchers in previous literature measured individual students for purposes of the student variable, instead of measuring the entire classroom when the intervention is designed to improve behavior of a classroom of students. The measurement of teacher and student variables should be consistent to continue to improve both quality and accuracy of the literature base, meaning a frequency count

should be used for all measures of teacher and student behavior (Horner et al., 2005). For purposes of a BPS intervention, the student behavior measures should be treated as group behavior to ensure that the impact of the intervention is addressing the whole class.

Each of the components, setting, participant, intervention, and measurement, is a component of the proposed study that will assist in improving the current body of literature surrounding BSP as viable classroom management intervention. The secondary inclusive classroom consists of a population of students and teachers that are often difficult to observe and difficult to change; however, research surrounding NCLB and teacher accountability describe this population as one in need of intervention, particularly in relation to behavior (Dee et al., 2012; Holdheide & Reschly, 2008; Oliver & Reschly, 2007). As the classroom dynamic in the general education setting continues to change, through the demands of legislation and the focus on teacher accountability, conducting research that demonstrates unequivocally that an intervention can produce reliable results is of paramount importance. The proposed study attempts to improve student-teachers interactions, as well as decrease student disruptive behavior through the use of a BSP intervention and video performance feedback. Specific questions include:

1. What is the effect of *Tools for Positive Behavior Change with VPF* on teachers' use of praise statements?
2. What is the effect of *Tools for Positive Behavior Change with VPF* on teachers' use of negative statements?
3. What is the effect of *Tools for Positive Behavior Change with VPF* on the frequency of classroom disruptive behavior?

Table 1. Study Identifying Information

	Study	Setting	Participants	Disability Category of Students
1.	Allday et al., (2012)	2 EIC	4T (Kindergarten , 1st grade, 2nd grade , 6th grade)	2 EBD from every class (2nd grade only had 1 student)
2.	Chalk & Bizo, (2004)	4 EGEC	4 T (ALL 3rd grade)	N/A
3.	Duchaine et al., (2011)	3 SIC	3 T (2 general educators and 1 special educator of 9th grade math)	N/A
4.	Hawkins & Heflin, (2011)	3 SSC	3 T(9th grade)	EBD
5.	Kalis et al., (2007)	1 SSC	1 T (Sped)	EBD
6.	Myers et al., (2011)	4 SSC	4 T (one 5th grade, one 6th grade, two 7th grade)	N/A
7.	Pisacreta et al., (2011)	3 SIC	3 T (6th grade, 7th grade, 8th grade)	15-20students behavior problems
8.	Reinke et al., (2007)	3 EGEC	3 T (3rd grade)	6 students behavior problems
9.	Reinke et al., (2008)	4 EGEC	4 T (one 1st grade, two 2nd grade, one 5th grade)	N/A
10.	Simonsen et al., (2010)	3 SSC	3 T (one ages 11-14, one ages 12-15, one ages 14-18)	EBD, ASD, ID
11.	Simonsen et al., (2013)	3 SIC 2 EGEC	2 T(5th grade), 1T (7th grade), 2T (8th-12th grade)	N/A
12.	Speidel & Tharp, (1978)	6 EGEC	6 T (grades not listed)	N/A
13.	Sutherland et al., (2000)	1 ESC	1 T (5th grade)	EBD
14.	Sutherland et al., (2001)	20 ESC	20T (stratified by grade)	EBD
15.	Van de Mars, (1989)	1 EGEC	1 T(2nd grade)	N/A

Note. EIC (Elementary Inclusive Classroom), EGEC (Elementary General Education Classroom), SIC (Secondary Inclusive Classroom), SSC (Secondary Self-contained Classroom), ESC (Elementary Self-contained Classroom); T (Teachers), Sped (special education); EBD (Emotional Behavioral Disorders), ASD (Autism Spectrum Disorder, ID (Intellectual Disability)

3.0 METHODS

The purpose of the study was to determine the effect of video performance feedback (VPF) on teachers' maintained use of the *Tools for Positive Behavior Change* intervention, specifically the teachers' ability to change their use of praise and negative statements. The VPF took the form of daily feedback including video clips demonstrating teachers' correct use of components of the training, as well as clips demonstrating improper classroom management techniques. This video feedback was augmented by a written summary that focused on the same behaviors provided in the video. To determine the possible impact of the change in teacher behavior on student behavior, classroom disruptive behavior was also measured for comparison.

3.1 SETTING AND PARTICIPANTS

A public secondary school in an urban area near a large city in the Northeast United States served as the setting for the study. On average 72% of the school's students receive Free and Reduced Priced Lunch. The school has adopted a full inclusion special education service delivery model with co-teaching provided in some math and English classes. Following IRB approval, the principal of the school sent out an email regarding the study to all secondary content area teachers in the building and inviting them to an information session on the study (Figure 1). The experimenter approached the first, five teachers to attend the information

Figure 1. IRB Approval Letter

University of Pittsburgh

Institutional Review Board

3500 Fifth Avenue
Pittsburgh, PA 15213
(412) 383-1480
(412) 383-1508 (fax)
http://www.irb.pitt.edu

Memorandum

To: Jesse Dvorchak

From: IRB Office

Date: 9/9/2014

IRB#: PRO14090088

Subject: Improving Secondary Teachers' Classroom Management in the Inclusive Classroom

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The above-referenced project has been reviewed by the Institutional Review Board. Based on the information provided, this project meets all the necessary criteria for an exemption, and is hereby designated as "exempt" under section
45 CFR 46.101(b)(1).

Please note the following information:

- Investigators should consult with the IRB whenever questions arise about whether planned changes to an exempt study might alter the exempt status. Use the "**Send Comments to IRB Staff**" link displayed on study workspace to request a review to ensure it continues to meet the exempt category.
- It is important to close your study when finished by using the "**Study Completed**" link displayed on the study workspace.
- Exempt studies will be archived after 3 years unless you choose to extend the study. If your study is archived, you can continue conducting research activities as the IRB has made the determination that your project met one of the required exempt categories. The only caveat is that no changes can be made to the application. If a change is needed, you will need to submit a NEW Exempt application.

Please be advised that your research study may be audited periodically by the University of Pittsburgh Research Conduct and Compliance Office.

session; each agreed to participate. It is important to note that the administration implemented Positive Behavioral Support throughout the school last year with all teachers and students without success, so the program was removed this year. The administration did not select a school wide behavioral intervention to replace PBS and the teachers within the study did not implement behavioral interventions within their individual classrooms.

The participants were five general education teachers: two math teachers, one English teacher, one science teacher, and one history teacher. The participants taught grades six through eight with a few of the teachers having classes in multiple grade levels (Table 2). All classrooms had 21-27 students with 3-6 having an IEP. Each class had different groups of students; however, a few students overlapped within the eighth grade classes. Observations occurred via video recording in each individual teacher's classroom during a variety of instructional activities. Additionally, a one-hour in-person professional development session took place within each teacher's classroom.

Table 2. Teacher & Classroom Demographics

Name	*Gender*	*Race*	*Content Area*	*Grade*	*Yrs Experience/ Degree*	*# Students*	*# IEP Students*
Davis	Male	Caucasian	History	8	6/ Bachelors	27	5
Kate	Female	Caucasian	English	8	9/ Masters	21	3
Rover	Male	Caucasian	Science	6 & 7	7/ Bachelors	26	3
Rita	Female	Caucasian	Math	7	7/ Masters	22	6
Moss	Female	Caucasian	Math	8	8/ Masters	21	6

Note. Classroom data is based on the class period observed for the study.

3.2 MATERIALS

The intervention originated from a 30-hour parent/caregiver training program, entitled *Parenting Tools for Positive Behavior Change*, created by the Behavior Analysis Services Program with Florida Department of Children and Families (2005). A modified curriculum incorporated four of the nine original 'tools' (avoid coercion, stay close, give positive consequences/ praise, and pivot) delivered across three, 20-minute, narrated PowerPoint slide shows (discussed in detail below) disseminated via each teacher's Pitt Box account. Additional materials included video cameras and memory cards, as well as data collection sheets to record praise statements, negative statements, and classroom disruptive behavior and the assessments for each PowerPoint.

3.3 DEPENDENT VARIABLES

The three dependent variables consisted of two teacher behaviors (praise statements, both general and behavior specific, and negative statements) and one classroom behavior (disruptive behavior). Behavior specific praise was included in the overall number of praise statements to allow for a wider interpretation of praise (Blaze, Olmi, Mercer, Durfrene, & Tingston, 2014). All behaviors were measured continuously using a frequency count during a 15-minute observations drawn from a larger 45-minute video. A random number generator based on the number of seconds in 30-minutes was used to select the second within the video that the observation would start. This meant the researcher unlikely viewed the same 15-minutes within

the video for any teacher. Randomizing the 15-minute observation helped to control for activity type within the classroom.

3.3.1 General and Behavior Specific Praise Statements

Praise statements constituted contingent verbal praise given by the teacher that does not specify the behavior for which the student is being praised (Hawkins & Heflin, 2011). Examples of positive statements that do not reference behavior include, "That's excellent" or "Nice job." Praise statements do not include directive statements; such as, "Finish your work" or "Put your pencil down." Behavior specific praise (BSP) statements constituted contingent verbal praise given by the teacher that specified the behavior for which the student is being praised (Hawkins & Heflin, 2011). Examples of behavior specific praise include, "Jamie you did a great job on writing your introductory paragraph" or "Good job, Thomas, showing all of the steps to the problem." Again, BSP statements did not include directive statements; such as, "Finish your work" or "Put your pencil down."

3.3.2 Negative Statements

Negative statements demonstrated criticism or verbal disapproval by the teacher and included the eight coercive traps: logic lecture, sarcasm, arguing, questioning, pleading/despair, force, threat, and criticism (Hawkins & Heflin, 2011; Latham, 1998). A description of the coercive traps can be found in Table 3. These negative statements did not include corrective feedback like "You need to open your math book instead of reading your book." Examples of the

negative statements include, “Stop talking,” “You are acting inappropriately” or “I am not going to ask you again.”

Table 3. Coercive Traps

1.	*Force* refers to the use of physical contact or threat of physical contact to make a student stop or carry-out a particular behavior. **Example:** Teacher grabs a student by the shoulder and pushes them into his seat.
2.	*Logic lecture* focuses on the use of verbal directives, such as reasoning or conventional wisdom to explain inappropriate behavior. **Example:** Teacher says to a student about an assignment, “I can’t read your mind. I can’t possibly know what’s going on in your head or how much you know unless you complete these assignments.”
3.	*Sarcasm* is the use of biting or cutting statements by the instructor about a student or the student’s behavior. **Example:** Teacher says to her class, “My goodness, you all have the attention span of fruit flies today!”
4.	*Questioning* is the use of rhetorical questions to demonstrate inappropriate behavior from a student. **Example:** Teacher says, “how many times do I have to tell you?”
5.	*Despair* is the use of pleading to convince students to perform or stop a particular behavior. **Example:** Teacher says “I just don’t know what to do with you. Nothing I say makes any difference at all.”
6.	*Threats* are verbal statements that express a negative consequence for an inappropriate behavior, if student does not stop the behavior. **Example:** Teacher says “if you students do not sit down right now I am going to call your parents.”
7.	*Arguing* is negative verbal interaction between a teacher and student, where the teacher is trying to stop an inappropriate behavior. **Example:** Teacher says, “You need to sit down.” The student responds, “why?” Teacher continues dialogue by stating, “because I said so” and verbal sparring continues.
8.	*Criticism* is the use of negative or derogatory statements by a teacher toward student’s behavior. **Example:** Teacher says “Johnny you have such a big mouth; you need to be quiet.”

*Summarized from Stoutmire, Williams, Neff, & Foster, (2008) and Latham (1998).

3.3.3 Disruptive Behavior

Disruptive behavior was observed as a group behavior, meaning all students within the classroom were observed at the same time. Disruptive behavior is a behavior that interferes with or interrupts learning of either a student or the teacher, does not align with classroom expectations, or is inappropriate for the ongoing classroom activity (Myers et al., 2011). The actual observed behaviors were determined following initial observations of the classrooms

where the researcher identified the disruptive behaviors in the five classrooms. By performing trial observations to determine observed behaviors, the researcher was able to identify disruptive behaviors specific to the classroom and create precise target behavior definitions that are more accurate (Smith, Lambert, & Moore, 2013). The following behaviors were seen in all five classrooms: calling out, touching other students, and shouting. In Davis' classroom arguing with the teacher, laughing, and clapping were also added to the list of disruptive behaviors. The remaining two behaviors coded as disruptive came from Moss' classroom and consisted of passing notes to other students and putting head on the desk. The eleven behaviors coded as disruptive allowed for a more encompassing definition of disruption to more accurately depict the student behavior in each of the five classrooms (Smith et al., 2013).

3.4 INDEPENDENT VARIABLE

The intervention originated from a 30-hour parent/caregiver training program, entitled *Parenting Tools for Positive Behavior Change*, created by the Behavior Analysis Services Program with Florida Department of Children and Families (2005). The curriculum incorporates fundamental pieces of Latham's (1994) *The Power of Positive Parenting* and consists of nine 'tools'(Table 4). The intervention contained the first four original 'tools' (i.e., avoid coercion, stay close, give positive consequences/ praise, and pivot) which serve as the bedrock for the remaining five. Three, 20-minute PowerPoint presentations with narration highlighted how all four 'tools' can improve the amount and quality of praise statements in the classroom while decreasing negative statements. The PowerPoints move through a series: a) identifying and decreasing negative statements, b) reinforcing appropriate behavior through BSP, and c) learning

to stay close and develop rapport with students. While viewing the PowerPoints, the teacher was expected to complete the assessment worksheet (Appendix A-C) accompanying each PowerPoint to verify understanding. Once viewed, each teacher received an additional one-hour in-person training session. The researcher role-played with the teacher to demonstrate specific examples of BSP, as well as, showing the teacher previously recorded clips from baseline that illustrated coercive traps and examples of BSP.

The initial PowerPoint focused on the different types of negative statements that a teacher may use. In particular the PowerPoint covers the eight coercive interactive 'traps' (Latham, 1998). Teachers can use these traps to try to extinguish behavior, but that inevitably leads to more negative behavior demonstrated by both the student and the teacher. The PowerPoint explains how responses to students using one of the traps listed above becomes a repetitive, potentially destructive process.

The second PowerPoint explained how teachers can reinforce students' positive and appropriate behavior through the use of praise, BSP, and 'pivot' away from minor, inappropriate behavior (i.e., "junk" behavior) and examples of each. Teachers learned to identify students demonstrating appropriate behavior using praise statements like "Great job taking out your book, John." They also learned to "pivot" away from the "junk" behavior to pay attention, instead, to the appropriate behavior demonstrated by another student. In the process of pivoting away from negative behavior, the teacher uses BSP to recognize proper behavior being demonstrated by another student within the classroom. The teachers were taught to reinforce the appropriate behavior of one student through BSP and ignore the inappropriate behavior of another student. Recognizing appropriate behavior has positive effects on both the student displaying 'junk' and

the student receiving praise. Once the student ceases 'junk' behavior, the teacher received instruction to attend to the next appropriate behavior.

The third PowerPoint focused on the need for teachers to 'stay close' or be attentive to students. The PowerPoint explains how teachers can create a safe, positive environment and establish themselves as a source of caring, empathy, and positive consequence by listening to students and showing they care (Stoutimore et al, 2008). The use of 'stay close' can increase opportunities for BSP as well as the value of positive teacher attention for the student and decrease the likelihood of future negative behavior.

In addition to the three PowerPoints, the teachers met for one-hour with the researcher to review the information conveyed in the PowerPoints and view examples of coercive behavior from baseline, as well as, role play. The research answered any questions the teacher had about the training. The teacher viewed four video clips, three demonstrating the teacher using various coercive traps during baseline and one demonstrating a teacher, from a previous study, using BSP. During this meeting, the researcher also performed two examples of role playing with the teacher.

Following the training, teachers received daily email feedback with video clips to support the email feedback. The video clips were labeled each day and posted onto the teacher's Pitt Box account, so the researcher could be certain that the clips had been viewed and track the teacher's viewing. The feedback was based on video coding and contained four recommendations: two in areas of training the teacher performed correctly and two in areas in need of improvement. The email feedback always referred back to the PowerPoints and the overall training. There were three to four short video clips that correspond to the points addressed in the email. The email contained a web link to the video clips, which were uploaded

to the teacher's password protected account on Pitt Box. The teacher received this feedback for the duration of the intervention. The teacher was asked to respond to the feedback email to demonstrate receipt and the researcher also tracked each teacher's observation of the video clips through Box. Teachers were able to return to their feedback folder at any time. Many of the teachers also used the messaging feature on Pitt Box to ask questions and make comments pertaining to the feedback and video clips.

Table 4. Nine Tools

Tool	Description
Stay Close	• Uses non-contingent reinforcement to establish the teacher as a conditioned positive reinforcer • Specific steps include: speaking in a non-threatening manner to the student, asking open—ended questions, and using empathy statements while ignoring inappropriate behavior
Stop/Redirect	• Requires the teacher to stop a behavior and redirect to a different behavior while providing a positive consequence for the appropriate redirected behavior
Avoid Coercion	• Avoiding coercion minimizes negative interactions used by caregivers or teachers to manipulate children in ceasing an action or performing that action
Ignore Junk Behavior and Pivot	• Ignoring junk behavior requires teachers to decrease attention to inappropriate, but non-harmful behavior • The teacher delivers positive reinforcement when a student demonstrates appropriate behavior following the occurrence of undesirable behavior and/or provides positive reinforcement for appropriate behavior demonstrated by another student, subsequently giving the student an example of the type of behavior expected and reinforcing that behavior when demonstrated
Give Positive Consequences/ Praise	• Requires the teacher to stop a behavior and redirect to a different behavior while providing a positive consequence for the appropriate redirected behavior • Offer positive reinforcement, through the use of behavior specific praise, to increase the probability of future use of the desirable behavior by the student
Set Expectations	• The teacher clearly dictates to the students the expected behaviors and the reinforcement that is earned for demonstrating the expected behaviors
Use Contracts	• Is a contract between the student and the teacher that dictates expected behaviors that are more complex or not understood by the student in the "Set Expectations" • The contract also clearly delineates more delayed consequences than could be achieved through the "Set Expectations" tool
Time Out	• Occurs when a child demonstrates inappropriate behavior and the teacher removes the child from the situation for a designated amount of time
ABCs of Behavior	• Teachers are taught to identify the antecedents and consequences occurring in the presence of problem behavior

Note. Referenced Stoutmire et al., 2008.

3.4.1 Design

A multiple baseline across participants in different settings assessed the experimental effects of the intervention (Kennedy, 2005), *Tools for Positive Behavior Change,* on teachers' use of praise and negative statements, as well as classroom disruptive behavior in the secondary inclusive classroom. Teachers remained in baseline for at least five data points. The first teacher to demonstrate stability in praise statements entered intervention, daily observation continued for four remaining teachers. The teachers in intervention were compared to the remaining teachers in baseline. Each teacher remained in intervention with video feedback until stability or ten days is reached. The final phase of the study, maintenance, occurred three to four weeks following the completion of the intervention phase; maintenance data was collected for five days. The five teachers were told when feedback ended, but were unaware of when maintenance observation began. All teachers were videotaped for the time between the end of intervention and the completion of maintenance. Having teachers videoed during the three-four week space prevented them from knowing when they had entered maintenance and which videos were being used for maintenance. The last five days of observation were used for maintenance data.

3.5 PROCEDURES

Five teachers participated in the three phases of the study: baseline, intervention with video feedback, and maintenance. The researcher set-up and oriented the video camera. The teacher and researcher ran three trial observations to be sure the teacher was able to successfully turn on the video camera and that the camera was capturing the entire classroom. During each

phase of the study the teacher was required to turn on the video camera during the same classroom period for a full 45-minute period. The researcher checked the video camera each day and put a new blank memory card into the video camera. Although the observations occurred in different academic content areas, each lesson contained a combination of teacher lecture, interactive discussion, and individual work (Hawkins & Heflin, 2011). Prior to the start of baseline recording, the researcher had the teachers perform three trial recordings. These three trial recordings were used to check that all equipment was working properly, to desensitize the teacher and students to the presence of a recording camera in the classroom, and to determine the most common disruptive behaviors in the five classrooms.

3.5.1 Baseline

Teachers designated one period each day to record themselves for the full 45-minute period. The teacher used the same period for every recording. Daily recordings continued for a minimum of five days or until the teacher demonstrated steady-state responding. Once the first teacher entered intervention, remaining teachers continued to record daily. The next teacher entered intervention when his/her praise statements stabilized and the teacher directly ahead in intervention showed an increasing trend in praise statements. This pattern continued until all teachers had entered intervention. Teachers had limited knowledge of the study parameters during baseline to minimize reactivity.

3.5.2 Intervention with Video Feedback

Once the researcher designated a teacher for intervention, the teacher received all three training PowerPoints and viewed all of them on the day received. These PowerPoints were made available to the teacher via their Pitt Box account, so they can continually refer back to them. After viewing the PowerPoints each teacher completed a worksheet assessing his/her understanding of the material and gave these to the researcher the following day (Appendix A-C). On the day after viewing the PowerPoints, the teacher received a one-hour instructional session reviewing the PowerPoints with samples of behavior from baseline, augmented with role playing. Once in intervention, the teacher video recorded him/herself as in baseline, but received video and written feedback via email for a minimum of 10 sessions or until stabilizing praise statements was reached. As discussed above, the video feedback corresponded with the written feedback, which was sent via email.

3.5.3 Maintenance

Three to four weeks after exiting intervention, the researcher began coding the teacher's videos for maintenance. The time between intervention and maintenance varied because of the two week holiday break in December. While these sessions were scored by the researcher, teachers did not receive feedback (video or written).

3.6 SOCIAL VALIDITY

To measure social validity each of the teachers completed a brief questionnaire pertaining to the procedures and outcomes of the study. The questionnaire consisted of 15 statements that the teacher either agreed or disagreed with by selecting 1-5 on a logarithmic scale (Appendix D). The statements were worded both positively and negatively to be sure that the teacher read the statement. For instance, a positive statement consisted of "I understood the steps of the intervention" versus a negative statement "I found accessing the PPTs online difficult." The teachers completed the questionnaires anonymously and returned them to a research assistant, so the principal investigator would be unaware of which teacher completed the questionnaire.

3.7 INTER-OBSERVER AGREEMENT

A trained doctoral student conducted inter-observer agreement (IOA) for a randomly selected 29 out of 145 observations or 20% of the video recorded observations for all teachers on both teacher interactions and classroom disruptive behavior. The independent observer received training on detecting praise and negative statements, as well as disruptive behaviors by watching previously recorded observations of teachers and comparing her score to the true value of statements from the video. Overall agreement was determined by taking total agreements and dividing by agreements plus disagreements times 100 (Watkins & Pacheco, 2000). The overall average agreement for teacher interactions was 93% for praise statements (range, 86% - 99%) and 94% for negative statements (range, 89% - 97%). The agreement for disruptive behavior was 96% (range, 90% -99%).

3.8 PROCEDURAL INTEGRITY

Four methods determined consistency of intervention implementation as the teachers completed the various components of the intervention. First, each teacher received the same files containing identical narrated PowerPoint trainings. Second, the researcher tracked teacher use of the PowerPoints in two ways. Pitt Box verified each teacher accessed the training materials and assessments provided during the one-on-one meetings, verified viewing, and understanding. Third, all feedback emails contained a read receipt confirming delivery and replies from teachers showed interaction with feedback. Fourth, the teachers used the Pitt Box messaging feature as a way to ask questions regarding the video clips or make comments about their observations of the clips.

4.0 RESULTS

The results sections are organized into four major parts: 1) the frequencies of teacher interactions, 2) standard celeration charts (SCCs) and accompanying measures of teacher behavior, 3) classroom disruptive behavior, and 4) social validity. The frequency of praise statements significantly increased for each of the five teachers from baseline to intervention and baseline to maintenance with a similar pattern presented by negative statements, but with a decline from baseline to intervention and maintenance. The SCCs depict the change in teacher interactions through each of the phases of the study by quantifying trend, level, and variability. The same discussion of level, trend, and variability is presented for disruptive behavior, as well as, a discussion of the significant decrease in the amount of disruptive behavior in each of the classrooms. Finally, individual teachers provided insight into the perceived effects of the intervention.

4.1 FREQUENCY OF TEACHER INTERACTIONS

The following section addresses the frequency and the change in frequency of praise and negative statements for each teacher in each of the three phases of the study: baseline, intervention with feedback, and maintenance.

Table 5. Frequency Praise Statements

	Baseline		*Intervention*			*Maintenance*			
Name	*M*	*SD*	*M*	*SD*	*B-I*	*M*	*SD*	*I-M*	*B-M*
Davis	0.00	0	10.36	5.10	10.36*	8.40	1.14	-1.96	8.40*
Kate	0.00	0	6.63	3.01	6.63*	5.80	1.10	-0.83	5.80*
Rover	0.43	0.76	15.85	4.95	15.42*	10.80	3.56	-4.62	10.37*
Rita	0.71	0.92	11.00	4.57	10.29*	9.00	2.83	-2.00	8.29*
Moss	1.04	0.93	12.10	3.35	11.06*	12.80	4.71	0.70	11.76*

Note. *M* = Mean, *SD* = Standard Deviation, *B-I* = change in frequency from baseline to intervention, *I-M* = change in frequency from intervention to maintenance, *B-M* = change in frequency from baseline to maintenance
* Denotes significant change, $p < .05$, according to Wilcoxon matched pairs, signed ranks test.

4.1.1 Praise

During *baseline*, the mean frequency of praise statements for each of the five teachers ranged from 0 to 1.04 per 15-minute observation (Table 5). Davis and Kate both offered zero praise statements during baseline. Rover, Rita, and Moss were more variable in their frequency of praise, but offered at most three praise statements during baseline with Rover averaging 0.43 praise statements per observation, Rita 0.71, and Moss 1.04.

During *intervention*, the average frequency of praise statements per 15-minute observation increased for each of the teachers with the change in the frequency from baseline to intervention significant for all five teachers, as well. Moss (11.06) and Rover (15.42) showing the greatest change in their use of praise. Davis, Kate, and Rita also presented substantial improvements with the level of change ranging from 6.63 to 10.36 praise statements per observation (Table 5).

The majority of the teachers decreased slightly in their average frequency of praise statements during the *maintenance* phase in comparison to the intervention phase; however, the

change was not significant. The teachers' use of praise statements was still greater than baseline and the difference between teacher praise in maintenance was significantly greater than praise in baseline. Davis and Rita both decreased by 2 instances of praise per observation; whereas, Kate decreased less than one praise statements per observation. Rover showed the largest decline in his use of praise statements (-4.62). In contrast, Moss marginally improved her use of praise statements offering almost one more per observation in maintenance. Overall, each of the teachers still offered significantly more praise in maintenance than baseline, but not significantly more than the number of praise statements in intervention, as supported by the Wilcoxon matched pairs, signed ranks test (Table 5).

4.1.2 Negatives

All five teachers exhibited more negative statements in *baseline* than praise statements. The mean frequency of negative statements per 15-minute observation ranged from 7.72 to 14.53 (Table 6). Rita and Davis demonstrated the highest average frequency of negative statements in baseline at 14.53 and 13.86. Rover averaged slightly less with 13.79; however, Kate and Moss averaged fewer negative statements (Table 6).

Table 6. Frequency of Negative Statements

	Baseline		*Intervention*			*Maintenance*			
Name	*M*	*SD*	*M*	*SD*	*B-I*	*M*	*SD*	*I-M*	*B-M*
Davis	13.86	5.18	3.82	2.93	-10.04*	2.60	1.82	-1.22	-11.26*
Kate	9.45	3.72	1.55	1.44	-7.90*	0.60	0.55	-0.95	-8.85*
Rover	13.79	7.24	3.46	1.61	-10.33*	1.40	1.34	-2.06	-12.39*
Rita	14.53	4.62	3.20	2.53	-11.33*	1.20	1.64	-2.00	-13.33*
Moss	7.72	2.80	1.30	0.95	-6.42*	0.60	0.55	-0.70	-7.12*

Note. *M* = Mean, *SD* = Standard Deviation, *B-I* = change in frequency from baseline to intervention, *I-M* = change in frequency from intervention to maintenance, *B-M* = change in frequency from baseline to maintenance
* Denotes significant change, $p < .05$, according to Wilcoxon matched pairs, signed ranks test.

Each teacher significantly decreased the average frequency of negative statements from baseline to *intervention*. Rita's average frequency of negative statements decreased -11.33 per observation more than the other four teachers. Davis and Rover also showed significant decreases in their use of negative statements, -10.04 and -10.33, respectively. However, Kate and Moss demonstrated the lowest mean frequency of negative statements during intervention offering 1.54 and 1.30, and lowest amount of change from baseline to intervention. Their changes in use of negatives, while smaller, were still significant.

In *maintenance*, the use of negatives continued to decline for each of the five teachers; however, this change was not significant. Rover and Rita both decreased their mean negative statements by 2, while the other three teachers decreased by 1 negative statement. While the change from intervention to maintenance was not significant, the change from baseline to maintenance for negative statements was significant for each of the five teachers (Table 6).

4.1.3 Summary of Interactions

Each of the five teachers demonstrated significant changes in frequency of praise and negative statements from baseline to intervention. For instance, Rover demonstrated 2 praise statements every 100 minutes in baseline, but increased to 1 praise statement per minute in intervention. There was also a sharp decline in the use of negative statements during intervention, which continued into the maintenance phase. The change from intervention to maintenance was not significant for any of the teachers due to only slight changes in both interactions. For instance, Rita demonstrated 2 negative statements every ten minutes in intervention and then declined to 1 negative statement every 10 minutes. The use of praise statements fell slightly during maintenance for four of the five teachers; however, the levels of praise were still significantly different than those seen in baseline.

4.2 STANDARD CELERATION CHARTS

Standard celeration charts (SCC) display all data. SCCs show proportional behavior change, normalize variability, depict learning as a straight line, place behavior in real time, and allow for the calculation of celeration, a quantitative measure of learning across time (Kostewicz & Kubina, 2011; Kubina & Yurich, 2012; Lindsley, 2005). The horizontal axis displays a unit of time (i.e., successive calendar days), which helps to create an accurate description of the teachers' and students' change in behavior over time (Datchuk & Kubina, 2011). The vertical axis demonstrates the frequency of teacher and student behavior per minute via a logarithmic or ratio scale. By using a logarithmic scale the proportional distance between numbers is

represented equally, for example moving from one to two and two to four has the same distance, a x2.00 change, versus graphs with equal interval axes which attribute a third more distance to the change between two and four. The larger distance between some values on an equal interval axis may over represent experimental effect; whereas, the SCC, with smaller distances between values, offers a more conservative presentation of data and helps prevent researchers from overstating the effect of the intervention.

The data displayed on an SCC may be interpreted in multiple ways. For purposes of this chapter, the following values were calculated: celeration, celeration change, frequency change, bounce, bounce change, accuracy improvement measure (AIM), and AIM change (Pennypacker, Guiterrez, & Lindsley, 2003). Pennypacker, Gutierrez, and Lindsley (2003) describe celeration, "as the slope of a line describing a set of behavior frequencies arrayed in real time," (p. 8). Essentially, **celeration** is the quantification of the change in behavior frequency over time (i.e., count per minute per week) or trend. For the current study, a linear regression formula produced the celeration lines. **Celeration change** refers to the change in celeration from one phase to the subsequent phase, a quantification of changes in trend. Calculating a **frequency change** compares the final frequency established by a celeration line in one phase to the beginning frequency established by the celeration line in a subsequent phase which assists in examining the immediate impact of the new procedure and quantifies a jump up or jump down in the behavior. Another important component depicted by an SCC is the variability in the frequency of the behavior or the **bounce** of the data around the celeration line. Similar to celeration change, **bounce change** describes the difference in the variability of data from one phase to the next. The **AIM** depicts the improvement in the quality of behavior over time. Quality in the current study

results from a ratio of the celerations of both praise and negative interactions within a phase. **AIM change** merely compares two adjacent AIM scores.

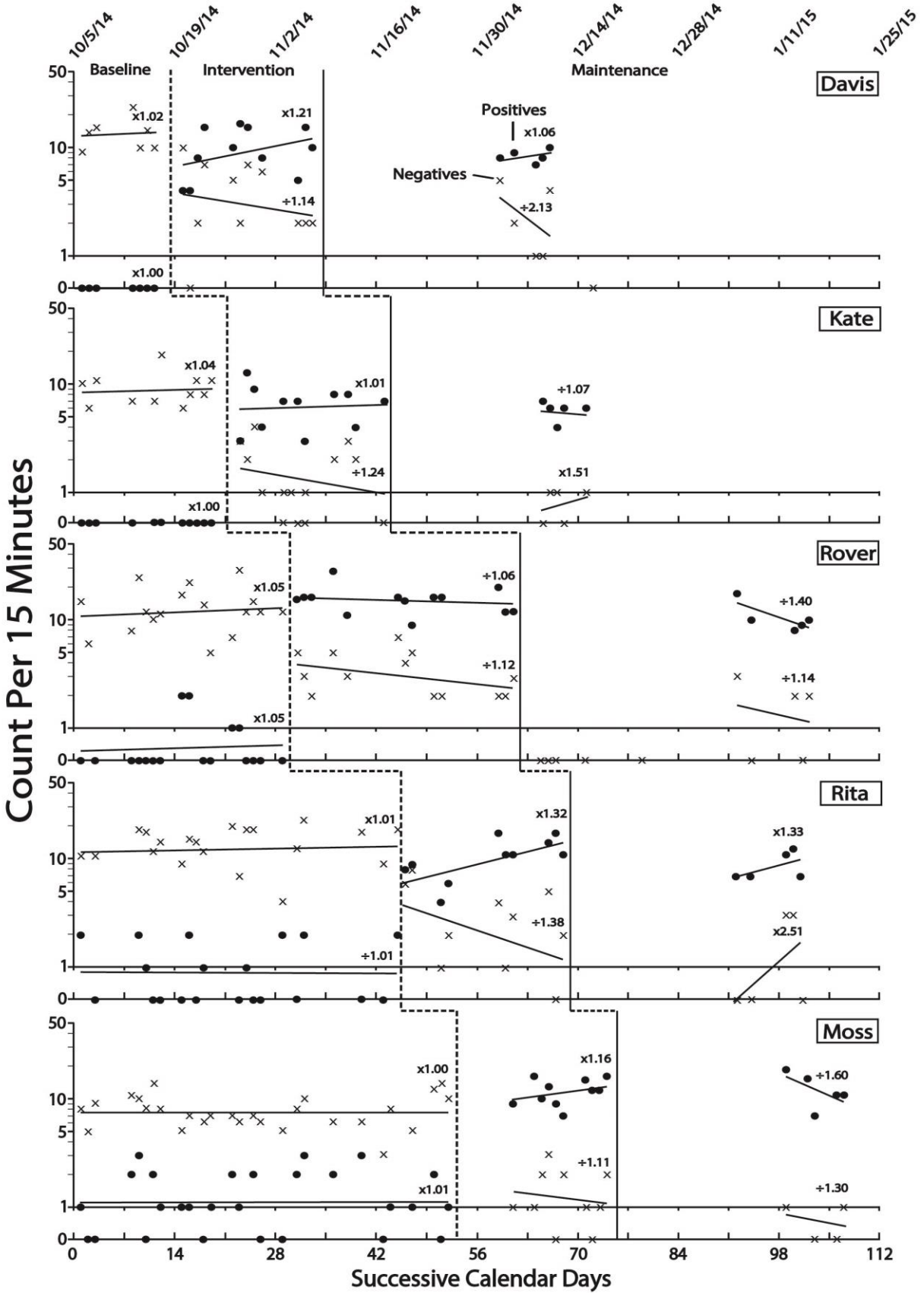
4.2.1 Celeration and Celeration and Frequency Change Measures

The celeration for all five teachers, in each of the phases is depicted graphically and numerically in Figure 2. Filled in dots represent frequency of praise statements and x's represent frequency of negative statements. The vertical axis of the graph represents a logarithmic scale, while the horizontal axis represents consecutive days. The celeration lines, in the display, lie on specific data paths and represent either accelerating (x) or decelerating (÷). For instance, a celeration of x2.00 means the frequency of the behavior doubled (i.e., 100% gain) in a week; whereas, a celeration ÷2.00 means the frequency of the behavior decelerated by half (i.e., 50% reduction).

4.2.1.1 Praise

As depicted in Figure 2, Davis and Kate did not use any praise statements during *baseline,* a x1.00 celeration at 0. However, Rover and Moss demonstrated variable levels of praise during baseline and eventually stabilized with celeration x1.05 and x1.01, before entering intervention. Rita also used variable amounts of praise, but showed deceleration (÷1.01) in her use of praise statements just before entering intervention. During *intervention*, four teachers (Davis, Kate, Rita, and Moss) had accelerating praise statements (Table 6). Only Rover displayed a deceleration (÷1.06). Quantification of celeration and frequency changes provide a clearer picture of intervention effects.

Figure 2. Celeration Graph Teacher Interactions



To calculate celeration change, the celeration from one phase is divided or multiplied by the celeration in the subsequent phase (Datchuk & Kubina, 2011). Whether the celeration is divided or multiplied depends on the sign (÷ or decreasing, x or increasing) of both celerations. When signs differ, multiply the values. When the signs are the same, divide the larger value by the smaller. In either case, the sign of the resulting value comes from the direction of change in the second phase. For instance, if the behavior is decelerating in baseline (÷2.00) to an acceleration (x4.00) in intervention, an accelerating celeration change would result x8.00 turn up. However, if the baseline celeration was x4.00 and the intervention x2.00, the larger (4) would be divided by the smaller (2) equaling 2. Because intervention (x2.00) decelerates compared to baseline (x4.00), the resulting celeration change value would equal a ÷2.00 turn down.

Frequency change follows similar parameters. Using frequencies established by celeration lines, the final frequency of the first phase is compared to the initial frequency of the next phase where celeration lines end and begin. The larger frequency is divided by the smaller and receives the sign of change. Higher subsequent frequencies generate a jump up (x) while lower ones generate a jump down (÷). For example, a jump up from 5 to 20, generates a x4.00 frequency change. Switching the frequency order (20 to 5) produces a ÷4.00 jump down.

Table 7. Celeration Measures for Praise Statements

	Baseline to Intervention		*Intervention to Maintenance.*	
Name	*CC*	*FC*	*CC*	*FC*
Davis	x1.21	x22.50	÷1.14	÷1.60
Kate	x1.01	x25.00	÷1.18	x1.00
Rover	÷1.11	x20.20	÷1.32	x1.05
Rita	x1.33	x7.00	x1.01	÷2.00
Moss	x1.15	x10.00	÷1.86	x1.44

Note. CC= Celeration Change, FC= Frequency Change

Four (Davis, Kate, Rita, and Moss) of the five teachers' praise data both jumped and turned up comparing baseline to *intervention* (Table 7). Jumps up in frequency ranged from x7.00 (Rita) to x25.00 (Kate) meaning four teachers entered intervention providing 7 to 25 times more praise statements as compared to baseline (Table 7). The same four teachers experienced praise celeration improvements (i.e., turn ups) ranging from x1.01 (Kate) to x1.33 (Rita), 1% to 33% improvements. Rover's use of praise statements contrasted from the other in that, he experienced a jump up (x20.20) and a turn down (÷1.11).

Davis and Rita accelerated in their use of praise statements in *maintenance*, x1.06 and x1.33, respectively; while, Rover, Kate, and Moss decelerated in the frequency of praise statements offered (Figure 2). Due to the deceleration in maintenance, only one teacher, Rita demonstrated a positive celeration change (x1.01). The remaining four teachers, Davis, Rover, Moss, and Kate, presented decreasing celeration changes from intervention to maintenance ranging from ÷1.14 to ÷1.86. Despite the turn down demonstrated by Rover, Kate, and Moss, these same three teachers showed an initial jump up in their praise statements (x1.00, x1.05, x1.44) in their frequency change measure from intervention to maintenance. In contrast, Davis and Rita jumped down from intervention to maintenance in the frequency change measure (Table 7).

4.2.1.2 Negatives

Each of the teachers used a greater number of negative statements during *baseline* than praise statements. Davis, Kate, and Rover all demonstrated accelerating negative statements, x1.02, x1.04, and x1.05, respectively. Rita showed a stable celeration, x1.00, and Moss a slight deceleration, ÷1.01 (Figure 2).

Negative statements during *intervention* decelerated for all five teachers. Additionally, all five teachers experienced both a jump and turn down, meaning both frequency and celeration decreased from baseline into intervention (Table 8). Teachers immediately produced between 10% (Moss) and 33% (Davis, Rover) fewer negatives followed by a further decrease.

Table 8. Celeration Measures for Negative Statements

	Baseline to Intervention		*Intervention to Maintenance*	
Name	CC	FC	CC	FC
Davis	÷1.16	÷3.60	÷1.87	x1.38
Kate	÷1.29	÷5.42	x1.87	÷1.33
Rover	÷1.18	÷3.60	÷1.02	÷1.80
Rita	÷1.39	÷3.80	x3.46	÷1.80
Moss	÷1.11	÷10.00	÷1.17	÷1.17

Note. CC= Celeration Change, FC= Frequency Change

While teachers continued to use lower levels of negative statements, in *maintenance*, some demonstrated decelerations (Davis, Rover, Moss), and others (Kate, Rita) had accelerating negative statements (Figure 2). When compared to intervention, four teachers (Kate, Rover, Rita, and Moss) experienced jump downs entering maintenance (Table 8). Rover and Moss also had turn downs with Kate and Rita turning up. Only Davis showed a jump up followed by a turn down.

4.2.1.3 Summary of Celeration Measures

In baseline, all five teachers demonstrated accelerating negative statements at a higher frequency as compared to stable or nonexistent praise statements. Once entering intervention, each teacher immediately and across the intervention phase provided more praise and fewer

negative statements as compared to baseline. During the maintenance phase, all teachers maintained levels of interactions (praise and negative) reached in intervention, however some variability in outcomes occurred. Rover and Moss decreased and Rita increased both praise and negative interactions. Davis increased praise and decreased negatives with Kate reversing the trend.

4.2.2 Bounce and Bounce Change Measures

Bounce, or the variability in frequency, occurs on Figure 3. The bounce score is labeled for both praise, filled in dots, and negative statements, x's. The lines around the data points, in Figure 3 represents the bounce envelope or the spread within which the frequency falls (Pennypacker et al., 2003). Total bounce is the ratio equivalent of the range, which is found by subtracting the minimum value and the maximum value within a phase (Kubina & Yurich, 2011). Bounce within and between phases suggests the experimental control independent variables have over the dependent measure in question; the lower the bounce, the greater the control displayed. All other aspects of the figure follow the standard components of an SCC discussed earlier for Figure 2.

4.2.2.1 Praise

As shown in Figure 3, the variability in the amount of praise statements or bounce, during *baseline*, ranged from x2.20 to x6.00 (Figure 3) for Rover, Rita, and Moss. Moss showed the largest variability in praise statements at a x6.00 bounce. Davis and Kate did not offer any praise statements during baseline; therefore, a bounce of x1.00 was present.

In *intervention*, bounce ranged from x2.50 (Moss) to x4.50 (Kate, Figure 3). The range of bounces reduced from x6.00 to x2.00. Bounce change provides an additional comparison between phases. Calculating bounce change follows the same steps as frequency change. The larger bounce measure is divided by the smaller with the sign of change provided. For example, a x4.00 baseline bounce followed by a x2.00 intervention bounce produces a ÷2.00 bounce change measure. Whereas, a bounce in baseline of x2.00 and a x4.00 in intervention would lead to a x2.00 bounce change because the bounce became larger from one phase to the next.

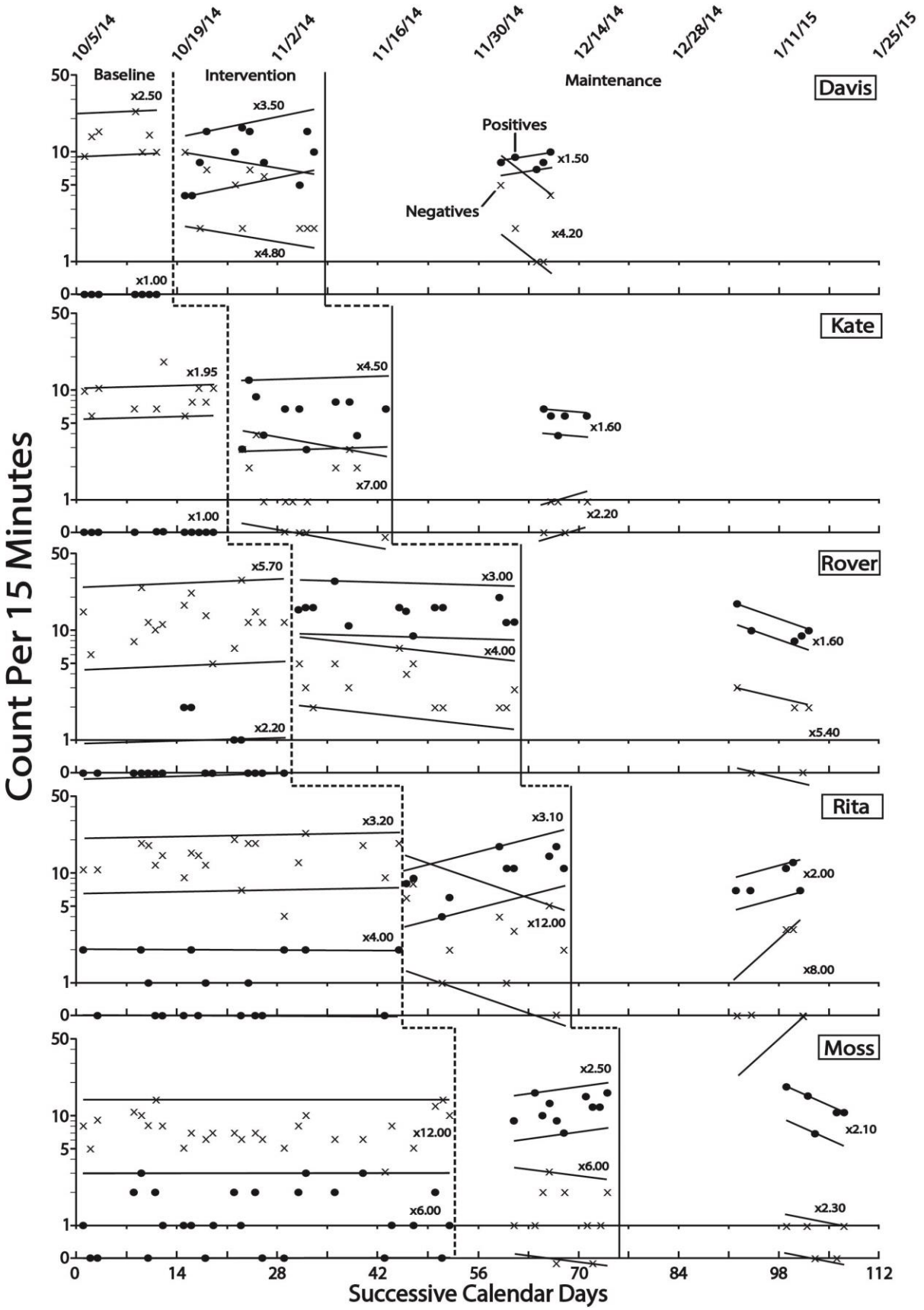
Table 9 showed that three teachers produced increasing bounce change ranging from x1.36 (Rover) to x4.50 (Kate). Two (Rita and Moss) produced considerably less variability from baseline to intervention, with bounce change scores of ÷1.29 and ÷2.40. Kate and Davis not only produced more variability in the intervention phase, they also first produced observable praise statements which naturally would consist of variability greater than the x1.00 established in baseline.

Table 9. Bounce and Bounce Change in Praise Statements

	Baseline	*Intervention*		*Maintenance*	
Name	*B*	*B*	*BC*	*B*	*BC*
Davis	x1.00	x3.50	x3.50	x1.50	÷2.33
Kate	x1.00	x4.50	x4.50	x1.60	÷2.81
Rover	x2.20	x3.00	x1.36	x1.60	÷1.86
Rita	x4.00	x3.10	÷1.29	x2.00	÷1.55
Moss	x6.00	x2.50	÷2.40	x2.10	÷1.19

Note. B = Bounce, BC = Bounce Change

Figure 3. Bounce Graph Teacher Interactions



While the overall use of praise statements decreased during *maintenance*, all five teachers closed their bounce envelope demonstrating more stability in the number of praise statements. Davis, Kate, and Rover presented with similar bounce scores at x1.50, x1.60, and x1.60; whereas, Rita and Moss had slightly more variability than the others at x2.00 and x2.20. The decline in variability led to improvements in the bounce change scores for all five teachers ranging from ÷1.19 to ÷2.81 (Table 9).

4.2.2.2 Negatives

During *baseline,* variability of negative statements appeared similar to that of praise statements, with the level of bounce ranging from x1.95 to x5.70 (Table 10). The teachers with the higher frequencies of negative statements, Davis and Rita, depicted lower bounce scores(x2.50 and x3.20). Whereas, Rover and Moss showed the greatest variability, x5.70 and x4.80, during this phase. Kate demonstrated the greatest consistency in her use of negatives with a x1.95 bounce.

Despite the decrease in the frequency of negative statements in *intervention*, four of the teachers, Davis, Kate, Rita, and Moss, demonstrated increases in variability. Rita and Kate presented with the largest bounce measures of x12.00 and x7.00, respectively, leading to a higher bounce change score (Table 10). Davis and Moss produced more modest bounces at x4.80 and x6.00 showing, but still showed more variability than baseline with an increase in bounce change measures (x1.92 and x1.25) from baseline. In contrast, Rover demonstrated a decrease in variability from baseline to intervention with a bounce change score of ÷1.43.

Table 10. Bounce and Bounce Change for Negative Statements

	Baseline	*Intervention*		*Maintenance*	
Name	*B*	*B*	*BC*	*B*	*BC*
Davis	x2.50	x4.80	x1.92	x4.20	÷1.14
Kate	x1.95	x7.00	x3.59	x2.20	÷3.18
Rover	x5.70	x4.00	÷1.43	x5.40	x1.35
Rita	x3.20	x12.00	x3.75	x8.00	÷1.50
Moss	x4.80	x6.00	x1.25	x2.30	÷2.61

Note. B= Bounce, BC= Bounce Change

In *maintenance*, the range of negative statements declined for the teachers leading to less variability and smaller bounce scores for four of the five teachers. Moss and Kate demonstrated the smallest bounce scores (x2.30 and x2.20) that resulted in improved bounce change (÷2.60 and ÷3.18). Davis and Rita presented more variability (x4.20 and x8.00), but still improved their bounce from intervention (Table 10). Rover showed the most variability (x5.40) from intervention to maintenance leading to an increasing bounce change score (x1.35).

4.2.2.3 Summary of Variability

The five teachers produced similar levels of variability in baseline regardless of interaction. With the introduction of intervention, teachers remained divided; some decreased and others increased variability across the two behaviors. All five decreased praise bounces from intervention to maintenance improving on variability, and all except Rover, also decreased negative bounce.

4.2.3 Quality of Interactions

Accuracy improvement measures (AIM) compares two celerations within the same phase. In the case of the current study, AIM provides a measure of teaching quality by comparing the celeration of praise and negative statements, regardless of frequency (Datchuk & Kubina, 2011). The formula follows the celeration change equation noted above. When signs differ, multiply the values. When the signs are the same, divide the larger value by the smaller. In either case, the sign of the resulting AIM value comes from the direction of improvement. If praise (i.e., corrects) are improving faster than incorrects, the AIM score receives an x. If negatives (i.e., incorrects) are increasing faster than corrects, the AIM score has a ÷. For example, if the celeration of praise statements was a x2.00 and the celeration of negative statements was a ÷4.00, the AIM would be a x8.00. The teacher is demonstrating more praise statements and fewer negative statements, so the overall quality of the interactions improves. As another example, a ÷4.00 AIM would result from a x2.00 for negatives and a ÷2.00 for praise. The AIM change measure follows similar parameters and compares the AIM from one phase to another to determine if the quality of interactions is improving or decaying across phases. To calculate the AIM change measure, the AIM's from each phase are multiplied, if the signs are different and divided if the signs are the same (Kubina & Yurich, 2012). The sign for the AIM change results from the direction of change. If the AIM worsens from one phase to the next, a divide by sign (÷) is applied. AIM that improves in subsequent phases has a times sign (x). AIM change reveals the teacher improvement across phases.

Table 11. AIM and AIM Change

	Baseline	*Intervention*		*Maintenance*	
Name	*AIM*	*AIM*	*AIM Change*	*AIM*	*AIM Change*
Davis	÷1.02	x1.38	x1.41	x2.26	x1.64
Kate	÷1.04	x1.25	x1.30	÷1.62	÷2.30
Rover	x1.00	x1.06	x1.05	÷1.23	÷1.30
Rita	x1.00	x1.82	x1.82	÷1.89	÷3.44
Moss	x1.01	x1.29	x1.28	÷1.23	÷1.59

Note. AIM = Accuracy Improvement Measure

The AIM scores for teachers in *baseline* ranged from ÷1.04 (Kate) to x1.01 (Moss) suggesting all teachers maintained the same quality of interactions throughout baseline (Table 11). The introduction of *intervention* produced an across the board improvement in quality. Teachers had AIM scores from x1.06 (Rover) to x1.82 (Rita) meaning both interactions improved in the desired direction, praise statements increased and negative statements decreased (Table 11). One teacher, Davis, went on to improve interaction quality by 89% in *maintenance*. The remaining four teachers saw declines in interaction quality with AIM scores of ÷1.30 to ÷3.44.

4.2.3.1 Summary Quality of Interactions

Teachers showed marked improvements in interaction quality while in intervention. The effects of the intervention, however, only affected AIM for one teacher in maintenance. The remaining three teachers showed decaying AIM as the final phase concluded.

4.3 DISRUPTIVE BEHAVIOR

Figure 4 displays total classroom disruptive behavior for each teacher on a SCC. Figure 4 follows the same conventions as Figure 2 except x's represent daily frequency of classroom disruptive behaviors. The lines show celeration and celeration values. The average frequency and range of disruptive behaviors will also be described for each phase of the study. For purposes of clarity, each classroom will be referred to by the teachers' name.

4.3.1 Frequency of Disruptive Behavior

The frequency of disruptive behavior appeared high for all five classrooms, in *baseline,* ranging from a mean of 35.76 to 50.43 disruptive instances per observation (Table 12). Davis' and Rita's classrooms demonstrated the highest average frequencies at 50.43 and 50.18, respectively. Kate's and Rover's classroom showed slightly less disruption, 42.73 and 40.00 with Moss' classroom averaging the lowest amount of disruption, 35.76.

Table 12. Frequency Classroom Disruptive Behavior

	Baseline		*Intervention*			*Maintenance*			
Name	*M*	*SD*	*M*	*SD*	*B-I*	*M*	*SD*	*I-M*	*B-M*
Davis	50.43	17.63	20.09	6.99	-30.34*	6.00	1.00	-14.09*	-44.43*
Kate	42.73	14.75	9.43	5.50	-33.30*	3.40	1.52	-6.03	-39.33*
Rover	40.00	12.10	3.46	2.44	-36.54*	3.00	1.58	-0.46	-37.00*
Rita	50.18	20.67	5.60	2.99	-44.58*	4.00	4.80	-1.60	-46.18*
Moss	35.76	11.16	2.20	2.39	-24.60*	2.00	2.12	-0.20	-33.76*

Note. *M* = Mean, *SD* = Standard Deviation, *B-I* = change in frequency from baseline to intervention, *I-M* = change in frequency from intervention to maintenance, *B-M* = change in frequency from baseline to maintenance
* Denotes significant change, $p < .05$, according to Wilcoxon matched pairs, signed ranks test.

During the implementation of the *intervention*, students in the five classrooms demonstrated significantly fewer instances of disruptive behavior than baseline. Rita's and Davis' classroom showed the largest decline moving from 3 per *minute* in baseline to 3 every *ten* minutes in Rita's classroom and 1 per minute in Davis' classroom. Rover's students also decreased by 36 behaviors per observation or 2 instances of disruptive behavior every 10 minutes. Kate's classroom decreased to a mean of 9.43 disruptive behaviors and Moss' classroom demonstrated the lowest rate of disruptive behavior at 2 behaviors per observation a reduction of 24 instances.

Classroom disruptive behavior continued to decline for all five teachers in *maintenance;* however, Davis was the only teacher to demonstrate a significant change from intervention to maintenance. Davis decreased the instances of disruptive behavior by 14 per observation. The other four teachers had much lower reductions in disruptive behavior ranging from a decrease of less than 1 to a decrease of 6 per observation. Despite the small change from intervention to maintenance, the number of disruptive behaviors in maintenance was still significantly less than the number presented in baseline for all five teachers (Table 12).

4.3.2 Celeration Measures

All five classrooms decelerated slightly in the frequency of disruptive behavior during *baseline*. Davis' and Kate's classrooms showed the sharpest decline at ÷1.30 and ÷1.19. Rover's, Rita's, and Moss' classrooms demonstrated mild deceleration at ÷1.09, ÷1.04, and ÷1.02.

Table 13. Celeration Measures Classroom Disruptive Behavior

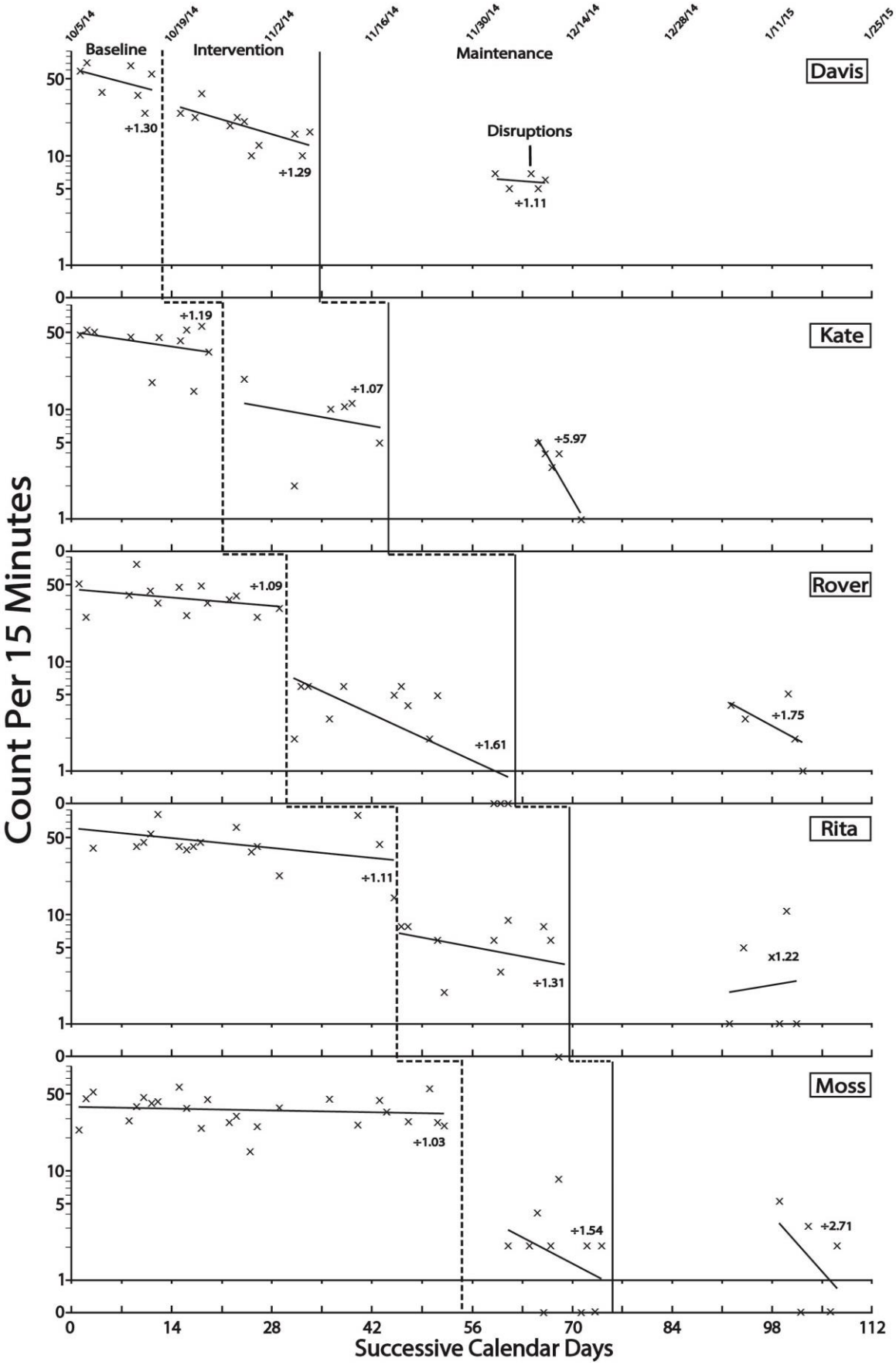
	Intervention		*Maintenance*	
Name	*CC*	*FC*	*CC*	*FC*
Davis	x1.00	÷1.05	x1.22	÷2.00
Kate	x1.11	÷1.79	÷6.62	÷1.05
Rover	÷1.48	÷2.50	÷1.09	x3.00
Rita	÷1.26	÷3.75	x1.60	÷2.00
Moss	÷1.50	÷6.25	÷1.76	x3.00

Note. CC = Celeration Change, FC = Frequency Change

Disruptive behavior continued to decline in *intervention* with three teachers (Rover, Rita, and Moss) demonstrating both a turn down and a jump down (Table 13). Kate demonstrated a jump down (÷1.79), but a slight turn up from baseline. Davis jumped down slightly, but turned up (Table 13).

In *maintenance*, four classrooms (Davis, Kate, Rover, and Moss) showed continued deceleration in the number of disruptions (Figure 4). Kate demonstrated both a jump down and turn down, while Davis only showed a jump down with a slight turn up (Table 13). Rover and Moss showed an initial jump up (x3.00), but eventually demonstrated sharp decelerations in the number of disruptive behaviors. The students in Rita's classroom jumped down (÷2.00) in disruptions, but accelerated during the phase leading to a negative celeration change measure (Table 13).

Figure 4. Celeration Graph Classroom Disruptive Behavior



4.3.3 Correlations

The relationship between teacher and student behavior is further supported by moderate to high correlations between teacher interactions and classroom disruptive behavior across phases. A high negative correlation, r = -.83 for Moss was noted between praise statements and disruptive behavior with 40 observations compared. Rita, Rover, and Kate also demonstrated high negative correlations, -.72, -.81 and -.71, between praise statements and disruptive behavior (n = 27, n = 32, n= 23), respectively. Davis showed a moderate negative relationship, r= -.58, between his praise statements and classroom disruptive behavior (n = 23). All five teachers showed a strong positive linear relationship for negative statements and disruptive behavior with the same number of observations compared as listed above. Davis and Rover demonstrated the strongest positive relationship (r= .77, r=.79) with Kate, Moss, and Rita also showing high positive correlations (r= .75, r=.72, r= .69). In summary, as praise increased and negatives decreased in all five classrooms, disruptive behaviors decreased. No significant difference was seen between the correlations for praise statements and disruptive behavior and negative statements and disruptive behavior for each of the five teachers. All correlations are statistically significant at the $p < .01$ level.

4.4 SOCIAL VALIDITY

The researcher collected social validity data in two ways: 1) via fifteen statement 5-point Likert scaled questionnaire given to each of the five teachers within the study and 2) anecdotal information included in email contact with teachers. The responses to the questionnaire

(Appendix D and Table 14) were anonymous and collected by a research assistant unfamiliar to the teachers. The statements followed both a positive sentence structure (Statement 1) and negative sentence structure (Statement 2). Statement formats alternated throughout the questionnaire to verify teachers read each statement. Average scores appear in Table 14. The teachers agreed most strongly with the statements: "I understood the steps of the intervention," "The video feedback was an effective way of improving my implementation of the intervention," and "The email explaining the video clips helped me to better understand the strategies used in the intervention." Teachers disagreed most with the following statements: "I found accessing the PPTs online difficult" and "Video clips of me during the in-person training were NOT helpful." The statement, "Disruptive behavior has NOT decreased since I implemented the intervention" gained the most neutral responses from teachers.

In addition to the questionnaire, many of the teachers offered anecdotal statements via email or message on Pitt Box as they went through the study. One teacher for instance expressed via email the change seen in her students after implementing the intervention, "I just wanted to tell you I've seen such an improvement in my class since I started using more praise! They are looking forward to me telling them good job and they're thanking me when I say it." Another teacher commented on a video clip demonstrating how the intervention helped them to reflect on his behavior, "Watching this made me realize that the student gave a terrific answer but yet I never praised him for it. Unreal how we get lost in our context at times." On a similar note, another teacher recognized the emotional impact of offering specific praise to a student, "She did react in a positive manner when given positive specific praise."

Table 14. Social Validity

Statements	1	2	3	4	5	Avg.
1. I understood the steps of the intervention.	5	5	5	5	5	5.0
2. I found accessing the PPTs online difficult.	1	1	1	1	1	1.0
3. The PPTs were a useful way of conveying background information about the intervention.	5	5	5	5	4	4.8
4. I felt the 1-hour in-person discussion of the PPTs clarified the steps to the intervention.	5	3	5	5	4	4.4
5. Video clips of me during the in-person training were NOT helpful.	1	1	1	1	1	1.0
6. The video feedback was an effective way of improving my implementation of the intervention.	5	5	5	5	5	5.0
7. It was not easy to access the video clips on the Pitt Box online cloud space.	1	2	1	1	1	1.2
8. The email explaining the video clips helped me to better understand the strategies used in the intervention.	5	5	5	5	5	5.0
9. I believe the intervention improved my ability to use praise statements in the classroom.	5	5	4	5	5	4.8
10. I feel the intervention decreased my use of coercive statements in the classroom.	5	5	4	5	4	4.6
11. Disruptive behavior has NOT decreased since I implemented the intervention.	1	1	3	1	4	2.0
12. Appropriate behaviors have increased since I implemented the intervention.	5	5	3	5	4	4.4
13. It was relatively easy (e.g. amount of time/effort) to implement the strategies from the intervention.	5	4	4	5	5	4.6
14. The intervention process required more effort than it was worth.	1	1	1	2	1	1.2
15. I would recommend that other teachers be trained in this intervention.	5	5	4	4	5	4.6

Note. Teacher responses were anonymous, so #'s 1-5 at the top of the chart represent each of the teachers.

5.0 DISCUSSION

Teachers must demonstrate effective classroom management skills to maximize student engagement and achievement while minimizing disruption (Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008). Teachers, particularly general education teachers in inclusive settings, frequently identify classroom management as a weakness and request professional developments on the topic (Briere, Simonsen, Sugai, & Myers, 2015). While teachers may be aware of their influence on student behavior, many find that they lack the skills and strategies to develop a positive learning environment that fosters engagement and achievement (Pas, Cash, O'Brennan, Debnam, & Bradshaw, 2015).

Secondary teachers struggle more than their elementary counterparts to create positive learning environments. Research suggests praise is offered less frequently as students move across the grade levels and praise is critical to a positive learning environment (Blaze, Olmi, Mercer, Dufrene, & Tingston, 2014). Improving teachers' use of praise, while simultaneously decreasing negative statements, has the potential to decrease disruptive behavior, while increasing engagement and achievement (Duchaine et al., 2011). The current study examined the effects of a training based on the curriculum, *Tools for Positive Behavior Change* (Stoutimore, Williams, Neff, & Foster, 2008) paired with video performance feedback, on secondary general education teachers' use of praise and negative statements in an inclusive setting. The study also explored intervention effects on classroom disruptive behavior in general.

Results from the current study demonstrated a clear experimental effect. The combination of the PowerPoint training, the one-hour in-person review session, and the video performance feedback impacted teacher behavior. More specifically, all five secondary teachers increased their use of praise and decreased their use of negative statements directed toward students adding to the current literature (Duchaine et al., 2011, Hawkins & Heflin, 2011). The results also extend the literature by dmeonstratring significant change in teacher interactions through the maintenance phase, which has been a weakness in the two previous secondary inclusive studies (Duchaine et al., 2011, Hawkins & Heflin, 2011). In addition, student behavior also changed. Total disruptive behavior in four of the five classrooms decreased following the introduction of the intervention and the concurrent change in teacher behavior. Again this strengthens the current literature base and offers stronger evidence for the relationship between teacher interactions and classroom disruptive behavior, which was not clearly supported by the results discussed in Duchaine et al. (2011) or Hawkins and Heflin (2011).

While the effects of the three-pronged intervention are clear the results do not help to identify the relative influence of the multiple aspects of the intervention curriculum, the personal review session, or the performance feedback. Furthermore, observations of both teacher and student behavior suggested many factors involved in behavior change and how behavior is presented. To fully represent the dynamic aspect of teacher and student behavior, as well as the changes seen in their behaviors, standard celeration charts were chosen and are presented as a standardized form of analysis that allows additional measurements of behavior that are not available in other forms of single-case assessment.

5.1 CHANGING TEACHER INTERACTIONS

Improving teachers' praise to negative ratio goes beyond increasing the frequency of particular behaviors; it alters the quality of the interactions between teachers and students (Blaze et al., 2014). In this study, the combination of a professional development based on the curriculum *Tools for Positive Behavior Change* (Stoutimore et al., 2008) and daily video performance feedback produced the intended results: praise statements increased and negative statements decreased. Moss, for example, increased from a 1:4 praise/negative ratio in baseline to a 9:1 ratio in intervention. Similar results were recorded for the other four teachers as well. clearly demonstrating the impact of the intervention on both interactions. The primary benefit of altering the teacher ratio is changing the amount of attention teachers place on appropriate behavior (Blaze et al., 2014). Davis increased his praise to negative ratio from 0:13 to 6:1 focusing more on appropriate rather than inappropriate behavior student behavior.

The additional attention afforded to students carrying-out appropriate behavior serves as a model and prompt for other students: appropriate behavior accesses teacher positive attention (Briere et al., 2015). Rover and Rita anecdotally shared their surprise at how many students ceased talking and standing after praising other classmates for sitting quietly and being prepared for class, but attention to appropriate behavior is not enough. A more positive classroom climate, which promotes student engagement and achievement requires that teachers also decrease reprimands and other negative responses (Reinke, Stormont, Herman, Wang, Newcomer, & King, 2014).

Teachers in the current study accomplished both as well. Decreasing negative attention reduces reinforcement of inappropriate behavior, just as increasing praise provides reinforcement for appropriate behavior (Blaze et al., 2014). Decreasing negatives breaks the cycle of coercion

(Clunies-Ross, Little, & Kienhuis, 2008). For example, Rita, who showed the greatest level of negativity, offered one negative statement every minute on average during baseline; Moss, who showed the least negativity, still offered one negative statement every two minutes. The other three teachers demonstrated a similar pattern. The teachers responded to students' inappropriate behavior with additional counter-control (i.e. coercion). As Bendtro and Long (1999) explain, coercion feeds negativity and fosters both rebellion and disruptive behavior in students. In the current study, after training and feedback teachers decreased negative attention considerably.

The "pivot" tool, contained in the intervention, potentially helped teachers to proactively manage behavior by using a strategy that lessens the likelihood of inappropriate behavior (Clunies-Ross, Little, & Kienhuis, 2008). Viewing of the videos and feedback demonstrated that "pivot" helped teachers to recognize an inappropriate behavior, pivot away from said behavior (i.e., ignore), and offer praise to a student nearby demonstrating appropriate behavior. The teacher then must attend to the behavior of the first student if one of two things occur: the student displays an appropriate behavior or stops displaying the inappropriate behavior. The pivot strategy exemplifies a proactive, rather than reactive, strategy for managing inappropriate behavior (Clunies-Ross et al., 2008).

Another benefit of "pivot" is that it requires the teacher to distinguish between behaviors that while annoying are not impacting the learning environment (junk behavior) and disruptive behaviors that are impacting students' ability to learn (Van Camp et al., 2008). Several of the teachers in the current study focused consistently on "junk" behavior, as Moss reported in an email, "My student is constantly tapping on his desk and it drives me crazy; however, I recognized today how my reprimanding him only led to him doing more." By ignoring these junk behaviors and pivoting to a nearby student's more appropriate behavior, the teachers increased the chances that the student tapping will cease the behavior. The pivot tool goes

beyond mere praise and helps the teacher to evaluate the behavior presented by students and become proactive in his/her approach to positively managing the interaction (Clunies-Ross et al., 2008).

5.2 CLASSROOM DISRUPTIVE BEHAVIOR

A major challenge for teachers in creating a positive learning environment centers on recognizing and appropriately managing disruptive behavior (Myers & Pianta, 2008). Disruptive student behavior creates a potentially difficult classroom environment. Interactions between teachers and students can become predominantly negative with interruptions to instruction (Pas, Cash, Brennan, Debnam, & Bradshaw, 2015). For instance, Rita faced 52 disruptive behaviors on average during baseline observations, and responded with less than 1 praise statement and more than 15 negative statements. Rita's classroom helps illustrate how student disruptive behavior and teacher negativity appear linked; this linkage was further supported by the significant correlations between teacher interactions and disruptive behavior. All five teachers demonstrated a significant negative relationship between the use of praise statements and disruptive behavior suggesting that praise might mitigate student inappropriate behavior (Way, 2011). The correlation between negative statements and disruptive behavior was also significant, supporting the need to improve both aspects of teacher interactions to decrease disruptive behaviors (Blaze et al., 2014). Successfully changing teacher behavior and improving the quality of interactions has a greater impact on disruptive behavior than merely reducing negative interactions (Pisacreta et al., 2011; Parsons, Nuland, & Parson, 2014).

The frequency of classroom disruptive behavior decreased to near zero by the end of the maintenance phase for all five teachers. One possible reason for disruptive behavior to persist involved the function of disruptive behavior. As Pas and colleagues describe (2015), student-peer relationships have a greater level of importance at the secondary level and discord among peers can impact the level of disruption in a classroom despite teachers' efforts to create a more positive environment. In addition, activities in the classroom that create opportunities for peer interaction and debate may also set the stage for more disruptive behavior. Finally, extinction bursts or lengthening schedules of reinforcement may explain the continued display (Cooper, Heron, & Heward, 2007). This study utilized random segments of observations to control for the effects of activity type.. However, peer relationships, activities, and histories of reinforcement offer barriers to the complete removal of disruptive behavior within a classroom.

The current study supports a strong relationship between teacher interactions and disruptive behavior; however, the literature base demonstrates inconsistencies in the measurement of disruptive behavior which subsequently impacts the reliability of the data (Smith, Lambert, & Moore, 2013). The disruptive behavior of every student in the room contributes to the "collective effect" of the overall disruptive behavior on the teachers' ability to manage the classroom (Johnston & Pennypacker, 2009, p. 85). Since the intervention focused on imparting skills for better managing a classroom, disruptive behavior was measured at the classroom level (Allday et al., 2012; Myers et al. 2011). Johnston and Pennypacker (2009) term this type of group measurement collective, equivalent, and interactive where the possibility that each student's behavior may be influenced by the behavior of others is taken into account by the measurement system. While precedent does not appear in the literature, the current study demonstrated consistent change in total classroom disruptive behavior coinciding with

improvement in teacher behavior, supporting the notion that group measurement may be a more accurate measure of the impact of the intervention on student behavior (Smith et al., 2013).

5.3 VIDEO FEEDBACK

The *Tools for Positive Behavior Change* (Stoutimore et al., 2008) curriculum presented through PowerPoints, a 1-hour in-person session, and video feedback gave teachers the strategies necessary to replace the negative, coercive behavior with different, more positive behavior. Of all of the intervention components, teachers reported that it was the video feedback that prompted correct application of the strategies in the classroom. Anecdotally several of the teachers referenced the feedback clips and emails as helping them solidify implementation of the intervention and understand how their behavior impacted that of their students. As Coffey (2014) explains, the video clips offer a moment of reflection and allow the teacher to see the impact his/her behavior has on the students.

In addition, the video feedback worked to support the performance feedback received by the teachers via email. Emails offered specific feedback regarding the strategies in *Tools for Positive Behavior Change* and referenced examples or video clips. Teacher behavior highlighted in clips included both appropriate and inappropriate examples of praise/negative interactions. The combination of the specific performance feedback with the video clips highlighting the specific teacher behavior aided the teachers in this study to more effectively implement the strategies of the intervention (Reinke, Stormont, Herman, & Newcomer, 2014). Fallon and colleagues (2015) found performance feedback to improve teacher implementation of an intervention, particularly general education teachers, and argue that the existing body of

literature supports necessary criteria for an evidence-based practice (Fallon, Collier-Meek, Maggin, Sanetti, & Johnson, 2015). Elevating performance feedback to an evidence-based practice (EBP) increases the value of the intervention, as well as the sustainability of the intervention. Performance feedback likely helped the teachers to maintain the lower levels of negative statements and maintain at least a higher level of praise than was seen in baseline. Reinke and colleagues (2014) also found the more performance feedback received by teachers the greater the implementation of the strategies learned over time.

5.4 USING STANDARD CELERATION CHARTS

When using a multi-faceted intervention interpretation of the results should take into account the many ways behavior may have been impacted by the intervention. The analysis should be dynamic, assessing the changes in behavior and describing the phenomenon of change in a quantifiable manner (Datchuk & Kubina, 2011). Standard Celeration Charts (SCCs) allow the researcher to look at behavior from many angles in a standardized manner in contrast to traditional single-case graphic displays where the vertical and horizontal axes are determined by the researcher to better represent the data (Pennypacker et al., 2003). Regardless of the behavior being described or graphed, the SCC expresses frequency in the same manner for all, as Pennypacker and colleagues (2003) explain, "Five movements per hour means the same thing every time it is used, regardless of what movements are being described" (p. 2). The standardized logarithmic scale of the vertical axis and the consecutive calendar days on the horizontal axis maintain a standard across measures, which also allows for additional comparisons. This was particularly important in the current study because the literature base

lacked standardization between teacher measures and student measures of behavior making comparisons difficult and bringing into question the reliability of the data.

Beyond standardizing the analysis, the SCC offers measures like the Accuracy Improvement Measure (AIM), which assess quality (i.e. accuracy) improvement or decay over time. A ratio of praise statements to negative statements may demonstrate that the teacher improved his/her level of interactions overall. A link between the direction of the relationship over time appears absent (Pennypacker et al., 2003). For example, Rover demonstrates a strong 5:1 praise to negative ratio in intervention, but only a x1.05 AIM measure depicting only a slight increase in quality of praise and negative statements over time and less strength than depicted by the ratio. The example shows the importance of time in determining the behavior in the future and how much change has and will occur. Adding the factor offers a component missed by ratio and also leads to greater sensitivity in measurement. As demonstrated in the AIM measures for maintenance, four of the five teachers demonstrated decaying quality however the teachers were only observed for five days. Despite this limitation, using AIM in addition to ratio better predicts future performance and trends of teacher interactions vital to creating a successful and practical classroom management intervention.

5.5 LIMITATIONS

Despite demonstrating experimental effects, the study does contain some limitations. First, one teacher, Rover, entered intervention with an increasing celeration for praise statements. The teachers entered intervention when the frequency of praise statements stabilized; however, the celerations were estimated and the researcher estimated a stable celeration. In reality,

Rover's celeration, x1.05, was still slightly greater than a stable celeration (x1.00). However, Rover did display an AIM of x1.00 suggesting positive and negatives celerations increasing at the exact same celeration. Additionally, negative interactions occurred at a much greater frequency (x15.00).

Second, a few of the teachers had a number of absences creating large gaps in the baseline and intervention phases of the study. Gaps in measurement contribute to more variability within the data. In relation to Rita, missing days may have added to the time it took for her to stabilize on the frequency of praise statements.

Third, the holiday winter break led Rover to start maintenance four weeks after intervention, instead of three like all four of the other teachers. While this may not have impacted his data directly, it is an inconsistency within the methodology that was not planned in advance. In essence, he was being measured differently than the other four teachers because of the additional week separating him from the intervention with feedback.

5.6 IMPLICATIONS FOR PRACTICE

The current study demonstrated the benefit to changing teacher interactions to improve classroom management. The results of the study highlight the need for teachers to not only increase their use of praise statements, but reduce negative statements simultaneously. By changing their interactions with students, teachers can steadily decrease disruptive behavior over time and improve the classroom environment. The intervention also showed the ability to reduce a range of disruptive behaviors, as the definition encompassed 11 behaviors seen across the five classrooms. Decreasing a range of behaviors lends the intervention to be generalized across

general education classrooms, which is needed to assist secondary content area teachers in an inclusive setting.

Video performance feedback likely played an important role in changing teacher interactions. The feedback assisted the teachers in better understanding the components of the intervention, but also with self-analysis of their own behavior (Fallon et al., 2015). The daily support of feedback while in intervention helps to solidify the intervention components, while also highlighting areas of weakness in teacher interactions with students that the teacher would likely miss at their own assessment. Carrying video performance feedback into future professional development practices and interventions would improve and help to maintain implementation.

5.7 FUTURE DIRECTIONS FOR RESEARCH

The literature base on praise as a viable classroom management strategy for teachers focused predominantly on elementary teachers and special education teachers. The current study adds to this literature base and supports the use of praise at the secondary level with general education teachers in inclusive settings (Duchaine et al., 2011; Dvorchak & Kostewicz, in review). However, the literature base and this study rely heavily on single-case design to demonstrate effectiveness and with many studies now supporting praise as a viable classroom management strategy scaling-up the intervention should be a priority (Fallon et al., 2015). Researchers need to determine if the intervention using praise and performance feedback can be implemented on a large scale and still maintain the same level of effectiveness. Performing the intervention with video feedback in third demographically similar schools, using one school for

intervention plus video performance feedback, the second with just the intervention, and the third as a control would offer more explicit data on the aspects of the intervention having the greatest impact on teacher behavior.

An entirely virtual training provides another avenue for research. Much of the current training was performed virtually, using email feedback, video clips, and PowerPoint training all delivered via the internet. Using a webcam or other software program, such as EdThena, where the video can be stored directly to an internet site and accessed by the researcher anywhere, may make the intervention both more feasible and more marketable. The teachers in the current study responded favorably to the virtual components on the social validity, further supporting the idea that a completely virtual model of the intervention would be acceptable.

Extending the intervention to pre-service teachers would be a good way to begin breaking the cycle of poor training in classroom management, as Briere and colleagues (2014) allude to in their research. Presenting the intervention with feedback to pre-service teachers while they are performing their student teaching will help to develop the necessary classroom management skills and also work on improving the student teachers' reflective abilities (Coffey, 2014). The intervention would also help to prepare the pre-service teachers for the behavioral issues and concerns with students they are likely to face in the classroom following graduation.

5.8 CONCLUSION

The added components of the intervention, the video feedback, and the accessibility of the feedback virtually likely assisted in the sustained performance of teachers. This study demonstrates the benefit of implementing a classroom management intervention with teacher

training that includes video feedback to support the performance feedback the teachers' received via email (Fallon et al., 2015). Improving and maintaining teacher presentation of praise in a secondary inclusive classroom adds to the current literature and also expands on it by also demonstrating change in classroom disruptive behavior. The SCCs brought additional analysis to the results and more clearly depicted the changes in behavior seen with both teachers and students in the classroom. The SCCs also allowed for measurement of the quality of the interactions offered by the teachers and to assess the change in the quality over time. The current study leads to the possibility of various future research opportunities, including moving the entire intervention with feedback to a virtual model and expanding on the virtual components within the current study. The results of study demonstrate a benefit, that needs to be assessed on a larger scale, both increasing the use of praise statements and decreasing the use of negative statements to improve the quality of teacher interactions, create a positive learning environment, and give teachers the necessary skills to manage a secondary inclusive classroom.

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APPENDIX A

Name:_____

POWERPOINT 1: AVOID COERCION WORKSHEET

1. What are the 8 Coercive Traps discussed in the ppt?
    a. –
    b. –
    c. –
    d. –
    e. –
    f. –
    g. –
    h. –
2. Which 2 or 3 traps do you think you use most often in your teaching?
    a. –
    b. –
    c. –
3. Name 3 consequences, in relation to student behavior, of consistent use of Coercive Traps.
    a. –
    b. –
    c. –

APPENDIX B

Name:_____

POWERPOINT 2: STAY CLOSE WORKSHEET

Put the 7 steps below for Stay Close in order of delivery. Refer to the PowerPoint for assistance.

Order	Step
	Stay Close and use no Coercive Traps
	Get physically close to the student (move towards the student and be within arms-reach)
	Listen while the student is speaking. Talk less than the student. (Do not interrupt or abruptly change the topic)
	Use Empathy Statements. (Express understanding and caring)
	Stay focused and avoid junk behavior.
	Touch appropriately and use appropriate body language (facial expression, tone of voice, and body language match what you are saying)
	Ask open-ended questions

APPENDIX C

Name:_____

POWERPOINT 3: POSITIVE & NEGATIVE INTERACTIONS WORKSHEET

1. What are the steps to giving positive consequences?
   a. –
   b. –
   c. –
   d. –
   e. –
   f. –
2. Give 2 examples of Behavior Specific Praise.
   a. –
   b. –
3. What is "Junk" behavior? How do you determine if a behavior is "Junk"?
   a. –
   b. –
4. Put the following steps to "Pivot" in order of delivery.

	Turn to another student and praise them for their appropriate behavior.
	Say nothing about the junk behavior.
	Stay cool and not use Coercive Traps
	Immediately once the student who displayed junk behavior behaves appropriately acknowledge the appropriate behavior of this student.

APPENDIX D

Survey of Teacher Satisfaction

Please answer the following questions using the 1-5 rating scale, 1 = Strongly Disagree and 5 = Strongly Agree. Read each statement carefully.

1. I understood the steps of the intervention.

1 2 3 4 5

2. I found accessing the PPTs online difficult.

1 2 3 4 5

3. The PPTs were a useful way of conveying background information about the intervention.

1 2 3 4 5

4. I felt the 1-hour in-person discussion of the PPTs clarified the steps to the intervention.

1 2 3 4 5

5. Video clips of me during the in-person training were NOT helpful.

1 2 3 4 5

6. The video feedback was an effective way of improving my implementation of the intervention.

1 2 3 4 5

7. It was not easy to access the video clips on the Pitt Box online cloud space.

1 2 3 4 5

8. The email explaining the video clips helped me to better understand the strategies used in the intervention.

1 2 3 4 5

9. I believe the intervention improved my ability to use praise statements in the classroom.

1 2 3 4 5

10. I feel the intervention decreased my use of coercive statements in the classroom.

1 2 3 4 5

11. Disruptive behavior has NOT decreased since I implemented the intervention.

1 2 3 4 5

12. Appropriate behaviors have increased since I implemented the intervention.

1 2 3 4 5

13. It was relatively easy (e.g. amount of time/effort) to implement the strategies from the intervention.

1 2 3 4 5

14. The intervention process required more effort than it was worth.

1 2 3 4 5

15. I would recommend that other teachers be trained in this intervention.

1 2 3 4 5

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