

THE EFFECTS OF SCHOOL-BASED CONSULTATION ON GENERAL  
EDUCATION TEACHERS' USE OF PRAISE IN THE CLASSROOM

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ABSTRACT

Decades of research has shown that the single most effective method of improving students' appropriate behavior in the classroom is behavioral praise, however it still continues to be one of the least used classroom practices in general education classrooms. Although teacher consultation has been deemed efficacious in improving teachers' skills and competencies, few studies have investigated the utility of consultation on improving educators' general classroom practices. The present study aimed to examine how teacher consultation can improve general education teachers' use of praise in the classroom as well as the behavior functioning of their students, as perceived by the teacher. The study included thirty nine general education teachers who were assigned to one of three groups based on their baseline use of academic and behavioral praise: (1) below average rates of both academic and behavioral praise, (2) below average rates of behavioral praise and average rates of academic praise and (3) below average rates of behavioral praise and above average rates of academic praise. Moderating variables were also examined, specifically if already existing use of academic praise in the teachers' daily practices could serve to increase their use of behavioral praise following consultation compared to teachers who use minimal academic praise at baseline. Within group effect sizes revealed that teachers' use of academic and behavioral praise significantly increased following consultation in all three groups. Analysis of Covariance (ANCOVA) did not reveal any differences between groups at post-test, indicating that pre-existing use of academic praise did not serve as a moderator to improving behavioral praise. While teachers reported improvements in their own behavior, they did not report improvements in their

students' behavior functioning from baseline to post test. Implications for research and practice are outlined.

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## **Chapter I**

### **Introduction**

It has been well established that the key to effective classroom management is prevention. While prevention can come in many shapes and sizes, its trademark seal is that it serves to reduce or prevent disruptive behaviors before they occur (Brophy 1981). Also coined as an antecedent strategy, prevention efforts address the needs of most students in the class. It seeks to establish a classroom environment that is positive, orderly, predictable, and motivating. These efforts result in increased student engagement that will ultimately promote appropriate behavior (Kern & Clemens 2007). Prevention strategies can include rewarding desirable behavior by providing praise, modeling desired behavior, token reinforcement, establishment of clear rules and shaping or extinguishing unwanted behavior through the use of planned ignoring, corrective feedback or punishment (Brophy 1982). While all are important for effective classroom management, positive reinforcement, especially the use of verbal praise can significantly improve behavior. Although positive reinforcement in the form of praise is a widely established evidenced based practice, it is often minimally or ineffectively used (Brophy 1981; Madsen, Becker & Thomas 1968; O'Leary & O'Leary 1977; Sutherland, Wehby & Copeland 2000). Verbal praise is a method of positive reinforcement that is easy to administer, inexpensive, and infinite in quantity. Unlike tangible rewards, one can never "run out of" verbal praise. Because praise can be a potent reinforcer it is important to not only understand the benefits of praise, but it is necessary for teachers to utilize it effectively.

**Evidence for Praise**

The research supporting the use of praise in classrooms has been documented for the past five decades (e.g., Brophy 1981; Hattie 1992; Madsen et al 1968; Sutherland et al 2000; White 1975). In general, praise should be a means of positive reinforcement in which children are reinforced for their appropriate behavior. In its simplest form, praise is defined as “teacher approval or encouragements” (White 1975). Brophy (1981) expanded on this definition as he suggested that praise statements express positive teacher affect towards a child’s behavior and/or places the student’s behavior in context by giving information about its value or its implications about the student’s status. In this context, praise allows for a direct statement of the contingency between the behavior and the reinforcer (Brophy 1981). Hattie (1992) conducted a meta-analysis on one hundred and thirty four studies and found that the most powerful single moderator that enhances student performance is feedback from the teacher about their behavior. Hattie also found that positive reinforcement for appropriate behavior had the greatest effect on student outcomes as he concluded, “The simplest prescription for improving education must be dollops of feedback” (Hattie 1992). As his meta-analysis suggested, it is positive reinforcement, including verbal praise for appropriate behavior that can have a significant impact on improving students’ achievement.

In the Response to Intervention framework, behavioral praise is often viewed as a Tier one strategy. Tier one strategies are typically classroom wide interventions that address the needs of most students in a given class, as most students would benefit from some form of positive reinforcement (Kern & Clemens 2007). For most students, rewarding their appropriate behavior via the use of verbal praise will reinforce

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appropriate behavior and serve to prevent inappropriate behavior from occurring. Madsen and colleagues (1968) found that praising appropriate behavior served to be the most effective in achieving pro-social classroom behavior. When teachers increased their use of behavioral praise (from 1.2-19.2 praise statements per fifteen minute interval to 18.2-35.2 praise statements per fifteen minute interval), inappropriate behavior decreased from 47% to 15% on average, during a twenty minute interval. Comparatively, when only setting clear rules and planned ignoring were utilized, inappropriate behavior actually increased to approximately 66% in a twenty minute interval (Madsen et al 1968). Thus, behavioral praise served as an effective reinforcer to improve students' behavior. While rules and planned ignoring were not effective alone, they may have served to heighten the utility of praise as students were made aware what the expectations were and how to receive attention and rewards from the teacher.

When praise is used to provide encouragement to students, or made contingent on effort, it can have the benefit of building their self-esteem as well as a stronger student-teacher relationship (Brophy 1981; Gable, Hester, Rock & Hughes 2009). Utilizing praise in this manner can serve to improve the climate in the classroom as children excitedly wait for verbal praise and attention rather than being fearful of being chastised for doing something wrong. For example, Burnett (2002) studied the relationship between students' perceptions of the frequency of teacher praise and their perceptions of the classroom environment. Their results indicated that students who perceived that their teacher frequently provided positive feedback reported a more positive relationship with their teacher. Students who perceived receiving more negative feedback reported a more negative relationship with the teacher. Finally, students who reported having a positive

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relationship with their teachers were also found to perceive the classroom environment in a more positive way (Burnett 2002). Thus, the use of behavioral praise does not only serve to improve the behaviors of the students and make the classroom more manageable, but it improves both the student-teacher relationship and the climate of the classroom. These are two factors that are integral for student success.

Praise can also be vicarious. Research has illustrated that praise can have a vicarious effect in that students who observe others being praised for a particular behavior are more likely to engage in that behavior as well (Kazdin 1977; Kern & Clemens 2007). Through vicarious effects, it is hoped that the behavior of the observer will change in the same manner as that of the model. In Kazdin's (1977) investigation of vicarious praise, he demonstrated the effects of reinforcement delivered to some students on the attentive behavior of non-reinforced adjacent peers in a classroom setting. Kazdin found that contingent behavioral praise of attentive behavior in some students increased appropriate behavior in their adjacent peers. Across the thirty eight day study, fifty whole interval observations were conducted, lasting approximately eight minutes. At baseline the participants' attentive behavior ranged from approximately 20-52% per eight minute interval. However when half the participants received praise, their attentive behavior increased to between 74-85% per eight minute interval. Likewise, their adjacent, non-reinforced peers increased their attentive behaviors to between 64-77% (Kazdin 1997). Thus, contingent praise delivered to some students altered the behavior of adjacent peers who received no direct reinforcement (Kazdin 1977). This suggests that praising one student who is behaving appropriately can orient another student to not only what they

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should be doing, but that if they would like to receive praise, they should act in a similar manner.

While most research has focused on increasing pro-social behavior, some research has shown that praise can serve to increase students' academic engagement. Sutherland and colleagues (2000) operationalized academic engagement as sitting quietly, actively participating in the lesson and being on task while completing assignments (Sutherland, Wehby & Copeland 2000). Sutherland and his colleagues investigated the effects of behavior-specific praise on the on-task behavior of students with emotional and behavior disorders. They found that when teachers began using behavior-specific praise (from 1.3 praise statements at baseline to 6.7 statements, per fifteen minute interval) the percentage of intervals the students displayed on-task behavior increased from approximately 48% to 86%. When teachers decreased their use of praise (1.7 praise statements per 15 minute interval), on task behavior only decreased to 62% but increased back up to 83% when behavioral praise was reintroduced (Sutherland, Wehby & Copeland 2000). Thus, giving students positive attention and feedback on their on-task behavior served to increase such behavior in the future.

Finally, praise can be an effective method for improving academic performance. Research has shown that providing praise for students' correct answers as well as on task behavior can serve to be an effective reinforcer. For example, Walker and Hyman (1976) compared the effects of three methods of reinforcement in improving the academic achievement of students who were performing below grade level and engaged in inappropriate or off task behaviors. Students were placed in an experimental classroom for ten weeks and were randomly assigned to one of three experimental groups where

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they received either (1) praise for on-task behavior (2) praise for academic performance or (3) praise for both academic performance and behavior. Students were matched with control students in their home classroom. Measures of academic performance included improvement on two achievement tests in reading and mathematics. Results indicated that while there were no significant differences between experimental groups, treatment in the experimental classroom significantly increased the appropriate behavior and academic achievement of the experimental subjects compared to their matched control participants (Walker & Hyman 1976). Chadwick and Day (1971) found similar results in their investigation of low performing minority students. They found that academic performance (as indicated by accuracy of work, and rate of work completion) significantly increased with teacher verbal praise for academic performance and on task behavior, as well as the implementation of a token economy. Although no distinction was made between teachers' use of academic or verbal praise and changes in student behavior, this suggests that receiving positive feedback from the teacher had significant effects on students' behavior across both academic and behavioral domains.

More recently, Kamins and Dweck (1999) differentiated between person praise and process praise when praising for academic performance. In person praise, the child is praised for their intelligence (i.e. "you're so smart"). In process praise, the child is praised for their effort (i.e., "I like how hard you tried to answer that question") (Kamins & Dweck 1999). Chalk and Bizo (2004) investigated the effects of these two types of praise as they examined the effects of verbal praise for academic performance, for both correct answers and for effort. They compared the effects of specific versus positive praise on students on task behavior, reported self-efficacy, and enjoyment in learning.

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They defined positive praise as a general statement of approval, such as reaffirming a student's correct answer, or praising a student for their intelligence. Specific praise also expressed positive affect, but specified the particulars of the student's accomplishment, and included reinforcing the student for their effort (Chalk & Bizo 2004). After conducting a training for four teachers on the use of praise for both academics and behavior, Chalk and Bizo conducted three observations focused on teachers' use of positive and specific praise and their students' behavior. Although no data was collected on teachers' change in use of praise, their results indicated there were significant increases in both on task behavior and self-efficacy only in the specific-praise condition suggesting that specific verbal praise may be more effective than a general praise statement alone, regardless of if the praise is reinforcing behavior or academic performance (Chalk & Bizo 2004).

In sum, praise is widely recommended as an important positive reinforcement method for teachers. Praise has numerous benefits as it can increase students' appropriate behavior, academic engagement, build their self-esteem, provide encouragement, improve academic performance, as well as build close relationships between student and teachers.

### **Natural and Suggested Use of Praise**

Despite its benefits, research has been inconsistent in its findings of teachers' natural rates as praise as well as a use of a consistent definition of what is optimal. Appendix A outlines the natural rates of praise found in the literature and highlights its lack of consistency. For example, White (1975), through her analysis of sixteen studies, showed that on average elementary school teachers praised 1.3 times per minute to once

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every five minutes during a twenty minute observation. Specifically, teachers were praising students for academic performance on average 6.8 times in a twenty minute observation and 0.6 times for appropriate behavior. White found that in first and second grades this number was at its highest. However, as the grade increased, teachers' use of praise decreased, while their use of corrective feedback increased. Nafpaktis and Mayer found that as teachers' use of corrective feedback increased, so did students' off-task and disruptive behavior (Nafpaktis & Mayer 1985). Additionally, when teachers utilized praise, it was focused mostly on academic performance, while corrective feedback was mainly used to manage student behavior (White 1975). While White found that teacher praise for appropriate behavior was almost nonexistent, Nafpaktis found that almost a third of the behavioral praise statements observed were given at an inopportune time or were vague (Nafpaktis & Mayer 1985; White 1975).

More recently Swinson and Knight (2007) shed more light on the rate and effectiveness of praise to increase appropriate student behavior. Their research indicated that teachers praised students for appropriate behavior approximately 6.9% of a class lesson, yet provided corrective feedback approximately 72.9% of the time (Swinson & Knight 2007). These statistics are consistent with previous findings in that teachers are found to be utilizing corrective feedback more than verbal praise (e.g. Nafpaktis & Mayer 1985; White 1975). It is important to note that Swinson's results are presented in percentages rather than rates, making comparisons between studies difficult. However, Swinson's research does add to previous research in its finding that teachers' use of behavioral praise was more effective than corrective feedback in increasing appropriate student behavior (Swinson & Knight 2007). Nonetheless, while these studies indicate



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that behavioral praise may be more effective than corrective feedback in increasing appropriate behavior, teachers are using praise at such inconsistent rates that it is often difficult to ascertain its effectiveness.

Although the scope of research on positive reinforcement suggest that it is not done enough, few have come forth to state how much praise is enough. However, in the 1970s Good and Growes (1977) studied over one hundred elementary school teachers to evaluate teaching effectiveness. Specifically, they examined teachers that had been identified as either "effective" or "ineffective" and investigated, for those that had been deemed effective, if there were any differences in their teaching practices that made them effective (Good & Growes 1977). What Good and Growes found was that in order for the teachers to be effective, there had to be a balance of praise and corrective feedback. Good and Growes suggest that for approximately every three praise statements, there should be one corrective feedback statement (Good & Growes 1977). Thus, the three to one ratio suggests that praise be predominately used in the classroom to increase appropriate student behavior, with corrective feedback used sparingly when necessary. Current research however suggests that this rule is not being implemented in general education classrooms. For example, Reddy and colleagues (2012) found that across 317 general education teachers, the mean use of praise was 11.35, while the average use of corrective feedback was 8.86. These rates reflect rates averaged across two 30- minute observations. HLM analyses revealed that grade level (K-5<sup>th</sup>) influenced teachers' use of praise statements with teachers assigned to lower grades using more praise than upper elementary school grades. In this investigation, praise for appropriate behavior and praise for academic performance was separated (Reddy, Fabiano & Dudek, 2012).

Overall, these rates suggest that that teachers' use of praise is significantly lower than the guidelines established.

### **How to Use Praise Effectively**

As discussed, praise can be a powerful reinforcer, but only if done correctly. In general, praise can be given within four contexts; for academic achievement, pro-social behavior, following the rules, and for effort (Madsen et al 1968; Brophy 1981). Although any use of praise can be beneficial in creating a positive classroom climate and relationships between student and teachers, for it to effectively improve behavior, specific guidelines should be followed.

It should be no surprise that praise is most effective when given immediately after the desired behavior is observed (O'Leary & O'Leary 1977). If praise (as a reinforcer) is to be used to manage behavior, it should be delivered contingently on the student engaging in the desired behavior (Brophy 1981). In this sense, the child is aware that they received verbal praise because they engaged in desired and appropriate behavior. The potency of behavioral praise as a positive reinforcer significantly decreases as the time between the behavior and praise increases. Immediate praise also fosters students' attention to their own behavior as they foster appreciation of and desirable attributions about their behavior (Brophy 1981). This is important as students need to value their pro-social behavior. Praise should be a means of increasing awareness of its value.

Praise is also most effective when it is behavior specific. Through the use of praise, the teacher specifies to the student the behavior being reinforced (Brophy 1981; Partin 2010; Sutherland et al 2000). Brophy (1981) and O'Leary and O'Leary (1977) both identify specificity as imperative to effective praise. Telling a child "good job" after

they quietly went back to their seat tells the child that they are being praised for something. Stating "John, good job following directions and returning quietly to your seat" specifies to the child the particulars of this accomplishment. As Kazdin indicated, it can also have a vicarious effect as other students learn that if they follow directions and quietly sit down, they may be positively reinforced as well (Kazdin 1977). Such behavior specific statements also provide informative feedback on the appropriateness and successfulness of specific behavior or performances.

Finally, praise should be delivered with sincerity and spontaneity. Rather than give out praise on an interval schedule it should be done with some spontaneity, as the teacher sees the behavior occur. Utilizing this "catching a child being good" method suggests to the students that the teacher is paying clear attention to them, and is sincere in rewarding their accomplishments (Brophy 1981). This is especially true of students who frequently receive reprimands or corrective feedback, as spontaneous praise will make them aware that the teacher is conscious of their appropriate behavior. It also provides opportunities for positive interactions between the teacher and each student (Partin 2010). Finally, it is important to also praise students for their effort, especially for students who attempted a difficult task, both academically and behaviorally as it attributes successes to both effort and ability. It also helps the child foster endogenous attributions about themselves (Brophy 1981).

Latham (1992) illustrated the effects of increasing behavior specific praise through his investigation on increasing positive interactions between teachers and students. At baseline teachers and in-class paraprofessionals averaged seventeen praise statements and thirty four verbal corrective feedback statements per a forty five minute

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class lesson. After providing training and modeling on the use of praise, verbal praise for behavior significantly increased, while corrective feedback decreased. Teachers also reported changes in their teaching practices and self-image as they began to regard themselves as better teachers. They also stated that teaching and classroom management was easier when using positive reinforcement rather than corrective feedback. Finally, they perceived students as being happier in the classroom, most likely as a function of improved student to teacher interactions (Latham 1992).

In sum, educators' use of praise can have significant effects on classroom functioning. When used frequently and effectively it can serve as a powerful intervention to improve student-teacher relationships and student on-task and pro-social behavior while decreasing disruptive behaviors.

### **Teacher Approaches and Interventions for Praise**

#### **Factors Affecting Teachers' use of Praise**

Multiple factors can influence teachers' approaches to their use of praise. Research, although significantly dated, has shown that teachers' personality traits and beliefs have the greatest influence on their teaching practices (e.g., Dodge 1938; Kagan 1992; Martin, Baldwin, & Zin 1995; Witty 1946). For example, research investigating personality and parenting suggests that certain personality traits are correlated with certain parenting behavior. Specifically, Metsapelato and Pulkkinen (2002) found that openness to experience, extraversion, and low neuroticism were associated with parental nurturance. This research has significant implications for teaching practices, especially use of praise, as it would be expected that teachers who frequently praise their students would have similar personality traits as nurturing, authoritative, or emotionally involved parents.

In order to investigate what personality traits are associated with effective teachers Witty (1946) analyzed letters of over 12,000 students describing what they liked most about their teachers. The most frequent traits endorsed were cooperative, kindness and consideration for individuals, flexibility, and interest in students' problems. Although not a personality trait, students also reported that they appreciated the use of recognition and praise (Witty 1946). Dodge (1938) in order to examine a similar research question, analyzed the personality traits of teachers that had been deemed "successful" and "unsuccessful" by their supervisors. Dodge found that the most successful teachers were social, willing to take initiative, less subject to worrying, more sensitive to others, and careful in their decision making (Dodge 1938). While these findings slightly overlap with the results of Witty's findings, they are consistent with the personality traits of high extraversion, low neuroticism, and openness to experiences that Metsapelato and Pulkkinen found were highly correlated with parental nurturance and emotional involvement. This suggests that teachers who are nurturing and emotionally involved with their students may have a stronger predisposition to praise than teachers who are less nurturing and emotionally detached.

While personality factors are important in understanding whether a teacher is innately more likely to use praise, examining their beliefs is important in assessing their ability to change. Albarracin and colleagues (2001) in their theory of reasoned action asserted that the two determinants of an individual's intention to change their behavior is their attitude towards the behavior and the subjective norm of the behavior. Attitudes refer to a person's judgment about whether performing the behavior is positive or negative. Attitudes are a function of a person's beliefs that performing the behavior will

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lead to certain outcomes as well as an evaluation of the presumed outcomes. Subjective norm refers to a person's perception of social pressures applied by important others to perform the behavior (Albarracin, Johnson, Fishbein & Muellerleile 2001). The Evidenced-Based Intervention Workgroup (2005) in their review of increasing use of evidenced-based interventions used this theory to suggest that teachers' beliefs about how effective an evidenced based practice is will lead to their attitude about the practice. The accuracy of their perception of how normative the implementation of the evidenced-based intervention is and the amount of influence those around them will lead to their subjective norm. Their beliefs in conjunction with their subjective norms will determine the likelihood that they engage in the desired behavior (The Evidenced-Based Intervention Work Group 2005). Teachers who do not believe in the effectiveness of an evidence-based strategy will be less likely to incorporate it into their teaching practices than those who do believe it will be effective. Thus, teachers who are nurturing and emotionally involved with their students and/or perceive praise as effective may be more likely to utilize praise or increase their use following performance feedback than teachers who lack these personality factors or beliefs.

### **Teacher Performance Feedback**

Research has shown that the most effective way to improve teaching practices is to give teachers' performance feedback on their instructional and behavior management strategies (e.g., Mesa, Lewis-Palmer & Reinke 2005; Mortenson & Witt 1998; Reinke, Lewis-Palmer & Martin 2007; Scheeler, Ruhl & McAfee 2004). Teacher performance feedback has been defined as a method of providing information or knowledge of

processes and results to promote, transfer, or maintain skills and behavior (Mortenson & Witt 1988).

While multiple modalities for providing teachers feedback exist, there are only two different time periods in which it may be given which has been defined as either immediate or deferred performance feedback (Scheeler 2004). In immediate performance feedback, as soon as the observer notices a teaching practice that needs correction or is noteworthy, the teacher is immediately given the feedback either by stopping their lesson, or giving her the information via note or bug in the ear technology (Scheeler, Congdon & Stansbery 2010). Through immediate feedback the teacher is given feedback in real time and can immediately change her teaching practices. This has the added benefit of the teacher being able to practice this new technique with a coach or peer mentor present, and their students benefit from receiving the most effective teaching practices possible. However, immediate feedback interrupts the teacher's lesson and takes away from teaching time.

On the contrary, in deferred feedback, the teacher receives feedback on their teaching practices after she finishes teaching the lesson. This feedback session can occur anywhere from immediately after the lesson to a few days later. Scheeler and colleagues defined deferred feedback as when an observer takes narrative, quantitative, or frequency data while observing the lesson and then shares the data with the teacher upon completion of the lesson (Scheeler, McAfree, Ruhl & Lee 2010). The benefit of deferred feedback is that the observer sits quietly and unobtrusively during the lesson and thus the flow of instruction is preserved and student attention to the task or the teacher is maintained.

Both immediate and deferred feedback has its strengths and drawbacks. Deciding which modality to use may depend on numerous factors including time, resources, and preferences of teacher, consultant, or coach. Across both modalities, the breadth of research on teacher performance feedback suggests that most effective methods are bug in the ear technology, peer coaching, and teacher consultation with visual performance feedback (e.g. Morgan, Menlove, Salzberg & Hudson 1994; Scheeler, Congdon & Stansbery 2010; Scheeler, McAfee, Ruhl, & Lee 2010). Next, a description of each method is presented.

**Bug in the ear feedback.** While immediate feedback may be desirable to give teachers in the moment feedback, its obtrusive nature often detracts from its effectiveness. However, Scheeler and colleagues (2004, 2006, 2010) have studied the use of bug in the ear technology as a method for providing teachers immediate feedback without interrupting their teaching. Bug in the ear technology is a two piece device in which an ear piece goes into the teacher's ear and is connected wirelessly to a microphone in which a supervisor or observer can quietly and unobtrusively give immediate corrective feedback on the teachers instructional or managerial behaviors (O'Reilly, Renzaglia, Hutchins, Koterba, Bass, Clayton, Halle & Izen 1992; O'Reilly, Renzaglia & Lee 1994). If the teacher can adjust to the bug in the ear device, it can be effective in giving discreet feedback to teachers without interrupting the lesson.

In order to assess the effectiveness of bug in the ear technology, Scheeler and colleagues (2006, 2010) evaluated the use of the technology on teachers use of three-term contingency trials, in which the teacher would ask the students a question (an academic response opportunity), the student would provide an answer, and then the teacher either



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gives the student praise or corrective feedback on their response. Scheeler sought to ascertain if bug in the ear feedback was both effective and acceptable to teachers as a practical method to use in the classroom while teaching. Across both studies Scheeler found that providing corrective feedback via the bug in the ear technology increased teachers' use of three-term contingencies, which suggested that for improving a specific behavior, this method of providing immediate feedback may be effective. While teachers reported that the bug in the ear was more helpful than an observer stopping a class lesson to give feedback, they also reported that there was a significant adjustment period in order to get acclimated to the technology (Scheeler, Congdon & Stansbery 2010; Scheeler, McAfee, Ruhl & Lee 2006). Thus, using such technology in practice may not be practical, as teachers are typically infrequently observed and thus time to adjust to the technology may not be possible.

**Peer coaching.** Peer coaching has been deemed an effective method for giving pre-service teachers "in the moment" feedback on the quality of their teaching (Morgan et al 1994). Peer coaching, unlike other forms of performance feedback, utilizes techniques across both immediate and deferred time domains. This kind of feedback is typically more intensive than other forms of feedback as multiple areas of improvement are targeted. Additionally, the coach or mentor is typically a colleague rather than a school psychologist, principal, or supervisor and the teacher is usually a pre-service teacher or in their first year of teaching (Morgan et al 1994). Morgan and colleagues studied the effects of peer coaching on low performing pre-service teachers. Specifically, Morgan measured improvements in the teachers' abilities in teaching spelling, teaching a reading lesson, the rate of praise statements, and the rate of students' opportunities to

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respond. Morgan found that peer coaching was most effective in increasing teachers' instructional practices, but only slightly increased teachers' behavior management practices, especially their rate of praise (Morgan et al 1994). This may have been due to the wide range of behaviors the peer coaching was targeting, as it may have been near impossible to see significant increases in all behaviors. Additionally, while peer coaching was generally efficacious, the time and commitment that peer coaching required, may not be feasible in a real world setting.

**Consultation with Visual Performance Feedback.** On the other end of the spectrum from bug in the ear feedback is teacher consultation. In this modality of deferred feedback, a teacher either asks or is told to seek consultation to improve on some teaching practice, either class wide or with a particular student. Typically the consultant observes the classroom, and then meets with the teacher to discuss the observation and provide the teacher with feedback. The teacher is then responsible for implementing the interventions or strategies that the consultant and teacher agree upon (Bergan & Kratochwill 1990; Mortenson & Witt 1998; Sheridan & Kratochwill 2007). An ongoing trend in teacher consultation is the incorporation of visual performance feedback. Visual performance feedback is an objective, quantitative, data-based system for providing feedback on a teacher's current performance of targeted behaviors. Typically depicted graphically, visual performance feedback shows the frequency of certain teaching practices, such as praise, during an observation (Reinke et al., 2007). Used in conjunction with consultation, visual performance feedback serves as an objective method for providing feedback on teachers' frequency of using certain strategies so that together the consultant and teacher can discuss strategies for increasing the quality or quantity of

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targeted behaviors. Visual performance feedback can also serve as a progress monitoring tool, to monitor teachers' increased use of various strategies (Mortenson & Witt 1998).

The majority of research on teacher consultation and performance feedback has been focused on increasing intervention treatment integrity in general education classrooms. Typically these studies have been focused on individual student interventions rather than changing a teacher's class-wide teaching practices. For example, Noell and colleagues (1997) evaluated the effectiveness of performance feedback on teacher treatment integrity on an academic intervention for a specific struggling student. The teacher received consultation at the start of the intervention to support the teacher in implementing the intervention and train them on how to collect data. Teachers did not receive any other support until treatment integrity reached low levels. At that time the consultant provided daily visual performance feedback every morning to the teacher on the student's progress and teacher's performance in implementing the intervention. Any parts of the intervention that were not implemented correctly were also discussed with the teacher. Once treatment integrity was high and stable, the teacher no longer received consultation or performance feedback. Results indicated that only when teachers were provided with visual performance feedback in conjunction with consultation did their treatment integrity significantly improve (Noell et al 1997). Mortenson and Witt (1998) conducted a similar study assessing the effectiveness of performance feedback on implementation of a student focused academic intervention. While they provided weekly performance feedback rather than daily, they too found that treatment integrity significantly increased when teachers were provided with performance feedback compared to when they were asked to implement the intervention independently

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(Mortenson & Witt 1998). This finding is important as weekly consultation may be more feasible than daily consultation in practice. Overall these findings suggest that consultation with performance feedback may be an effective method of improving intervention implementation integrity.

To date, only a handful of studies have examined the use of consultation on improving general educators' use of praise as a class-wide teaching practice (e.g. Cossairt, Hall & Hopkins 1973; Mesa et al 2005; Reinke et al 2008; Reinke et al 2007). The majority of research on teacher consultation focused on praise has focused on student outcomes rather than on improving class-wide teaching practices. For example, Cossairt and colleagues (1973) utilized a multiple baseline design to study the effects of consultation and feedback in improving teachers' use of praise to improve specific students' on task behavior. At initial baseline, teachers were only using minimal praise. With only instructions on how to increase their use, their rate only marginally increased. However, with consultation, feedback (verbal not visual performance) and social praise about the quality of their teaching, teachers significantly increased their use of praise. Specifically, teachers' rate of behavior-specific praise increased from 0 to a range of 5-14.5 per fifteen minute class lesson. Student on task behavior increased to approximately 85 %, from a baseline of 7-16% (Cossairt, Hall & Hopkins 1973). Mace, Cancelli, and Manos (1983) extended the work of Cossairt and colleagues by providing teachers with consultation, utilizing Bergen's (1977, 1990) consultation model. Consultation was provided immediately after the consultant observed the class, at which time the data from the observation was discussed. Although a small sample size was used, (three educators who were working to improve one identified student's behavior) Mace and his colleagues

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found similar trends in increased use of praise (Mace, Cancelli & Manos 1983). These similar findings as Cossairt and colleagues suggests that when teachers are given the opportunity to improve on their teaching practices in a supportive environment, they are able to do so in ways that can not only benefit particular students, but the class as a whole.

Both Mesa, Lewis-Palmer, and Reinke (2005) and Reinke, Lewis-Palmer, and Martin (2007) assessed the use of consultation and visual performance feedback on increasing teachers' use of praise as a method of increasing appropriate student behavior. Both studies utilized a multiple baseline design to determine the functional relationship between visual performance feedback and teacher behavior. At baseline all teachers had low and inconsistent use of praise. Like previous consultation studies, teachers were given consultation on how to improve their rate of praise, and then were asked to implement this strategy independently. It was not until a later phase of the study that visual performance feedback was introduced. With the use of visual performance feedback the rate of praise for all teachers across both studies significantly increased (Mesa, Lewis-Palmer & Reinke 2005; Reinke, Lewis-Palmer & Martin 2007). Reinke also found that the consultation with visual performance feedback had high social validity as teachers found the consultation helpful and beneficial, while they reported the visual performance feedback easy to understand and improved their understanding of their strengths and areas of improvement (Reinke et al 2007).

Reinke and colleagues (2008) examined the effects of teacher consultation on teachers' class-wide teaching practices through a single subject multiple baseline design. The Classroom Check-Up is a class-wide consultation model developed to address the

need for classroom-level support while minimizing treatment integrity problems common to school based consultation (Reinke, Lewis-Palmer & Merrell 2008). The purpose of the class-wide consultation model is to assess the classroom, observe the teacher, and provide the teacher feedback based on those observations to identify the teacher's strengths and areas of improvement. The consultant and the teacher then collaboratively identify strategies or interventions to improve on, and the consultant helps the teacher learn how to self-monitor the implementation of the chosen intervention. Reinke and colleagues utilized the Classroom Check-Up model to evaluate the effects of a class-wide consultation model on the teacher implementation of effective classroom management strategies (Reinke et al 2008). Unlike previous research done on consultation, this study was focused mainly on improvement of the teachers' performance rather than on student outcomes.

In this investigation, consultation was given to four general education teachers at the start of the study. Consultation with visual performance feedback was introduced after the teachers independently implemented a classroom wide intervention plan which focused on increased use of praise as a means of decreasing disruptive behavior. Similar with previous research, results indicated that rates of teacher praise increased the most during the visual performance feedback stage. Teachers' use of corrective feedback also decreased as the use of praise increased. Overall, Reinke and colleagues found that the Classroom Check-up plus visual performance feedback was the most useful in improving teacher implementation of classroom management strategies, especially the use of praise. Results suggested that the Classroom Check-Up with visual performance feedback was effective as the large effect sizes ranged from 1.73 to 3.83. Additionally, use of behavior

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praise increased from approximately 0.62 statements to 1.97 statements per ten minute observation. These changes in teaching strategies contributed to positive changes in student behavior through decreased classroom disruptions (Reinke et al 2008). These results suggest that classroom-wide interventions that build upon the teachers' skills and competencies may be a more effective use of consultation than those that are solely student focused. Additionally, consultation with visual performance feedback may be more effective than a single modality of feedback such as consultation alone, or bug in the ear feedback.

Research suggests that teacher consultation may be an effective method for improving teachers' treatment integrity of implementing interventions or strategies to improve identified students' behavior. However, further investigation is needed on how consultation with visual performance feedback can improve general education teachers' class-wide practices. Research has focused on improving teaching practices to improve identified students outcomes, rather than on improving teacher skills and competencies to better the functioning of the entire class. This is especially true for their use of praise. Of particular interest is the use of behavioral praise, specifically how it can serve as a tier-one prevention strategy in the classroom to increase appropriate behavior and decrease inappropriate behavior. Finally, research on personality and teacher effectiveness suggests that certain personality traits may predispose teachers to naturally utilize praise, and thus show greater improvements following consultation. For example, teachers' use of academic praise may help to increase thier use of behavioral praise in conjunction with consultation. However, research is needed to examine if this already existing practice can serve as a moderator to improve behavioral praise.

**Purpose and Research Questions**

The purposes of the present investigation were twofold. First, this study examined the effectiveness of teacher consultation on general educators' use of academic and behavioral praise in kindergarten through fifth grade classrooms. Second, this study assessed use of academic praise as a moderator to examine if teachers who already use academic praise at baseline had higher rates of behavioral praise at post-test compared to teachers who were not using either forms of praise at baseline. Three research questions were addressed:

- 1.) Does CSS teacher consultation yield significant improvements in teachers' rate of behavioral praise in elementary school classrooms at post-test?
- 2.) Does above average rates of academic praise at baseline moderate improvements in rate of behavioral praise at post-test?
- 3.) Does CSS teacher consultation yield significant improvements in teachers' perceived classroom behavioral functioning at post-test?

It was hypothesized that teacher consultation with visual performance feedback would yield statistical improvement in teachers' rate of praise for appropriate behavior and perceived classroom functioning in elementary school classrooms at post-test. This is based on previous research (e.g. Cossairt et al 1973; Mesa et al 2005; Reinke et al 2008) that suggests that teacher consultation is an effective method to increase teachers' use of praise and decrease students' inappropriate behavior. Finally, because research has shown that certain personality traits and beliefs may predispose teachers to innately utilize praise more than others (e.g. Dodge 1938; The Evidenced Based Intervention Workgroup 2005) it was hypothesized that teachers who exhibit low rates of behavioral praise but moderate



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to high levels of academic praise at baseline would exhibit greater increases in their use of praise following consultation than teachers who utilized low rates of both academic and behavioral praise at baseline.

## **Chapter II**

### **Methods**

#### **Research Design**

This study evaluated the effectiveness of consultation on general education teachers' use of behavioral praise in the classroom. A pretest-posttest quasi-experimental model was used to evaluate K-5 general education teachers' use of behavioral praise as measured by the Classroom Strategies Scale – Observer Form. The study included three groups of general education teachers who displayed at baseline: (1) below average rates of both academic and behavioral praise, (2) below average rates of behavioral praise and average rates of academic praise and (3) below average rates of behavioral praise and above average rates of academic praise. Measures of change included change in frequency of praise from baseline to post-test and teachers' self-reported change in behavioral functioning of their class at baseline and post-test. Above average rates (0.5 standard deviation above the mean) of academic praise was evaluated as a moderating variable in increasing teachers' rates of behavioral praise.

#### **Sample**

The sample included approximately 39 general education teachers in New Jersey who participated in a larger federally funded teacher consultation study focused on classroom-wide instructional and behavioral management strategies (see Tables 1). There were no significant differences between those who were part of the larger study and the participants selected for this particular sample at baseline. Participants who identified behavioral praise as a consultation goal were selected to be part of the current investigation. These teachers participated in the larger intervention phase of the

Running Head: EFFECTS OF CONSULTATION ON TEACHERS' USE OF PRAISE Classroom Strategies Scale Project in New Jersey. Participants were assigned to one of three groups as described in Table 2. Due to a lack of consensus or definitive guidelines of what constitutes below average, average, and above average rates of academic and behavior praise (see appendix A for further review), it was determined most efficacious to divide the groups by the standard deviation of the mean. Thus, the first group consisted of teachers who at baseline had below average rates of behavioral and academic praise. The second group consisted of teachers who at baseline had below average rates of behavioral praise, but were using average rates of academic praise. The third group consisted of teachers who had below average rates behavioral praise at baseline, but above average rates of academic praise. Teachers in the first group had rates of academic praise at least 0.5 of a standard deviation below the mean. Conversely, the third group had rates of academic praise at least 0.5 a standard deviation above the mean of the sample as a whole. A 0.5 standard deviation above and below the mean was selected to create the groups as it was a non-artificial means of creating the groups that created the most minimal variance of size between groups.

Table 1

*Teacher Characteristics of CSS Pilot 3 and sample*

Characteristics	Mean	Standard Deviation	Range
<b>Teacher Characteristics of Pilot 3</b>			
<i>Age</i>	<i>39.94</i>	<i>12.2</i>	<i>23-67</i>
<i>Years teaching</i>	<i>11.52</i>	<i>8.05</i>	<i>0-31</i>
<i># students in class</i>	<i>23.65</i>	<i>2.54</i>	<i>17-30</i>
<i># special education students</i>	<i>1.22</i>	<i>2.42</i>	<i>0-11</i>
	<b>Frequency</b>	<b>Percent</b>	
<b><i>Degree</i></b>			
<i>Bachelors</i>	<i>28</i>	<i>58.3</i>	
<i>Masters</i>	<i>19</i>	<i>39.6</i>	

Table 1 Continued

<i>Doctorate</i>	<i>1</i>	<i>2.1</i>	
<b>Gender</b>			
<i>Male</i>	<i>2</i>	<i>4.1</i>	
<i>Female</i>	<i>47</i>	<i>95.9</i>	
<b>Race</b>			
<i>African American</i>	<i>1</i>	<i>2</i>	
<i>Caucasian</i>	<i>45</i>	<i>91.8</i>	
<i>Asian</i>	<i>2</i>	<i>4.1</i>	
<i>Other</i>	<i>1</i>	<i>2</i>	
<b>Teacher Characteristics of Sample</b>			
	<b>Mean</b>	<b>Standard Deviation</b>	<b>Range</b>
<i>Age</i>	<i>39.05</i>	<i>11.56</i>	<i>23-62</i>
<i>Years teaching</i>	<i>11.03</i>	<i>8.01</i>	<i>0-31</i>
<i># students in class</i>	<i>23.5</i>	<i>2.49</i>	<i>17-30</i>
<i># special education students</i>	<i>1.26</i>	<i>2.61</i>	<i>0-11</i>
	<b>Frequency</b>	<b>Percent</b>	
<b>Degree</b>			
<i>Bachelors</i>	<i>23</i>	<i>62.2</i>	
<i>Masters</i>	<i>13</i>	<i>35.1</i>	
<i>Doctorate</i>	<i>1</i>	<i>2.7</i>	
<b>Gender</b>			
<i>Male</i>	<i>2</i>	<i>5.3</i>	
<i>Female</i>	<i>36</i>	<i>94.7</i>	
<b>Race</b>			
<i>African American</i>	<i>1</i>	<i>2.6</i>	
<i>Caucasian</i>	<i>34</i>	<i>89.5</i>	
<i>Asian</i>	<i>2</i>	<i>5.3</i>	
<i>Other</i>	<i>1</i>	<i>2.6</i>	

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Table 2

*Sample Size Per Group*

Group	N	Academic Praise at Baseline	Behavior Praise at Baseline
Low academic praise (.5 SD below mean)	15	5.23	0.87
Average academic praise (.5 above-.5 below mean)	14	12.26	1.5
Above Average academic praise (.5 SD above mean)	10	21.33	3.44
Total	39		

### **Instrumentation**

The *Classroom Strategies Scale* (CSS) is a multidimensional tool used to assess general educators' use of instructional and behavioral management strategies in K-5 classrooms. The CSS (version 3.0) includes Observer and Teacher Forms. The CSS Observer Form is comprised of three assessment stages. In the first stage the observer tallies the frequency of the teachers' use of the eight different positive instructional (concept summaries, academic response opportunities, praise and corrective feedback for academic performance) and behavioral management strategies (clear directives, decreasing vague directives, praise and corrective feedback for behavior). After each observation, the observer completes two Strategy Rating Scales (Stage 2 Assessment – Positive Instructional and Behavioral Management Scales), which measures how often teachers used specific strategies and how often they should have used specific strategies on a 7-point Likert Scale (e.g., gives verbal praise for specific appropriate behavior). After the two classroom observations, the observer then completes Stage 3, the Classroom Checklist, which assesses the presence of specific items or procedures in the

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classroom (i.e., a daily schedule, classroom rules, etc.) Utilizing all three stages of the CSS, the observer conducts two thirty minute observations, observing two separate lessons. The CSS Teacher Form was designed for educators to self-reflect on their use of evidence-based instructional and behavioral management strategies during two specific lessons. The Teacher Form is made up of the same Stage 2 and Stage 3 of the Observer Form.

The CSS (Pilot 3) is being validated extensively through field testing and collaborative consumer and expert input. The Pilot 2 version of CSS Principal/School Personnel Form has strong face, content, and construct validity based on school personnel (consumer) input and decades of evidence-based instructional and behavioral management research. The Stage 2 PIS and BMS Total scales, Composite scales, and Subscales are theoretically and factor analytically derived (confirmatory factor analysis) within and across classroom observations. The CSS has strong internal consistency (Cronbach alphas of .93 and .92) across Stages 1 through 3. Good inter-rater reliability was found for the Stage 1 (Classroom Observation) Total Behaviors ( $r=.94$ ; percent agreement 92%), Stage 2 (Strategy Rating Scales) PIS and BMS Total scales ( $r=.80$ ,  $r=.72$ ; percent agreement 92% and 88%), and Stage 3 Classroom Checklist ( $r=.86$ ; percent agreement 91%). Good test-retest reliability (approximately 2 to 3 weeks, unadjusted) was found for the Stage 1 Total Behaviors ( $r=.70$ ; percent agreement 81%), Stage 2 PIS and BMS Total scales ( $r=.86$ ,  $r=.80$ , percent agreement 93% and 85%), and Stage 3 Classroom Checklist ( $r=.77$ ; percent agreement was 81%). The CSS has been found to have good concurrent and divergent validity with the Classroom Assessment Scoring System (Pianta, La Paro, & Hamre, 2008; Reddy, Fabiano, & Dudek 2012).

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Differential item functioning analyses have revealed that the Stage 2 Strategy Rating Scales and items are free of item bias for important teacher demographic variables (e.g., educational degree, tenure status, years of teaching experience). Preliminary validity studies have found the CSS scores sensitive to change following brief teacher consultation for improving classroom practices (Reddy & Fabiano 2012).

The Teacher Questionnaire assesses teachers' perceptions of the functioning of their class as well as the frequency of their use of instructional and behavior management strategies. The teacher questionnaire comes in two forms; a pre-consultation form and a post-consultation form. Based on a 7 point likert scale, the questionnaire asks teachers to rate their class's functioning from "very much worse" to very much improved". At baseline teachers are asked to answer the questions compared to 4 weeks ago, and at post-test teachers are asked to rate their class compared to the start of consultation. On the pre-consultation questionnaire teachers are asked to indicate how many teachers are in the classroom, how many students there are in the class, how many have Individualized Education Plans, have a Section 504 Accommodation plan, or who the teachers has academic or behavioral concerns about. On the post-consultation form teachers are also asked to rate their use of instructional and behavior management strategies, compared to the start of consultation. For the purpose of this study, the items that will be included in the investigation include: "Please rate the overall behavior functioning of your class" and "please rate your usage of praise for appropriate behavior".

The Usage Rating Profile-Intervention (URP-I) is a thirty one item likert scale questionnaire which assesses the social validity of the intervention. The URP-I is made up of thirty one items, each based on a six point likert scale which ranges from strongly

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disagree to strongly agree. The URP-I assesses teachers attitudes of the consultation through four factors; acceptability, understanding, feasibility and systems support. These factors have been found by research to be important to consider when assessing teachers' use of the consultation, and continued use of the strategies and interventions learned (Chafouleas, Briesch, Riley-Tillman & McCoach 2009). Acceptability refers to teachers' approval of the consultation and asks teachers to rate such statements as "I am motivated to try the intervention" and "I like the procedures used in the intervention strategies". Understanding assesses whether or not teachers understood the skills and tactics of the strategies. Statements in this factor included "I understand how to use the intervention strategies" and "I understand the procedures of the intervention strategies". Finally, feasibility refers to teachers' ability to implement the strategies given the resources or constraints of the system in which they operate. Statements included "The intervention strategies could be implemented for the duration of time as prescribed" and "The intervention strategies could be implemented exactly as described" Teachers were asked to rate their answer on a six point likert scale from strongly disagree to strongly agree. Overall, the URP-I aims to gain an understanding of whether the teacher likes the intervention, if they believe they have the requisite skills to implement the intervention successfully, if it is feasible to implement it in their system, and if they believe they have the external support to do so(Chafouleas et al 2009).

The Teacher Consultation Evaluation Scale (TCES) is a fourteen item questionnaire that asks teachers to rate their perceptions of the consultant, the consultation process, and the strategies and interventions discussed. Teachers were provided with statements such as "the professional I have worked with showed high level



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of interest and concern for me and my classroom”, “the intervention strategies that have been used with my classroom fit my needs” “I am satisfied with my progress” and “overall I am very satisfied with the quality of the consultation I received”. Teachers were asked to rate each statement on a seven point likert scale from strongly disagree to strongly agree. The TCES is given to teachers at the conclusion of the final consultation session. Teachers are given the opportunity to fill out both the URP-I and the Teacher Consultation Evaluation Scale alone, without the presence of the consultant, so that their presence does not influence the teacher’s completion of the rating scales.

### **Consultation**

The consultation model used in this investigation followed a modified version of the four-stages of behavioral consultation as outlined by Bergan and Kratochwill (1990). Consultation consisted of four sessions, approximately thirty minutes long in duration. After each consultation session the consultant conducted two thirty minute observations, across two different lessons, utilizing the Observer form of the CSS and mirroring the procedures of the independent observer.

All observers and consultants participated in training prior to evaluating teachers using the CSS. A DVD video was created that introduced the CSS, which provided an overview of how the ratings are completed, and then showed classroom examples of teachers displaying each of the six behaviors on Stage 1 (e.g., praise statements, academic response opportunities). Then, the CSS Observer Form, which included written examples of each Stage 1 behavior and the operational definition of the behavior, were reviewed with research staff prior to the first observation. To ensure independent

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observers and consultants operated with the same knowledge base for judging the Ideal Frequency of the CSS Stage 2 Rating Scales, research staff attended two training sessions orienting them to the scientific literature guiding the development of the CSS and the recommended frequencies of these strategies. In order to ensure treatment integrity on the part of the consultant once consultation had begun, multiple integrity checks were utilized. First, the consultant completed a consultation session checklist immediately after each session, to ensure they completed every step of the consultation. Additionally, all consultation sessions were audiotaped and reviewed for integrity by the Principle Investigator.

Prior to consultation, all participating teachers were asked to complete the CSS Teacher Form. They were also asked to complete the pre-consultation version of the Classroom Strategies Scale Project: Teacher Questionnaire which asks about the teachers' current teaching practices and classroom functioning. All teachers were first assessed by independent observers through the use of the CSS Observer Form. Independent observers conducted two thirty minute observations and completed all stages of the CSS. This served as the baseline assessment.

Stage one of the CSS is used to create a visual performance feedback graph of the teacher's use of each strategy. This is used during consultation to identify what strategies the teachers are using well, and which ones the teacher could utilize more in the classroom. While all eight strategies are discussed over the course of the four week consultation, focus is put on the strategies the teacher identifies as an area of improvement, specifically in this study, the use of behavioral praise. It is important to note that the teachers' target strategies are ultimately chosen by the teacher, but with

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feedback and guidance from the consultant during the first consultation session. During each consultation session the teacher is given feedback on their use of the strategies during the consultant's observations, and strategies are provided on how to improve both the quality and quantity of the strategies. While one session is focused on positive instructional strategies, another session is focused on behavioral management strategies, specifically for these teachers, behavioral praise. During the fourth and final consultation session, all strategies are reviewed as the consultant focuses on aiding the teacher in sustaining the use of these strategies.

After the fourth consultation meeting, the teacher is asked to again complete the CSS Teacher Form. They are also asked to complete the pre-consultation version of the Classroom Strategies Scale Project: Teacher Questionnaire which asks questions about changes in teaching practices and student functioning from start to completion of consultation. The independent observer then returns to again conduct two observations utilizing the CSS. The completion of these questionnaires in conjunction with the independent observation serves as the post-test. Teachers were also asked to complete the Usage Rating Profile-Intervention, as well as the Teacher Consultant Evaluation Form, to evaluate whether they perceived the consultation to be helpful and beneficial.

### **Data Analysis**

Direct observations of teachers' use of academic and behavioral praise from baseline to post-test were analyzed. Teacher ratings of the behavior functioning of their classroom via the Teacher Questionnaire at baseline and at post-test were also analyzed to determine if they perceived that consultation served to increase appropriate behavior in

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 their classroom. Teachers' use of academic praise at baseline was examined to explore the moderating effects it may have on teachers' ability to increase their use of behavior praise. Finally, teachers' ratings of their improvements in the use of behavioral praise were also examined.

Multiple data analytic techniques were used to address the aforementioned research questions (See Table 4). For practical significance of the consultation and visual performance feedback model, within group effect sizes were computed. Glass's (1977) formula for effect sizes, which estimates the magnitude of change from baseline to the conclusion of the intervention was used to compute effect sizes within groups (Glass 1977).<sup>1</sup> Cohen's rubric for interpreting effect sizes was used. Cohen (1992) suggests a small effect size is between .20-.49, a medium effect size is between .50-.79 and a large effect size is .80 and greater (Cohen 1992).

Analysis of Covariance (ANCOVA) was computed to assess changes in rate of praise, and changes of teachers' perceptions of the behavior functioning of their class from baseline to post test, with baseline measures serving as the covariate. Research has shown that ANCOVA can increase statistical power when analyzing pretest-posttest data (Huck & McLean 1974). Finally, a simultaneous linear regression was computed to analyze whether use of academic praise at baseline served to predict improvement in teachers' ability to increase their use of behavioral praise compared to teachers' who were not using either forms of praise at baseline.

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<sup>1</sup> Glass's (1977) effect size for within group design will be computed using the following formula:

$$ES_{\text{within}} = \frac{\text{treatment} - \text{pre-treatment}}{SD_{\text{pre-treatment}}}$$

Table 3

*Plan of Analysis*

Research Question	Analysis
1.) Does CSS teacher consultation yield significant improvements in teachers' rate of behavioral praise in elementary school classrooms at post-test?	ANCOVA; Glass within group effect sizes
2.) Does above average rates of academic praise at baseline moderate improvements in rate of behavioral praise at post-test?	ANCOVA; Simultaneous Linear Regression
3.) Does CSS teacher consultation yield significant improvements in teachers' perceived classroom behavioral functioning at post-test?	ANCOVA; Glass within group effect sizes

### Chapter III

#### Results

The effects of consultation with CSS score performance feedback on teachers' use of behavioral praise and their perceived classroom functioning were investigated. To evaluate whether pre-existing use of academic praise serves as a moderator to improve behavioral praise, three groups were formed based on teachers' baseline use of academic praise using a 0.5 standard deviation above and below the mean for the overall sample. All thirty nine teachers selected increasing behavioral praise as a consultation goal. Additionally, twenty one of the thirty nine teachers (53.8% of the sample) selected both increasing academic praise and behavior praise as consultation goals. Specifically, four teachers in the above average group, eight teachers in the average group and nine teachers in the below average group identified both academic and behavioral praise as consultation goals.

#### **Does CSS teacher consultation yield significant improvements in teachers' rate of behavioral praise within and between groups at post-test?**

Descriptive statistics, effect sizes, paired-sample t-tests, and one-way analyses of variance were computed for rates of academic and behavioral praise within groups and for the sample as a whole (see Tables 4-7). Table 4 presents the results for rate of academic and behavioral praise across groups at baseline and post-test. Descriptive statistics revealed that teachers' mean and variability of academic praise ( $M= 12.58$ ,  $SD= 7.99$ ) was higher than behavioral praise ( $M= 1.68$ ,  $SD= 1.99$ ) at baseline. The same pattern was noted at post-test (academic praise  $M= 18.41$ ,  $SD=13.50$ ; behavioral praise

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$M= 7.82, SD= 6.23$ ). Paired sample t-test results indicated that rate of academic and behavioral praise statistically increased at post-test following CSS consultation (academic praise  $t(38)=42.9, p=.006$ ; behavior praise  $t(38)=6.58, p<.001$ ). Within group effect sizes (ESs) revealed that CSS consultation resulted in medium positive effects on use of academic praise ( $ES=.76$ ) and large positive effects on use of behavior praise ( $ES = 3.03$ ).

Table 5 presents two separate one-way analyses of variance (ANOVA) on the rate of academic and behavioral praise between groups at baseline. Results revealed that the three groups were statistically different in their use of academic and behavioral praise at baseline (academic praise  $F(2, 38) = 121.91, p=0.00$ ; behavior praise  $F(2,38)= 4.87, p=0.013$ ). Tables 6 and 7 present the descriptive statistics and ESs for academic and behavioral praise between groups at baseline and post-test. Descriptive statistics showed that at post-test teachers in the Above Average group had the highest mean and variability of academic praise ( $M=25.4, SD= 20.9$ ), followed by the Average group ( $M= 20.32, SD= 10.32$ ) and the Below Average group ( $M= 12.63, SD= 6.29$ ). Within group ESs revealed large positive effects of consultation on use of academic praise for teachers in the Below Average group ( $ES= 3.77$ ) and the Average group ( $ES= 2.57$ ). ESs showed a small positive effect of consultation for the teachers in the Above Average group ( $ES= 0.37$ ). A similar pattern was observed for behavioral praise. At baseline, teachers in the Above Average group showed the highest mean rate and variability ( $M=3.15, SD= 2.07$ ), followed by teachers in the Average group ( $M= 1.5, SD= 1.98$ ) and the Below Average group ( $M= 0.87, SD= 1.43$ ). At post-test, teachers in the Above Average group had the highest mean rate and variability of behavioral praise ( $M= 10.65, SD= 7.31$ ), followed by the Average group ( $M= 7.14, SD= 6.88$ ) and the Below Average group ( $M= 6.27, SD=$

4.63). Within group effect sizes revealed large positive effects of CSS consultation for teachers in all three groups (Above Average group  $ES=3.63$ ; Average group  $ES= 2.85$ ; Below Average group  $ES= 3.77$ ). Overall, these results suggest that CSS consultation improved teachers' use of both academic and behavioral praise across all three groups.

Table 4

*Descriptive Statistics for Academic and Behavioral Praise at Baseline and Post-Test (n=39)*

Behavior	Baseline Mean (SD)	Baseline Range	Post-Test Mean (SD)	Post-Test Range	t-Test	ES
Academic Praise	12.58(7.99)	1.0-30.0	18.41(13.50)	3.5-65.0	2.9*	0.76
Behavior Praise	1.68(1.99)	0-6.5	7.82(6.23)	0.5-26.50	6.58***	3.03

Note. \*  $p<0.05$ ; \*\*\* $p<.001$ .

Table 5

*Analysis of Variance for Academic and Behavior Praise Between Groups At Baseline*

Source	SS	Df	MS	F	p
Academic Praise Between groups	2114.98	2	1057.49	121.91	0.00***
Total	2427.27	38			
Behavior Praise Between groups	31.96	2	15.94	4.87	0.01**
Total	150.24	38			

Note. \*\* $p<.01$ , \*\*\* $p<.001$



Table 6

*Descriptive Statistics for Academic Praise Between Groups at Baseline and Post-Test*

Academic Praise Group	Baseline Mean (SD)	Post-Test Mean (SD)	ES
Above Average	24(3.76)	25.4(20.9)	0.37
Average	12.29(3.12)	20.32(10.32)	2.57
Below Average	5.23(2.04)	12.63(6.29)	3.62

*Note.* Table 6 provides means and standard deviations for each group's use of academic praise at baseline and at post-test as well as each group's within group effect size.

Table 7

*Descriptive Statistics for Behavioral Praise Between Groups at Baseline and Post-Test*

Academic Praise Group	Baseline Mean (SD)	Post- Test Mean (SD)	ES
Above Average	3.15 (2.07)	10.65 (7.31)	3.63
Average	1.5 (1.98)	7.14(6.88)	2.85
Below Average	0.87 (1.43)	6.27 (4.63)	3.77

*Note.* Table 7 provides means and standard deviations for each group's use of behavior praise at baseline and at post-test as well as each group's within group effect size.

**Does above average rates of academic praise at baseline moderate improvements in rate of behavioral praise at post-test?**

Two analyses of covariance (ANCOVA) were computed to assess the moderating effects of: (1) academic praise between groups on changes in academic praise and (2) academic praise between groups on changes in behavior praise. Table 8 presents results of the ANCOVA for academic praise, with rates of baseline academic praise serving as the covariate. Tests for homogeneity indicated that the assumption could be met. Results

indicated that there was no significant effect of group on teachers' improvements in their use of academic praise following CSS consultation,  $F(2, 39) = 0.54$ ,  $p = 0.59$ . Table 9 presents ANCOVA results for behavioral praise, with baseline rates of behavioral praise serving as the covariate. Tests for homogeneity indicated that the assumption could be met. Results suggested that there was no significant effect of group on teachers' improvements in their use of behavioral praise following CSS consultation,  $F(2, 39) = 0.372$ ,  $p = 0.69$ .

Because results of the one-way ANCOVA were non-significant, further analyses were conducted to assess if academic praise could have a value as a predictor to increased use of behavioral praise. A simultaneous linear regression for baseline academic praise on gain scores (i.e., baseline-post-test scores) of academic and behavioral praise was computed. Results suggested that academic praise at baseline did not predict higher rates of behavior praise at post-test ( $b = 0.17$ ,  $t(38) = 2.28$ ) indicating that baseline academic praise could not predict teachers' ability to improve their behavior praise after consultation.

Table 8

*Analysis of Covariance for use of Academic Praise at Post-Test between Groups*

Source	SS	df	MS	F	P
Baseline academic praise	413.27	1	413.27	2.59	0.12
Group	171.99	2	85.99	0.54	0.59
Error	5603.17	35	160.09		
Total	20145.5	39			

Table 9

*Analysis of Covariance for use of Behavioral Praise Between Groups at Post-Test*

Source	SS	df	MS	F	p
Baseline behavior					
praise	93.33	1	93.33	2.59	0.18
Group	26.86	2	13.43	0.38	0.69
Error	1261.86	35	36.05		
Total	3858.5	39			

**Does CSS teacher consultation yield significant improvements in teachers' perceived classroom behavioral functioning at post-test?**

Descriptive statistics, effect sizes, and paired-sample t-tests for teachers' ratings of their overall classroom behavior functioning were computed (see Table 10-11). Due to some missing data, analyses were conducted for thirty five of the thirty nine teachers. Visual inspection of records revealed that missing data was random not systematic. Descriptive statistics showed that teachers' mean rating and variability were slightly higher at baseline ( $M=5.37$ ,  $SD= 0.91$ ) then at post-test ( $M= 5.1$ ,  $SD= 0.82$ ). Within group ESs revealed a small negative effect of teachers' ratings of classroom behavior functioning following CSS consultation ( $ES=-0.29$ ). Paired sample t-test results revealed no statistically significant within group differences,  $t(34)=1.56$ ,  $p=0.12$ .

Table 10 presents descriptive statistics for teachers' ratings of overall classroom behavior functioning between groups. Results show that all groups slightly decreased in their mean rating of their classroom behavior functioning. Within group ESs revealed a medium negative effect for ratings of classroom behavior functioning following CSS consultation for teachers in the Above Average group ( $ES= -0.74$ ), and a small negative

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effect for teachers in the Below Average group ( $ES=-0.31$ ). No effect was found for teachers in the Average group ( $ES= -0.02$ ). A one-way analysis for covariance was computed, with baseline ratings of classroom behavior functioning serving as the covariate (see Table 11). Tests for homogeneity indicated that the assumption could be met. Results showed that following CSS consultation there was not a significant effect of group on teachers' perceptions of their overall classroom behavior functioning,  $F(2, 35)=0.29, p=0.75$ . Finally, descriptive statistics were computed for teachers' ratings of their use of behavioral praise at post-test. Teachers' mean rating and variability ( $M=5.67, SD=0.87$ ) indicated that they consistently rated their use of behavioral praise as "much improved" from the start of consultation.

Table 10

*Descriptive Statistics for Teachers' Ratings of Behavioral Functioning Between group at Baseline and Post-Test*

Academic Praise			
Group	Baseline Mean (SD)	Post-Test Mean (SD)	ES
Above Average	5.7(0.67)	5.2 (1.03)	-0.74
Average	5.23(0.93)	5.21(0.97)	-0.02
Below Average	5.25 (1.06)	4.92(0.27)	-0.31

Table 11

*Analysis of Covariance for Teachers' Ratings of Class Behavioral Functioning Between Groups at Post-Test*

Source	SS	df	MS	F	p
Baseline perceived beh. Functioning	1.09	1	1.09	1.6	0.22
Group	0.39	2	0.2	0.29	0.75
Error	21.12	31	0.68		
Total	928	35			

*Social Validity of CSS Consultation*

Two measures were used to assess the social validity of the CSS consultation model. The Usage Rating Profile-Intervention: Modified Version (URP-I) and the Teacher Consultation Evaluation Scale (TCES) were completed by all teachers at post-test. As shown on Table 12, descriptive statistics were calculated for each of the three factors that comprise the URP-I; Acceptability, Understanding, and Feasibility. Descriptive statistics indicate that across acceptability, understanding, and feasibility, teachers endorsed on average between slightly agree to agree. Teachers' rating were highest for Feasibility ( $M= 4.83$ ,  $SD= 0.84$ ), followed by Understanding ( $M= 4.42$ ,  $SD= 0.44$ ) and then Acceptability ( $M= 4.14$ ,  $SD= 0.61$ ).

Table 13 presents the descriptive statistics for TCES a 14 items questionnaire. Item means ranged from 5.36-6.69, indicating that teachers overall were very satisfied with the CSS consultation process and their assigned consultants. Overall teachers appeared to find consultation very helpful in improving their skills and competencies in the classroom.

Table 12

<i>Descriptive Statistics for URP-I</i>		
Factor	Mean (SD)	Range
Acceptability	4.14(0.61)	2.53-5.07
Understanding	4.43(0.44)	3.5-5.88
Feasibility	4.83(0.84)	2.63-6.00

Table 13

*Descriptive Statistics for Teacher Consultation Evaluation Scale*

Item	Mean (SD)	Range
The professional I have worked with showed a high level of interest and concern for me and my classroom.	6.69(1.09)	1-7
The professional I have worked with showed a high level of skill.	6.47(1.32)	1-7
The intervention strategies that have been used with my classroom fit my needs.	6.28(1.26)	1-7
The intervention strategies that have been used with the classroom fit with my teaching style.	6.19(1.37)	1-7
I feel better prepared to work with children with challenging behaviors in my classroom.	5.71(1.32)	1-7
I feel better prepared to teach children in my classroom.	5.69(1.32)	1-7
I have applied the skills I have learned to working with other children in my classroom.	6.37(0.81)	4-7
The professional has helped me find ways to apply the content of our discussions to specific classroom situations	6.31(0.87)	4-7
I would work with staff from this project again.	6.09(1.31)	2-7
The demands placed on me by the assessment components (e.g. completing forms, interviews) of this project were reasonable.	5.49(1.60)	2-7
The demands placed on me in all other areas of the project except assessment have been reasonable.	5.77(1.37)	2-7
The issues that originally prompted my participation in the project have been much improved.	5.36(1.38)	1-7
I am satisfied with my progress.	6.00(1.24)	1-7
Overall, I am very satisfied with the quality of the consultation I received.	6.28(1.21)	1-7

## **Chapter IV**

### **Discussion**

This study was a preliminary investigation to assess the effectiveness of CSS consultation with visual performance feedback on general education teachers' use of behavioral praise. For this investigation three groups were formed to examine the moderating effects of baseline use of academic praise on behavior praise following consultation. Overall, results suggested that all teachers increased their use of both academic and behavioral praise from baseline to post test. Findings revealed that following CSS consultation, teachers had an increased use of both academic and behavioral praise across all three groups. Additionally, educators' pre-existing (baseline) use of academic praise did not moderate changes in their behavioral praise at post-test. Finally, no significant differences were found between teachers ratings of their classroom behavior functioning from baseline to post-test.

Many of the findings from the present investigation were consistent with previous research. This current study provided further support that teachers are minimally and inconsistently using behavioral praise due to the finding that at baseline, the entire sample was utilizing low levels of behavioral praise. Both White (1975) and Nafpakitis and Mayer (1985) illustrated teachers' minimal and inconsistent natural rates of behavior praise. White and Nafpaktis also suggested that when teachers do use praise, it is mainly for academic performance or effort (Nafpakitis & Mayer 1985; White 1975). Results again support this notion, as teachers' rates of academic praise at baseline were significantly higher than their rates of behavior praise.

Consistent with previous research, consultation with visual performance feedback did appear to be an effective method for improving teachers' use of both academic and behavioral praise (e.g., Cossairt et al 1973; Mesa et al 2005; Reinke et al 2007; Reinke et al 2008). Overall, all the three groups showed significant improvements in their use of behavior praise following CSS consultation. Large positive ESs for the below average and average groups were found for their use of academic praise. In contrast, the above average group showed minimal improvement in their use of academic praise. However, because this group was using academic praise frequently at baseline, there may not have been a strong focus on this skill during consultation. As noted, large positive within group ESs were found for behavioral praise. While research has found consultation with visual performance feedback effective in improving intervention treatment, these results suggest that consultation with teacher performance feedback can be useful as a Tier one prevention strategy to improve teachers' classroom practices to benefit the entire class. A small research base supports this notion as well (i.e., Cossairt et al 1973; Reinke et al 2008). However, these studies have been conducted with small sample sizes (i.e.,  $n < 5$ ), making it difficult to generalize the findings to the general population. Cossairt and colleagues found in their investigation ( $n=5$ ) that as teachers' rate of praise increased, students' inappropriate behavior decreases (Cossairt et al 1973). In another study, Reinke and colleagues, with a sample size of four, found very large ESs from baseline to post-test in teachers' improvements in their use of behavior praise with the use of consultation with visual performance feedback (Reinke et al 2008). As this current study has a significantly larger sample size than ones that preceded it, it provides further support for



the notion that consultation with visual performance feedback can be effective in improving teachers' use of praise.

Two main findings from this investigation are inconsistent with previous related research. Results in this study did not support the notion that pre-existing use of academic praise would serve as a moderator for use of behavioral praise following consultation. This is in contrast to research on teachers' personality and ability to change (e.g., Evidenced- Base intervention Workgroup 2005; Witty 1946). What these bodies of research suggests is that certain personality traits (e.g., high extraversion, low neuroticism, openness to experience) may predispose teachers to innately use praise in their daily practices, while certain beliefs or attitudes about a given practice or intervention will influence their ability to try out or implement an intervention even when coaching or consultation is provided. Several explanations can account for this finding. First, all of the teachers in the sample volunteered to participate in the study, and may have had been particularly motivated to improve their classroom practices. Two pertinent theories of change models, the Theory of Reasoned Action and Rogers' Innovation-Diffusion theory suggests that having a positive attitude and wanting to change are key ingredients in implementing and sustaining use of new strategies. The Theory of Reasoned Action posits that a person's attitudes in conjunction with the subjective norm of the system will affect if and how a person changes (Albarracin et al 2001). Thus, participating teachers in this study may have strong positive attitudes about receiving one-on-one coaching/consultation and improving their teaching practices which may have created a positive subjective norm at the school. Moreover, Rogers' Innovation-Diffusion theory also suggests that there are five characteristics that improve the

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successfulness of change. These are relative advantage, compatibility, complexity, trialability and observability (The Evidence-Based Intervention Work Group 2005; Rogers 2003). Taken together, these two theories suggests that the teachers in the sample may have made significant improvements in their use of praise because they believed it would improve their students' academic performance or behavior, valued the expertise or knowledge of the consultants and project staff, and were motivated to improve their teaching practices to benefit their students. Additionally, it is important to note that the distribution of scores was examined, to assess if teachers who made the least amount of change in their use of praise from baseline to post test, did not perceive the CSS consultation as helpful or effective. Results showed that there was no pattern between teachers who made minimal growth during consultation and teachers who rated the consultation as ineffective. Further research is warranted on how this small group of teachers did rate the consultation as effective, but still improvements in their use of academic or behavior praise. Another explanation may be that participating teachers had certain personality characteristics which were more compatible with using praise. Traits such as high extraversion, low neuroticism and openness to experiences are found to be highly correlated with nurturance and emotional involvement. Teachers who possess such characteristics may be more likely to utilize, or improve their rates of praise compared to teachers that lack these qualities (e.g., Dodge 1938; Metsapelato & Pulkkinen 2002; Witty 1946). Thus, it may have been that in this study teachers were motivated to improve their teaching practices, saw value and the benefit of utilizing praise, or held personality characteristics that were compatible with the use of praise. However, this warrants further research.

Finally, results in this study did not support some previous findings that found that increased use of behavioral praise resulted in improved overall classroom behavior functioning (Kazdin 1977; Madsen et al 1968; Sutherland et al 2000). Research has suggested that the most effective way to improve student behavior is to provide students with specific positive feedback on their behavior (e.g., Hattie 1992; Madsen et al 1968; Sutherland et al 2000). It is important to note that in this study only one item of teacher self-report was used to assess change in student behavior, not direct observation of student behavior like previous research has utilized. In this study, teachers overall rated that their use of behavior praise significantly improved following consultation. Independent observers also reported that teachers' rates of praise increased from baseline to post-test, thus confirming teachers' reports. However, teachers' increased use of praise did not appear to be related to their perceptions of their students' behavior functioning. Multiple factors may have influenced this. First, teachers may be hesitant to report poor behavior functioning of their students as they may perceive it to be a poor reflection on themselves. In Roache and Lewis's (2011) survey of 145 teachers, teachers reported utilizing positive proactive classroom management strategies as well as consequences and punishment, but did not report that their students had any significant behavior difficulties. Teachers also reported that classroom management was a "minor concern" (Roache & Lewis 2011). With tenure reform occurring throughout the country, and the large academic demands put on teachers, teachers may be more willing to report the classroom management strategies they believe they are using, but be hesitant to report behavioral difficulties of their students. Unfortunately, due to these issues in relying on teacher report, conclusions cannot be made if teachers' increased use of praise improved their

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perceptions on their class's behavior functioning. It would be beneficial for further research to assess classroom behavior functioning from ratings of independent observers to investigate whether increased rates of behavior praise does improve overall classroom behavior functioning.

### **Social Validity of the CSS Consultation**

In consultation, as with any treatment, assessing the social validity is imperative. If teachers do not perceive the consultation as beneficial, the interventions as effective or feasible to implement, not only will the intervention not be successful, long-term change will not occur (Gresham & Lopez 1996). Social validity is also important when considering potential barriers to teaching practices being utilized with high integrity (Reinke et al 2007). Overall, teachers in the current investigation reported the strategies and tactics for improving their use of praise to be acceptable, useful, and feasible to implement given the resources and constraints of the systems in which they worked. Most noteworthy however, was their ratings of the consultation process and the consultants with whom they worked with. Teachers reported very strongly that they found the consultation very beneficial, and that it was a supportive and helpful modality for improving their use of academic and behavioral praise. They also reported that the consultants were very knowledgeable, professional, and supportive. Because teachers valued the consultants, and the consultation they received, it may have helped to improve the integrity at which they used the strategies learned and sustained use of them past the end of consultation. As previously noted, a small group of teachers rated the consultation as unhelpful or ineffective, however still made significant improvements in their use of behavior or academic praise. Nonetheless, these findings help to solidify the use of

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consultation in schools, as the breadth of studies on teacher consultation have also reported strong social validity for its use in schools (e.g. Mesa et al 2005; Mortenson & Witt 1998; Noell et al 1997; Noell et al 2000; Reinke et al 2008).

### **Implications for Practice**

With increased pressures for teacher effectiveness and educational reform, school administrators are turning to school psychologists to help general education teachers improve their use of evidence-based practices related to student achievement. As Tillery, Varjas, Meyers and Collins (2010) suggested, teachers value the importance of effective classroom management, but need further training and support to utilize behavior management strategies effectively. Simonson (2010) investigated how to best improve teachers' classroom management skills, specifically their use of prompting students and providing praise for appropriate behavior. While both trainings and performance feedback were provided to teachers, teachers' use of these strategies significantly improved with the use of performance feedback, suggesting that training alone was not sufficient (Simonson 2010). It is important to note that during CSS consultation, consultants often gave teachers strategies to help them remember to incorporate academic or behavior praise into their teaching practices. For example, consultants suggested that teachers strategically place post-it stickers with the letter "P" around the classroom as visual reminders. Consultants also suggested that the teachers write the letter "P" on their lesson plans, or place a penny in their pocket, and move it from one pocket to the next every time they utilized academic or behavior praise. These tactics helped the teachers incorporate the strategies into their practice, and therefore may have improved the sustainability of use, once consultation had ended. Thus, the use of individualized

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methods, such as consultation and performance feedback, can be an effective way for school psychologists to help improve teachers' classroom management skills while benefiting a large amount of students.

As discussed, consultation is a useful tool for school psychologists as it is a way to reach a large number of students in a short amount of time. Within the framework of Response to Intervention, the effectiveness of consultation can be heightened when it is used to help the teacher implement class-wide preventive strategies. This is especially true of the CSS consultation model as CSS consultation focuses on tier-one teaching practices that serve to improve the functioning of all students in a given class. Through use of the CSS Observer Form the consultant can provide the teacher with objective data on their progress in improving use of such strategies. The CSS Teacher Form allows the teacher to reflect on their use of the same strategies. Thus, the CSS consultation is a collaborative process in which teacher and consultant work together to identify areas in need of improvement and develop strategies and tactics together. For many teachers, use of behavioral praise is a skill that is often targeted for improvement. As Kerns and Clemens (2007) suggest, behavioral praise is an archetype prevention strategy as it promotes pro-social skills, academic engagement, and on-task behavior. Research has also found that students perceive praise as beneficial. Burnett (2001) surveyed elementary school students to evaluate their preferences for praise used in the classroom. Specifically, he measured students' preferred frequency of being praised, whether students preferred praise for effort or ability, and if students preferred to be praised publicly or privately. Overwhelmingly, the majority (approximately 90%) of students reported they wanted be praised either often or sometimes, both for academics and

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behavior. Additionally, most students also stated that they rather be praised for their effort rather than for their ability (Burnett 2001). This suggests that students are motivated and reinforced from praise and positive reinforcement from their teacher. It is most likely the experience of being rewarded by an adult they admire or look up to that is rewarding for young children. While teachers also believe in the benefits of praise, the evidence that it is used minimally and inconsistently suggest that this is an opportune area for school psychologists to focus on. Thus, CSS Consultation is an effective tool for school psychologists to use when helping teachers improve their use of praise.

### **Limitations**

The present study includes limitations. First, because this study used multiple inclusionary criteria to select teachers for the sample and assign them to one of the three groups, random assignment could not be utilized. Second, the size of the sample groups was modest and offered limited power. Third, a control group was not use on this study which precludes definitive conclusions about the overall effectiveness of the CSS consultation. While treatment integrity on the part of the consultant was collected, it was collected in the form of a checklist that the consultant completed at the end of every week. No methods of assessing treatment integrity on the part of the teachers were utilized, not making it possible to assess for their use of the teaching strategies when the consultant was not in the room. Previous consultation studies have shown that use of treatment integrity checklists have increased accountability and integrity of intervention implementation on the part of the teacher (Noell et al 1997; Noell et al 2000; Sanetti & Kratochwill 2007). Additionally, Sanetti and Kratochwill (2007) suggested discussing the importance of treatment integrity at the start of consultation, and then using multiple

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methods to assess for integrity during implementation of the intervention (Sanetti & Kratochwill 2007). Thus, future studies may want to utilize treatment integrity measures for both the consultant and the teachers to ensure protocol is being followed to the highest integrity possible.

### **Directions for Future Research**

This study offer new directions for research. First, it is important to investigate why teachers are using minimal or inconsistent rates of behavioral praise in the classroom. Specifically, it is important to assess whether this is a product of teacher education training programs, if there are specific traits or skills that predispose teachers to utilize praise more than other teachers, or if its effectiveness is simply not valued or known. This is an important area as the large body of research suggests that praise is a beneficial way to improve student behavior, improve the relationship between student and teacher, and create a positive climate in the classroom (Brophy 1981; Burnett 2002; Swinson & Knight 2007). Second, research is needed that further establishes consensus on the optimal rate of praise for academic performance and appropriate behaviors in general education classrooms. Additionally, future research on use of praise should assess and differentiate between appropriate and inappropriate use of praise in the classroom. Praise can only be an effective means of changing behavior if used appropriately. Third, research is warranted on practical ways to effectively train and coach teachers to use optimal rates of praise in their daily instruction. Although research suggests that consultation is effective in improving teachers' skills and competencies, further studies are needed to investigate whether or not these skills or strategies are maintained once consultation has ended, and if not, what factors inhibit teachers from



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sustaining the changes made during consultation. Research suggests that often once consultation ends rates of use of praise decrease back to baseline (Reinke et al 2008; Sutherland et al 2000). For example, Sutherland and colleagues (2000) showed that once consultation stopped, rates of use of praise decreased back to baseline, but when consultation was reintroduced, rates increased (Sutherland et al 2000). Thus, future studies should investigate how to sustain use of skills learned, such as the use of booster sessions, to make new strategies part of teachers' repertoire. Finally, future research conducted on consultation with visual performance feedback should utilize control groups so that the clinical effectiveness of consultation can be solidified.

### **Conclusion**

Overall, consultation with visual performance feedback may be an effective method for improving teachers' classroom practices. This study provided further evidence that teachers are infrequently using behavioral praise in the classroom, despite the large research base that suggests its' effectiveness. By providing teachers with consultation through a supportive and collaborative relationship, significant change can be made. Findings from this study build on the research that has shown behavioral consultation as an effective means to improve teachers' classroom practices (e.g., Cossairt et al 1973; Mesa et al 2005; Reinke et al 2007; Reinke et al 2008). This study provides support that consultation may be an effective method for promoting tier one classroom management strategies and improving teachers' class-wide skills and competencies and thus improving student outcomes.

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## Appendix A: Rates of Academic and Behavioral Praise at Baseline

Study	Praise for appropriate behavior or academic performance?	N	Population	Reported Rate	*Converted rate
Cossairt, Hall & Hopkins (1973)	Behavior	N= 3	General education	M= 0 per 15 minute observation	M= 0 per 15 minute observation
White (1975)	Academic  Behavior	N=104 (meta-analysis)	General education	M=.34 per minute  M= .03 per minute per 20 minute observation	M= 6.8  M= 0.6 per 20 minute observation
Madsen, Becker & Thomas (1978)	Behavior	N=2	General education	M= 15.5 across a 20 minute observation	M= 15.5 per 20 minute observation
Nafpaktis & Mayer(1985)	Behavior	N= 87	General education	M=27 over 3 30 minute observation	M= 9 per 30 minute observation
Martens, Hiralall & Bradley (1997)	Behavior	N= 1	Special education	M=6.0 praise statements/ 30 minutes towards Student A, M= 8.4 praise statements/ 30 minutes towards Student B	M= 7.2 per 30 minute observation
Sutherland, Wehby &	Behavior	N=1	Special	M= 2.3 per 15 minute	M= 2.3 per 15 minute

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Copeland (2000)			Education	observation	observation
Sutherland et al (2002)	Combined**	N=20	Special education	M= 0.646 per min across 15 minutes	M=9.69 per 15 minute observation
Mesa, Lewis-Palmer & Reinke (2005)	Behavior	N= 2	General education	Teacher 1 M= 0.88 per minute, Teacher 2 M= 0.87 per minute	No duration of observation was reported, rate could not be converted
Swinson & Knight (2007)	Academic  Behavior	N=20	General education	14% of statements across 20 observations  6.9 % of statements across 20 observations	No total number of statements were reported, rate could not be converted
Reinke, Lewis-Palmer & Merrell (2008)	Combined	N= 4	General education teachers	Teacher 1 M=0.39, Teacher 2 M= 0.55, Teacher 3 M= 1.03, Teacher 4 M= 0.48/ 10 minutes	M= 1.84 per 30 minute observation
Reddy et al (2012)	Combined	N= 317	General education teachers	M= 11.35, Range= 0-58.5	M= 11.35, R= 0-58.5 per 30 minute observation
<b>Pilot 3 CSS data</b>	<b>Academic  Behavior</b>		<b>General education teachers</b>	<b>M=13.08, R= 1-45.50</b>  <b>M= 2.20, R= 0-115</b>	<b>M=13.08, R= 1-45.50</b>  <b>M= 2.20, R= 0-115 per 30 minute observation</b>

\*Rate of approval as defined by White (1975) = Number of teacher approvals/ "actual time observed"

\*\*Combined indicates that authors calculated general rates of praise and did not distinguish from praise for appropriate behavior or praise for academic performance or effort.