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Public Versus Private Praise: A Direct Behavioral Comparison in Secondary Classrooms

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PUBLIC VERSUS PRIVATE PRAISE: A DIRECT BEHAVIORAL COMPARISON IN

SECONDARY CLASSROOMS

by

John Travis Blaze

Abstract of a Dissertation
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

August 2012

ABSTRACT

PUBLIC VERSUS PRIVATE PRAISE: A DIRECT BEHAVIORAL

COMPARISON IN SECONDARY CLASSROOMS

by John Travis Blaze

August 2012

The purpose of the present study was to compare the effects of teacher
public and private praise on students' appropriately engaged behavior (AEB) and
disruptive behaviors (DB). Overall, four general education classrooms in southern
Mississippi employed a multiple-baseline design across two pairs to assess the
effects of public and private praise. Each classroom's mean percentage of
observed intervals of AEB and DB across public and private praise intervention
phases was assessed and compared. Overall, visual analysis of the graphs,
multilevel modeling, effect sizes, and odds ratios showed that both public and
private praise were more effective than no treatment at increasing AEB and
decreasing DB. In addition, there were no statistical or clinically significant
differences between the public and private praise interventions. The results were
discussed in light of the previous praise evidence-base and in the context of
controversies in the literature base regarding the effectiveness of praise. It was
recommended that both forms of praise should be utilized in high school
classrooms.

The University of Southern Mississippi

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IN SECONDARY CLASSROOMS

by

John Travis Blaze

A Dissertation
Submitted to the Graduate School
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in Partial Fulfillment of the Requirements for a
Degree of Doctor of Philosophy

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ACKNOWLEDGMENTS

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CHAPTER I

INTRODUCTION

Education professionals have sought to increase student achievement and provide

a positive framework for academic and behavioral interventions through the

implementation of education legislation (i.e., Individuals with Disabilities Education

Improvement Act, 2004, IDEA, 2004; No Child Left Behind Act, 2001). These laws

sought to increase the services provided to students at risk of not having access to

equitable, fair, and appropriate education. One of the major developments has been a

movement of education professionals toward a response-to-intervention (RTI) model for

addressing students' academic and behavior problems (Fairbanks, Sugai, Guardino, &

Lathrop, 2007). The emphasis in an RTI model lies in the documentation of a student's

behavior as a function of proactive support services provided by school officials. In

addition, the three levels of RTI services are designed to increase in intensity (i.e., from

least to most environmentally restrictive) until student improvement is noted.

The Tier I of the RTI model is designed to assure that all students are receiving

appropriate educational programming that promotes academic and behavioral success in

the school setting. If a student fails to profit from these universally available services,

additional Tier II services may be necessary. Lastly, students that do not adequately

respond to the ongoing primary and secondary support systems require an individualized

level of tertiary services or Tier III services that are individualized and more intensive.

Though RTI was initially developed to address the shortcomings in traditional models for

identifying students with learning disabilities, the same logical approach to addressing the

needs of students with behavior problems seems to fit well (Fairbanks et al., 2007). The

Tier II and III levels of behavior supports in schools have been present in the form of

classroom interventions and individualized intervention supports. However, the primary level of behavioral support has not traditionally been present within schools or has taken the form of punitive, reactive approaches to supporting student behavior (see Brophy, 1981; Thomas, Presland, Grant, & Glynn, 1978; White, 1975).

Positive Behavior Intervention and Supports (PBIS) (*National Technical Assistance Center on Positive Behavioral Interventions and Supports,* 2011) is a program developed to implement this intervention framework and provide proactive systematic and structural interventions within a school system. Carr et al. (2002) defined PBIS as "an applied science that uses educational methods to expand an individuals' behavior repertoire and systems change methods to redesign an individual's living environment to first enhance the individual's quality of life and, second, to minimize his or her problem behavior" (p. 4). IDEA (2004) has promoted the use of systems like PBIS because schools have traditionally utilized systems that wait for students to fail due to worsening grades and/or behavior (Sugai & Horner, 2006).

A major goal of PBIS is to change the discipline and behavior paradigms within each school, which are typically punishment based, reactive, and exclusionary, in order to develop more positive proactive approaches which focus on intervening through the teaching process. This teaching of appropriate behaviors or precorrection is critical to the success of PBIS. However, once students have the knowledge, demonstrate appropriate behavior, and receive reinforcement or acknowledgement for their appropriate behavior, a completed learning trial has occurred. Despite the intentions of IDEA (2004) and the PBIS movement, many school systems and teachers still rely on punitive, reactionary discipline policies and procedures (e.g., reprimands, corporal punishment) to influence behavior. This can be a problem because punishment procedures typically do not teach

appropriate replacement behaviors. Conversely, interventions that utilize positive techniques are intended to increase appropriate behavior by teaching replacement behaviors. The teaching results in demonstrations of appropriate behaviors that can be rewarded and made to occur more often.

Terms such as "reward" and "reinforcement" are often used interchangeably to refer to positive behavior change techniques, though this simplified terminology can be problematic in research (Cameron & Pierce, 1994). Rewards are intended to recognize appropriate behavior, but there is no guarantee that rewards will have the expected positive effects of increasing the subsequent frequency of the behavior (Brophy, 1981). Any consequent event that results in an increase in the frequency of future behavior functions as a reinforcer. Therefore, an intervention must increase the frequency of a behavior to be considered as operating by the principles of reinforcement (Premack, 1959).

In the classroom, teachers have the ability to administer responses to behavior that may function as reinforcement in unique ways. One of the simplest and most cost-effective ways is the use of praise by teachers in response to appropriate student behavior in the classroom. While the exact parameters and quantifiable effects of teacher praise have been and continue to be assessed, the desire to improve students' lives through utilization of psychological services is older than most school professionals realize.

CHAPTER II

REVIEW OF THE LITERATURE

Historical Roots and Overview of Praise Research

One of the earliest and most influential proponents of applied psychology in the classroom was Alfred Binet, who noted that:

> I find that society, which needs all its strengths to make progress, is stupid to allow children who would become a real force, to get lost and disappear. I can predict that when, one day, the social action of which we just barely begin to see the existence, will be better developed, it will be seen that the research of which I speak presents an interest so evident that one will not hesitate to spend millions to bring it about. (Binet, 1909, p. 57)

Educational legislation has promoted this change and there now exists a framework for the social action of which Binet spoke. Even so, more efforts are needed to delineate the specific practices that contribute to the betterment of lives of children and adolescents. Binet hoped that research would help convince society to take his concerns seriously. This became a lifelong passion for Binet and one in which he made a lasting impact.

In 1897, Binet and Vaschide conducted an experiment to examine if praise could increase purposeful motor behaviors of children. As expected, praise was shown to be effective at increasing behaviors. In 1900, Binet published *La Suggestibilite* in order to apply the experimental methods of pedagogy to the school classroom. Binet noted that the role of the teacher is critical in education and that changing a teacher's "habits of mind" was critical to obtaining positive psychological outcomes in student behaviors and performance. Binet noted, "all the experiments which I have made on ideation have required as apparatus only a pen, paper, and a great deal of patience" (Binet, 1903, p. 9).

Binet (1904) also preferred utilizing methods of majorities rather than averages (i.e., how the majority of subjects responded rather than statistical analysis of group means). "The detailed study of thirty children by investigators whom one knows to be attentive, conscientious, intelligent, instructed, is worth infinitely more than, incontestably so, than vague observations, often equivocal, gathered by unknown persons on three thousand children" (Binet, 1904, p. 1). This is amazingly similar to the logic and methods of what would lead to modern single-subject experimental designs.

By 1905, Binet founded his own pedagogical laboratory in a small elementary school of *la rue Grange-deux-Belles*. Through his research, Binet (1909) noted that teachers modify behavior in three ways. First, teachers let (a) natural punishments occur (i.e., apply no consequences and let naturally occurring negative experiences teach the child). Second, teachers utilize (b) repressive methods (e.g., apply corporal punishment, verbal reprimands, and bad marks that attempt to reduce behavioral disruptions). Third, teachers use (c) stimulating measures (e.g., apply rewards and praise to increase positive behaviors). Of these, Binet (1909) was a strong advocate of stimulating measures, suggesting that "this method of making the child behave in a certain manner creates in him habits which, by repetition, have the chance of becoming permanent and of forming an integral part of his nature" (p. 326).

Besides Binet's endorsement of praise and rewards, he warned against the use of repressive punishments, suggesting that they should be avoided. This was because Binet (1909) believed they would have depressing results (i.e., the child would be at a loss of energy, further inhibiting their academic output). Binet (1909) described the effective teacher as one who "never punishes, so to speak. It has been noticed that a teacher's authority may be measured by the few punishments which he dispenses in order to obtain

perfect discipline" (p. 313). It should be noted that Binet did not disagree with the use of punishment as long as it served some purpose in educating the student and provided an adequate opportunity to learn. Even so, his empirical support for the effectiveness of positive behavior management techniques (i.e., stimulating measures) in the classroom was revolutionary and remains an important issue today.

Hurlock (1924) followed up on early research involving incentives and reprimands (see Dodson, 1917; Johanson, 1922; Spencer, 1922, Wright, 1906) by experimentally assessing the effects of administered praise and reprimands on students' performance on a repeated test. Her results suggested that praise and reprimands were equally effective with regard to performance changes. However, she surveyed the children afterward noted that "it seems that they tried harder after both praise and reproof" and "they enjoyed taking the test more after being praised than after being reproved. In addition to these, they said that encouragement had a more lasting effect than discouragement" (p. 76). For these reasons, she suggested that when two methods of enhancing performance were equally effective, one should utilize the method that was positive and was preferred by those receiving the treatment. She noted that this would result in a "fostering of the spirit of enjoyment of and interest in school work, in place of the lack of interest which now prevails" (p. 77). It is clear that early educational researchers like Binet and Hurlock were strongly in favor of praise as a tool for increasing academic and behavioral productivity in the classroom.

In 1964, Kennedy and Willcutt conducted an extensive review of research related to praise and reprimands with school children. In total, 33 articles were reviewed spanning the years from 1897 to 1964. Kennedy and Willcutt discussed how studies before 1930 showed that direct measurement of behavioral output could be increased as a

function of the amount of verbal praise delivered (see Binet &Vaschide, 1897; Gates & Rissland, 1923; Gilchrist, 1916; Hamilton, 1929; Hurlock, 1924; Kirby, 1913). These early studies provided direct measurements of behaviors, which remains of keen interest today. Verbal praise was found to be generally more effective at increasing classroom test performance than repeated practice (Hurlock, 1925a) and reprimand conditions (Cohen, 1927; Hurlock, 1925b). These findings were partially the reason Davis and Ballard (1932) recommended that positive contingencies are more preferable than negative contingencies. Davis and Ballard (1932) went on to endorse praise because it was effective across all ages, all grades, and all levels of intelligence. Even so, it would be many years before the importance of these recommendations would be better understood and utilized as best practice.

From 1930 to 1940 researchers sought to elaborate upon praise research and further determine its effectiveness and usefulness. The research began to focus more on the specific types of praise (e.g., immediate versus delayed, expected versus unexpected) and other factors (e.g., motivation, personality differences, extraversion, cultural background) that were thought to interact with the effectiveness of praise. From a contemporary perspective, there was one major methodological flaw that was common in the early praise studies. Kennedy and Willcutt (1964) noted that research before 1930 did not systematically or experimentally manipulate the frequency of praise that was contingent on some behavior(s). In addition, studies from 1930 to 1940 utilized group designs with students assigned to a treatment or control group. Across studies, students in the treatment groups received praise regardless of their behavior or performance, essentially at random times determined by the experimenter. Therefore, it is unknown what behaviors were being praised and under what circumstances the praise was

occurring. It was likely that some appropriate and inappropriate behaviors were praised, even if it was incidental. This could help explain why some studies found praise to be effective and others did not.

From 1940 to 1950, Kennedy and Willcutt (1964) reviewed a total of three studies investigating praise and reprimands. During this time, researchers openly questioned the previous findings on praise and chose to instead focus their efforts on reprimands. It was not until the 1950's that researchers began to re-examine the effects of praise. The catalyst for the change was the growth of knowledge about reinforcement and renewed interest in the principles of learning (Kennedy & Willcutt, 1964). There were studies that found praise to be effective for children with visual impairments (Kent, 1956), different personality types (Silverman, 1957), and with intellectual disabilities (Ellis & Distephano, 1959). It was during this decade that praise was first explicitly administered based on task performance. Though group designs still prevailed, this was a contrast to the previous research in which the treatment groups received praise regardless of performance (Kennedy & Willcutt, 1964). Consistent with the principles of reinforcement, in these early studies praise was found not to be effective if the goals were unattainable.

Research on praise in the 1960's continued and elaborated on previous findings. Specifically, researchers focused more attention on whether praise or reprimands were more effective. Several studies (i.e., Kennedy, Turner, & Linder, 1962; Metz, 1961; Stevenson & Snyder, 1960) indicated that praise was indeed more effective than reprimands and that reprimands alone resulted in lower performance than control groups. In addition, there were concerns about how praise would affect anxiety, but praise was found to operate independently of anxiety using the Discomfort Relief Quotient (DRQ) as

a measure (Bluhm, 1964; Mowrer, 1953). The DRQ can be computed by creating a fraction using counts of words that are suggestive of discomfort or relief.

As Kennedy and Willcutt (1964) noted in their summary of the literature, "blame has been found generally to have a debilitating effect on the performance of school children. Praise has been found generally to have a facilitating effect on the performance of school children" (p. 331). The finding that praise increases appropriate behavior was first noted by Binet and Vaschide in 1897, but the implications of that finding remain relevant in the current era.

<div align="center">Overview of Recent Praise Research</div>

There has been a recent emphasis in the literature on the use of praise with classroom students and their reactions to teacher-administered praise. Stage and Quiroz (1997) conducted a meta-analysis to examine the interventions (e.g., praise, token economies, forms of punishment, differential reinforcement, planned ignoring, contingency plans, home-based contingencies, anger control, relaxation training, peer mediation, individual counseling, parent training) that were designed to decrease disruptive behaviors (DB) in public school settings. A total of 99 studies were examined with 58 being single subject experimental designs. The populations examined in the meta-analysis included 5,057 students (615 female & 910 male). A total of 4,117 were in general education settings, and 975 students were identified as having one of several conditions (e.g., Attention-Deficit Hyperactivity Disorder, learning disability, emotional disturbance, Oppositional-Defiant Disorder, Conduct Disorder).

It is important to note that Stage and Quiroz's (1997) results did not examine increases in positive behaviors, but rather the reduction of DB. Though not all of the studies in the meta-analysis utilized praise, interventions that did use praise demonstrated

effect sizes (*t* statistics that were transformed and controlled for changes in trend) ranging from -.56 to -4.6 for reducing DB (Crosbie, 1993; ITSACORR). The strong negative effect sizes suggest that the interventions were effective at decreasing DB. This was compared to a classroom intervention mean overall effect size of -0.78. Overall, all interventions were effective at decreasing DB, but praise interventions demonstrated higher average effect sizes than the collapsed means for all interventions. Though, it should be noted that several multi-component treatments likely utilized praise in some form.

Generally, modifying teacher behaviors (-0.77) was noted to be more effective than cognitive-behavioral (-0.36) and individual counseling (-0.31) approaches for reducing student DB. In addition, treatments utilizing behavioral observations in order to track the dependant variables were the most successful (-0.83). For age groups, treatments aimed at changing the behavior of high school students were also effective (-0.86). Overall, Stage and Quiroz's (1997) results were consistent with prior research and they developed several recommendations for effective treatments. Specifically, utilizing single-subject experimental designs to modify teacher behaviors by observing the direct behavioral effects of an intervention should produce the most robust results. This was true even for the studies that focused on students at the secondary level.

More recently, Cherne (2008) conducted an extensive meta-analysis of teacher praise in order to address the concerns about topographical differences in the teacher-delivered praise and outcome research. The statistics of Percentage of Non-Overlapping Data (PND; Scruggs, Mastropieri, & Casto, 1987), Percentage of All Non-Overlapping Data (PAND; Parker, Hagan-Burke, & Vannest, 2007), and Pearson's *Phi* (i.e., using converted PAND with sampling distribution; Parker, Hagan-Burke, & Vannest, 2007)

were computed across 26 single subject experimental design studies. A PND is a calculation of non-overlap between baseline and successive treatment phases. A score of 70 to 90 suggests an intervention is effective, while above 90 suggests an intervention is very effective. A PND of 50 to 70 suggests an intervention's effectiveness is questionable, while a PND under 50 suggests it is not effective (Scruggs & Mastropieri, 1998). A PAND is a calculation of total number of data points that do not overlap between baseline and all treatment phases. The scores of PAND are interpreted with the same criteria as PND. *Phi* is an effect size and should be interpreted like a correlation coefficient (i.e., Pearson's *r* that ranges from 0 to 1) with scores above .80 suggesting a strong effect of treatment. Scores from .80 to .61 suggest a moderately strong effect, with values ranging from .41 to .60 suggesting a moderate effect. Scores of .40 to .20 suggest a moderately weak effect, while below .20 suggests a weak effect (Howell, 2002). It should be noted that all overlap statistics and effect sizes utilized by Cherne (2008) were reported as median values.

Overall, praise was found to be an effective treatment across a wide body of research and conditions with median scores of 73, 83, and .70 for PND, PAND, and *Phi*, respectively. Praise was noted to be both effective at increasing appropriate academic behavior and decreasing problem behaviors (i.e., via increases in incompatible behaviors) with a moderately strong effect size. When used alone as an intervention, teacher praise showed median scores of 70, 80, and .60 for PND, PAND, and *Phi*, respectively. When used as an addition to a treatment package, teacher praise demonstrated scores of 70, 85, and .70 for PND, PAND, and *Phi*, respectively. This suggests that the effect sizes for praise alone and as an addition are moderate to moderately strong. Despite the years of

widespread supportive evidence for praise as an effective treatment, there have been

critics that disagree with its use.

Criticisms of Teacher Praise

In a scathing criticism of teacher praise, Brophy (1981) outlined several reasons

why praise should not be used by teachers while noting "I have no direct data on the

matter, but I can draw inferences from several observational studies and discussions with

teachers" (p. 16). In general, Brophy (1981) criticized praise because it was often

delivered infrequently, noncontingently, nonspecifically, and not determined by quality

of behavior. Brophy (1981) then cited the historically low levels of natural teacher praise

in the classroom as an indicator that praise was not effective. However, it remains

logically unclear how the absence or inappropriate use of praise in a classroom can

suggest it was not effective for increasing appropriate behavior in that classroom. Brophy

(1981) then argued that praise was not effective because teachers praise students for

performing well academically (i.e., rather than poorly). The implication was that teachers

are impulsively responding to the grades of their students and not deliberately praising

positive academic work. Brophy's (1981) commentary does not address the behavioral

effects of praise on the student's social and academic behavior, conceding that praise can

function as a reinforcer if it was delivered contingent on a specific behavior. Instead, it

was suggested that praise should not be used because of how poorly and infrequently it

has been utilized by teachers. It was recommended by Brophy (1981) that there was a

"need for teachers to praise well, rather than necessarily often" (p. 25), but it was not

made clear why those choices are mutually exclusive.

Bennett (1988) also offered a commentary criticizing several types of teacher

praise. She delineated teacher praise into three different categories (i.e., Type A, Type B,

&Type C). First, it was suggested that Type A teacher praise was "manipulative" (p. 23) of student behaviors. In addition to viewing principles of behavior modification as manipulation, Bennett (1988) suggested that students become addicted to teacher approval. Though there were no studies cited suggesting that praise has negative drug-like properties, a logical question remains: Would it be a bad thing if praise were addictive? Would it be a bad thing if students were addicted to demonstrating high academic achievement, demonstrating appropriate behaviors in class, and interacting appropriately with peers? It was not clear why Bennett (1988) perceived praise to be such a harmful force in the classroom, but the insinuation that praise harms students has not been supported in decades of research (Cameron & Pierce, 1994; Cherne, 2008; Deci, Koestner, & Ryan, 1999; Kennedy& Willcutt, 1964). Bennett (1988) continued her criticism by suggesting Type A praise communicates that the teacher expects poor classroom behavior because the student's addiction to praise leads to negative cognitions when praise was not received. Unfortunately, Bennett's (1988) criticism did not consider that the effects of reinforcement schedules could have positive effects on students' appropriate behavior.

The second type of teacher praise (i.e., Type B) occurs when teachers' praise focuses on students' "knowledge, abilities, skills, or personal qualities" (Bennett, 1988, p. 24). Bennett's (1988) arbitrary classification of the attributes of praise under one standard would likely produce overlap between two topographically, and perhaps functionally, different praise statements. Even so, Bennett (1988) suggested that Type B praise was problematic because students may not like praise, and it could contribute to low self-esteem by embarrassing students. This assertion was empirically refuted when Elwell and Tiberio (1994) found that surveyed students reported that they preferred to be praised.

Third, Type C praise consists of simple automatic and reflexive responses that "carry little meaning" (Bennett, 1988, p. 24). Bennett (1988) noted that praising all occurrences of classroom behavior would not function as reinforcers for any given appropriate behavior. Logically, the simple solution to the problem of Type C praise raised by Bennett would be to praise for appropriate behavior and not inappropriate behavior. Bennett (1988) refers to student perceptions of praise in her argument against Type C praise. However, Elwell and Tiberio (1994) found that students reportedly enjoy both public and private versions of praise under similar and dissimilar circumstances. Even so, there is no research directly measuring and comparing the behavioral classroom effects of both public and private teacher praise.

In Bennett's (1988) closing remarks, she suggested that praise should (a) be delivered with specific information about the student's behavior, (b) convey support and warmth, and (c) be used with appropriate tones of voice, facial expressions, and body language. However, Bennett (1988) still noted concerns about teacher praise even if these conditions were met. Overall, Bennett's (1988) commentary on teacher praise was largely representative of the critics' of praise body of research. There are several problems with the positions of Bennett (1988) on praise. Specifically, (a) no data were collected to support the claims, (b) operational definitions that encompass overly broad categories of praise were utilized, (c) operational definitions that were not behaviorally defined were used, (d) there was no research base for the delineation of the three categories, and (e) there were assumptions about student/teacher perceptions and behavior that were not empirically supported.

Geist and Hohn (2009) offered another commentary stating that use of praise was ill advised for students for several reasons. It was suggested that praise and

encouragement are qualitatively different because praise does not foster creativity. They used examples of empty praise (e.g., I love your picture of a house) and encouragement (e.g., You should be proud of the work you put into that picture) to illustrate their opinions. While it is clear that their two examples above are qualitatively different, other researchers (Elwell & Tiberio, 1994; O'Leary & O'Leary, 1977) would have likely suggested that Geist and Hohn's (2009) "encouragement" was actually behavior-specific and effort-based praise. It was difficult to know exactly what Geist and Hohn (2009) were referring to when they delineated these differences because (a) no operationalization of praise occurred, (b) no sources were cited discussing these differences, and (c) no data were collected to support their arguments. Even so, their article has widely been used to argue against the use of praise. However, Geist and Hohn (2009) inadvertently recommended the use of a specific type of praise (i.e., behavior-specific, effort-based) because it was effective at increasing appropriate behavior and decreasing inappropriate behaviors (i.e., as a result of an increase in incompatible and appropriate behaviors).

Despite having no empirical or experimental data to support their positions, Geist and Hohn (2009) continued their criticisms of praise by suggesting older children do not like praise because they are more autonomous and have internal loci of control. Geist and Hohn (2009) focused on Kohn's (1993) arguments against praise in the classroom. It is important to note that Kohn's (1993) rationale and logic against praise were also not derived from other researchers or their own data-based sources. Unfortunately, it remains common for the criticism of praise (Bennett, 1988; Brophy, 1981; Geist & Hohn, 2009; Kohn, 1993) to (a) not be based in experimental methodology with data-based results, (b) be commentary that was based solely on opinions from other researchers who utilized the same arguments, and (c) have been based on weak operational definitions of praise.

Critics of praise have argued that rewards harm children, ever since Lepper, Greene, and Nisbett (1973) showed that time spent engaging in an activity (i.e., and motivation) could be manipulated by administering and manipulating rewards in preschool classrooms. Lepper et al. (1973) rewarded preschool children for engaging in behaviors they reportedly enjoyed. In sum, the students that received the tangible rewards spent less time engaging in an activity that students than the control students that received no external rewards. Lepper et al. (1973) hypothesized that this was because internal motivation was overridden in favor of the external motivation from the rewards. In the years following, these results have been cited as the basis for why children should not be rewarded and praised, though it should be noted that the rewards utilized by Lepper et al. (1973) consisted of tangible items (i.e., ribbons) that often serve a distinctly different function than verbal praise statements. Unfortunately, it has also never been made clear exactly why the negative effect of tangible rewards on preschool children would generalize to a hypothetical classroom where older students do not enjoy sitting quietly, raising their hand to speak, and completing their assigned work.

Cameron and Pierce (1994) conducted a meta-analysis on the effect of rewards on intrinsic motivation to further address arguments that predated their investigation. Their results showed that verbal rewards (e.g., praise or positive feedback) result in significantly higher on-task behavior and better attitudes, which are the common operationalizations of motivation. Not only does verbal praise not reduce intrinsic motivation, but also effect sizes computed from 96 studies show that motivation was increased by the use of verbal rewards (Cameron & Pierce, 1994). Deci, Koestner, and Ryan (1999) followed up on Cameron and Pierce's (1994) meta-analysis of rewards and intrinsic motivation. Overall, Deci et al.'s (1999) results followed the same patterns of the

earlier work of Cameron and Pierce (1994). Specifically, the administration of verbal rewards to students had significant positive effects on motivation. It remained unclear to what extent the improvements in motivation could be generalized to other student behaviors. Even so, the criticism that verbal praise lowers students' internal motivation was thoroughly refuted by the meta-analyses of Cameron and Pierce (1994) and Deci et al. (1999). In other words, motivation was clearly not impaired by verbal rewards like praise.

<div align="center">Natural Rates of Teacher Praise</div>

There have been historically low natural rates of teacher praise despite decades of relevant research illustrating its effectiveness. White (1975) was interested in the naturalistic rates of teacher approval and disapproval and conducted one of the first studies examining these rates. In White's (1975) study, approval (i.e., praise) and disapproval (i.e., reprimands) were delineated into managerial (e.g., related to behavior) and instructional (e.g., related to academic work) types across sixteen classrooms with nine teachers. No experimental conditions were in place because White (1975) intended to discover the baseline rates of naturally occurring praise. The researchers observed a total of 8340 minutes of 104 teachers that spanned grades one through eight.

Overall, there were generally low rates of instructional disapproval with a mean of 0.12 statements per min (range = 0 to 0.37), especially as the children's grade level increased. Instructional approval occurred at an average rate of 0.34 (range = 0.05 to 1.2) statements per min, because teachers in White's (1975) study noted that reprimanding students for poor academic work did not improve subsequent academic performance. White indicated that the rate for teacher approval for managerial behavior was low with a mean of 0.02 statements per min (range = 0.00 to 0.12). One of White's (1975) most

important and enduring results was that teacher disapproval always occurred more frequently than or equal to teacher approval. In addition, rates of teacher approval peaked in second grade (1.3 praise statements per min) and steadily decreased in the secondary grades (range of 0.06 - 0.21 praise statements per min for grades 9-12).

Thomas et al. (1978) followed up on White's (1975) study by examining teacher approval and disapproval in grade seven classrooms. The key difference between Thomas et al. (1978) and White (1975) was the use of clear operational definitions and observation methodology. Once again, teacher disapproval was found to occur two to three times more often than teacher approval. The teachers involved with Thomas et al.'s (1978) study noted that disapproval for inappropriate behavior was more useful than approval for appropriate behavior, though there were no empirical data supporting their hypothesis. This perception likely accounts for the low utilization of teacher praise as a classroom management technique.

As discussed, Brophy (1981) found similar levels of natural praise in the classroom as those found by White (1975) and Thomas et al. (1978). In addition, Wheldall, Houghton, and Merrett (1989) found that teachers in four British secondary classrooms administered more reprimands than praise for students' social behaviors. Taken together, several studies (i.e., Thomas et al., 1978; Wheldall et al., 1989; White, 1975) have demonstrated that the naturalistic rates of teacher praise are generally low. These results are especially true for the secondary level when many teachers expect children to have a greater sense of internal motivation for their academic work and behavior (Brophy, 1981; Cooper & Lowe, 1977).

The natural rates of teacher praise found in previous studies (Thomas et al., 1978; Wheldall et al., 1989; White, 1975) did not examine how praise was distributed within

the classrooms. Specifically, it was not clear which students were receiving the most praise and which students were receiving the least praise. This was important because interventions have rarely been derived to solely increase praise for students who are already on-task at high levels. It is arguable that the students most in need would receive an extremely low rate of teacher praise in their natural classrooms. To further examine how teacher praise was delivered in the classroom, Andrews and Kozma (1990) sought to measure and increase teacher praise across differing on-task levels (i.e., high, medium, low). There was no teacher praise delivered to the low on-task group in the classrooms during the baseline phase. While it might be expected that a low on-task group would receive little praise in the natural setting, it is important to consider that students were classified in the low on-task group based on meeting a threshold (i.e., 64 to 82%). No students were reported to be on-task for 0% of the time. In other words, there were some, albeit fewer, opportunities in which the teacher could have administered praise for appropriate on-task behavior to students in the low on-task group.

Beaman and Wheldall (2000) followed up on prior research by conducting an extensive review of studies from 1975 to 2000 incorporating naturalistic praise. Consistent with prior research, they asserted that teachers "respond far more frequently to the inappropriate social behavior of their students than to the appropriate behaviors they may wish to see increased" (p. 443). In other words, teachers show far more disapproval than approval for social behaviors. Beaman and Wheldall (2000) also noted that teachers unfortunately regularly fail to utilize contingent praise, despite the widespread research base supporting its effectiveness. Research (i.e., Beaman& Wheldall, 2000; Thomas et al., 1978; Wheldall et al., 1989; White, 1975) has clearly shown that teacher praise does

not naturally occur at a high rate in the classroom across all grades, and is particularly absent at the secondary level.

Topography of Praise

It is important that teacher praise be delivered in ways that are known to increase desired student behaviors. There have been many types of praise utilized in the literature (e.g., behavior-contingent, behavior-noncontingent, behavior-specific, behavior-nonspecific, effort-based, ability-based, spoken, nonverbal, immediate, delayed, publicly delivered, and privately delivered). Understanding the topographical differences in the way praise can be administered will help derive more efficacious interventions.

Contingent versus Noncontingent Praise

Praise must be delivered on a specific schedule following a behavior, to be considered contingent on that behavior. Common variations in reinforcement schedules include (a) interval/time-based, (b) ratio/event-based, (c) fixed/unchanging criterion, and (d) variable/changing criterion. Contingent praise assumes that the praise occurs following either a single occurrence of a behavior or some number of occurrences of a behavior, which is a fixed-ratio schedule. It is considered a fixed-ratio 1 (i.e., continuous) schedule if the behavior is praised following every occurrence of the behavior. Kennedy and Willcutt (1964) noted how research prior to 1950 rarely, if ever, utilized contingent praise (i.e., specific behavior followed by praise) and instead relied on noncontingent praise (i.e., no specific behavior selected to be followed by praise).

In accordance with these findings, O'Leary and O'Leary (1977) were some of the first researchers to recommend that teacher praise needed to be delivered contingent on student behavior. The problem with noncontingent reinforcement is that it violates basic principles of what reinforcement constitutes (i.e., reinforcement increases the frequency

of behavior following its occurrence). Therefore, noncontingent praise was unlikely to be reinforcing for any specific behavior because it is unknown what behavior was being reinforced and under what circumstances reinforcement occurs. Research on the effectiveness of praise prior to the 1950's showed mixed results because praise was delivered noncontingent on student appropriate behaviors, though it was likely that some praise might have functioned as contingent praise by chance (Kennedy & Willcutt, 1964). It is logical that praise should be delivered as behaviorally contingent in order to increase the likelihood that the praise functions as positive reinforcement. In accordance with these principles, the majority of praise interventions are purposively designed to follow behavioral contingencies.

Pfiffner, Rosen, and O'Leary (1985) investigated the use of regular positive consequences (i.e., verbal praise, bonus work, posting work), enhanced positive consequences (i.e., increased frequency of positive consequences, new rewards), and regular negative consequences (i.e., verbal reprimands, time-out, withdrawal of privileges) for increasing on-task behavior. It was concluded that regular positive techniques alone were not sufficient to maintain on-task behavior when reprimands were removed from the classroom. Enhanced positive techniques were expectedly more effective than regular positive techniques. However, there are several methodological problems with their study. The initial levels of on-task behavior ranged from 80 to 100 percent, suggesting there could be ceiling effects for any positive consequences. In addition, not all consequences were delivered contingent upon the students' on-task behavior. Both sets of consequences were delivered for academic and social behavior, but they did not operationalize what academic work or behaviors were targeted for response.

Pfiffner et al.'s (1985) findings should also be interpreted with caution because it was not a simple comparison of praise to reprimands, as some have later tried to suggest.

Acker and O'Leary (1987) sought to extend Pfiffner et al.'s (1985) previous work by investigating the direct and combined effects of contingent praise and reprimands on on-task behavior. The investigators trained their teachers to deliver at least two praise statements per student in their praise phases. This was in contrast to Pfiffner et al.'s (1985) study where there were many possible positive consequences. In addition, praise was only delivered for the target behavior (i.e., on-task). Teacher feedback was also utilized to maintain the sufficiently higher levels of praise. Acker and O'Leary (1987) also reported initial levels of on-task behavior that were 75 percent on average. In this case, ceiling effects were also a possible issue. When they removed the naturally occurring negative consequences that were teacher controlled (i.e., reprimands), on-task behavior dropped significantly. Even so, the highest levels of on-task behavior (80%) were reported when praise was added to the naturally occurring reprimands.

Acker and O'Leary's (1987) study had several limitations. First, there was only one classroom involved, which makes it difficult to truly assess the generalizability of their findings. Second, no data regarding treatment integrity were reported, and there was extreme variability in the no praise/no reprimands (10-90%) and praise/no reprimands (10-95%) conditions. Praise was only delivered during independent seat work. However, they measured on-task behavior across different activities. This severely limited the impact of the increased praise and the generalizability of any observed effects. Reprimands were also not systematically controlled and occurred at the teacher's discretion throughout the day (i.e., not just during independent seat work). Even so,

Acker and O'Leary (1987) were careful to acknowledge that their study was limited and that the roles of positive consequences in the classroom were not fully explained.

Thompson (1997) elaborated on why noncontingent praise can be harmful to students. He explained the findings in terms of attribution theory, specifically suggesting that noncontingent praise feedback creates attributional uncertainty about their academic achievement. Specifically, Thompson (1997) suggested that noncontingent praise makes it difficult for students to believe their achievement is the result of their effort and not other factors (e.g., teacher's attitude towards, difficulty of work, motivation). Attribution theory and learning theory may not explicitly agree on the mechanisms that contribute to contingent praise's effectiveness, but Thompson (1997) outlines another theoretical rationale for why contingent praise should be utilized in the schools. Overall, it is one more reason to ensure praise is delivered clearly, which in behavioral terms should be operationalized as contingent upon a specific behavior.

Contingent praise has also been utilized in behavioral parent/teacher training packages and has been used effectively alone and combined with other treatment components (Griffin, 2007). One of the first studies examining contingent teacher praise and compliance began as a social skills intervention. Neville and Jenson (1984) created a program where the student was reinforced for answering "Sure I will" and complying with teacher requests. In other words, the praise the students received was specifically contingent on their compliance. It was reported that the "Sure I Will" program was effective at dramatically increasing compliance in the majority of students examined, though no data were reported in their brief report. It should be noted that students in the Neville and Jenson (1984) study were selected due to externalizing behavioral problems. It was anecdotally suggested that increased compliance in the classroom led to better

student-teacher relationships, better academic outcomes, and a more positive classroom environment.

Previous parent and teacher compliance training research had largely focused on a particular subset of the student population (i.e., children with externalizing disorders). More recently, data-driven behavioral parent and teacher trainings have been utilized. One key component of these training programs utilizes contingent praise because it has been shown to be effective at increasing compliance levels for preschool-aged children (Mandal, 2001; Mandal, Olmi, Edwards, Tingstrom, & Benoit, 2000; Scoggins, 2005), children with developmental, speech, and motor delays (Bellipanni, 2005; Faciane, 2001; Roberts, Tingstrom, Olmi, & Bellipanni, 2008), children with oppositional-defiant disorder (Benoit, Edwards, Olmi, Wilczynski, & Mandal, 2001), children with attention-deficit hyperactivity disorder (Everett, Olmi, Edwards, & Tingstrom, 2005), children with specific learning disorders (Griffin, 2007), and students in general education classrooms (Bellipanni, 2003; Ford, Olmi, Edwards, & Tingstrom, 2001). Overall, prior research has consistently demonstrated that behaviorally contingent praise was effective at increasing appropriate behavior and decreasing inappropriate behaviors.

Behavior-Specific and Nonspecific Praise

Another factor connected to the effectiveness of praise is the level of specificity that the praise takes. Behavior-specific praise involves praising the student and making known to the student the behavior that preceded praise. An example of behavior-specific praise is a teacher saying "Good job raising your hand, John." Conversely, nonspecific praise involves undifferentiated praise that the student receives. An example of nonspecific praise is a teacher saying "Good job." without being specific as to what was good or appropriate about the student's behavior. The logic of behavior-specific praise is

similar in function to contingent praise. Specifically, contingent praise provides an opportunity for the student to learn appropriate behavior. Behavior-specific praise provides an additional opportunity for the student to learn why they are being praised, which increases the chances it will function as positive reinforcement (Chalk & Bizo, 2004; Van der Mars, 1989).

The many studies reviewed by Kennedy and Willcutt (1964) often utilized nonspecific praise for behavior. While nonspecific praise can be effective at increasing some behaviors, behavior-specific praise has been generally accepted as a more effective and efficacious way to increase student appropriate behaviors (Bartholowmew, 1993; Brophy, 1981; Sutherland, Wehby, & Copeland, 2000). McAllister, Sachowiak, Baer, and Conderman (1969) implemented an intervention to increase behavior-specific praise. High school teachers were trained in the appropriate ways to administer specific praise statements like "Thank you for being quiet," "Thank you for not talking," and "I'm delighted to see you so quiet today." Their experimental classrooms were compared against a control classroom that received no treatment. Overall, McAllister et al.'s (1969) classwide intervention significantly reduced inappropriate vocalizations from 25% (experimental group receiving praise combined with naturally occurring reprimands) in the baseline phase to 5% following treatment. McAllister et al.'s (1969) control group did not significantly change from 23% in baseline (i.e., teacher receiving no added instruction) to 22%. Turning behavior (e.g., turning body physically away from task materials toward peers) was reduced from 15% (i.e., experimental group receiving praise) in the baseline phase to 4% following treatment. McAllister et al.'s (1969) control group did not significantly change from 15% in baseline (teacher receiving no added

instruction) to 17%. In addition, their results showed that behavior-specific praise interventions could be effective at the secondary level.

O'Leary and O'Leary (1977) suggested that specifically addressing the behavior worthy of praise increases the effectiveness of the administered praise. Bartholowmew (1993) noted that "the more obvious problems of generic praise statements are that they do not address specific situations" (p. 41). It is often some specific situation or behavior that needs to be increased (e.g., on-task, appropriately engaged behavior), and general praise may not act as a reinforcer for any specific behavior if it was not delivered with the subtle message to the child of why they are being praised. Another finding by Cherne (2008) reiterated the importance of using behavior-specific (PND = 83, PAND = 90, *Phi* = .80) praise. Behavior specific praise demonstrated a strong median effect size across the eight studies in Cherne's (2008) meta-analysis that utilized behaviorally-specific praise. Overall, it is clear that behaviorally-specific praise is effective at increasing appropriate behavior and decreasing inappropriate behaviors and has additional benefits that behavior non-specific praise lacks.

Ability-Based and Effort-Based Praise

Ability-based praise involves praising the student for some innate characteristic that they possess. In this case, the praise-worthy behavior is communicated to the student as a product of their internal characteristics. An example of ability-based praise is a teacher saying, "Good job on your assignment John, you are so smart." following good performance on an assignment. Effort-based praise involves praising the student's effort in engaging in the behavior. In this case, the praise-worthy behavior was communicated to the student as a product of their behavioral effort put forth during a task. An example of effort-based praise is a teacher saying, "Good job on your assignment John, you

worked really hard on that." following a demonstration of good effort on an assignment (Elwell & Tiberio, 1994). The differences in ability- and effort-based praise partly reflect the differences found with behavior-specific versus behavior-nonspecific praise. Specifically, effort-based praise communicates information regarding performance to the student that ability-based praise may not. However, all behaviorally-specific praise should be considered effort-based, but not all effort-based praise is necessarily behaviorally-specific.

Bartholowmew (1993) argued that praise needed to be topographically varied in order to be successful. While he did not directly measure behavior outcomes, it is logical to assume that students might become habituated or satiated to specific sequences of praise statements. The use of behavior-specific and effort-based praise should allow students to receive many different praise messages based on each specific behavior that was praise-worthy. For example, a teacher saying, "Good job." for a student raising her hand and later for a student sitting quietly was not topographically diverse. However, this can be easily rectified by having that same teacher say, "Good job for raising your hand." and "I like the way you're sitting quietly." instead of the more generic "Good job." Recognizing the student's effort in behaviorally-specific terms was recommended by Bartholowmew (1993) as the best way to praise.

Mueller and Dweck (1998) conducted a series of six studies examining how a student's internal or intrinsic motivation was affected by teacher praise for intelligence, effort, or general praise. They consistently found that praising a student for their innate ability lessened their effort to solve math problems. Conversely, effort-based praise (e.g., "Wow, you worked really hard on those problems!") dramatically increased students' number of math problems solved compared to both the ability-based praise (e.g., "You're

so smart!") and the general praise group (e.g., "Good job!" or "Great!"). While academic and theoretical (i.e., self-concept theory) in nature, Mueller and Dweck's (1998) findings suggested that effort-based teacher praise should be utilized over ability-based teacher praise.

These results were consistent with the principles of reinforcement and contingent praise because effort-based praise should communicate a message as to why the student was receiving praise whereas ability-based praise could lead to ambiguity of why the praise was being delivered. In other words, effort-based praise served as a much more direct mechanism for helping students establish the link between their performance and the outcome (i.e., teacher praise) than did being praised for abstract quality that had no clear ties to their behavior (i.e., intelligence). These findings are consisted with some of Brophy's (1981) recommendations that praise should take the form of specific and effort-based in order to minimize the undermining of intrinsic motivation.

It should also be noted that ability-based praise (PND = 43, PAND = 65, *Phi* = .30) demonstrated a moderately weak median effect size in Cherne's (2008) meta-analysis. This is logical because praise is generally meant to function as a reinforcer for demonstrated behaviors that require effort. Therefore, praising for possessing some innate ability would not function as a reinforcer, whereas praising a student for working hard on a task increased the likelihood that the student would work hard on that task in the future. This was likely why behaviorally-specific praise demonstrated a strong effect while ability-based praise did not. However, Cherne's (2008) reservations about ability-based praise should be tempered by the notion that only two studies were included that utilized ability-based praise. In addition, effort-based praise did demonstrate similarly weak effects (PND = 42, PAND = 64, *Phi* = .27) in the two studies examined.

One problem with Cherne's analyses of ability and effort-based praise interventions involves the sample sizes. As a result, the confidence intervals vary greatly for both ability-based (*Phi* = 0 to .89) and effort-based (*Phi* = 0 to .71) praise. Therefore, these effect sizes should be interpreted with caution. Even so, the median effect size for behaviorally-specific praise was strong (*Phi* = .80 with a range of .52 to 1.0), suggesting that a specific form of effort-based praise was consistently effective at increasing appropriate behavior and decreasing inappropriate behaviors across a variety of contexts.

Verbal and Nonverbal Praise

Teacher approval and disapproval can be communicated to students in a variety of ways. On a basic level, spoken praise typically involves statements from the teacher to the student that communicate a positive message regarding the student's performance. The majority of praise-related treatments focus on spoken or verbal praise as the praise-related variable of interest (Cherne, 2008). In the classroom, teachers can communicate messages to a student by making physical contact, changing posture, and other methods. For example, two common methods of delivering physical praise are high-fives and pats on the back or shoulder for appropriate behavior. Overall, physical contact and attention have long been utilized alongside verbal praise as effective components of other positive treatment components (see Benoit et al., 2001; Ford et al., 2001; Mandal et al., 2000; Olmi et al., 1997; Roberts et al., 2008). However, it is important to note that there has not been research directly comparing the effects of spoken and nonverbal praise as the sole variables of interest, though it has long been known that nonverbal praise and attention results in beneficial outcomes (see Dennis, 1974; Hall, Lund, & Jackson, 1968; Spitz, 1945).

Aside from physical praise, Bartholowmew (1993) noted that tone of voice and nonverbal cues are crucial to the administration of verbal praise. Though he offered no data, Bartholowmew (1993), argued that a dull tone of voice, lack of excitement, and neutral body language could lead to the praise being ineffective, even if it was delivered appropriately. Woolfolk and Brooks' (1985) review of the literature on teacher nonverbal behavior outlined some of the important components related to praise and perceptions. Specifically, they discussed the importance of physical proximity, facial expressions, and tone or rate of speech. Woolfolk and Brooks (1985) discussed how teacher praise was often accompanied with positive nonverbal behaviors. Students that did not receive praise due to poor behavior were more likely to receive negative nonverbal behaviors from the teacher. Eye contact, in particular, was discussed as an important prerequisite of being an effective teacher and administering effective praise and reprimands. Woolfolk and Brooks (1985) did suggest that what teachers say was generally more important than how they say it. However, they noted that most effective praise would be praise that was nonverbally congruent with the positive words themselves. It is clear that there are many effective ways for teachers to communicate positive messages to students and prior research has shown that both verbal and nonverbal praise can be effective at increasing appropriate and decreasing inappropriate behaviors.

Immediate and Delayed Praise

There is a general consensus the strongest links between a target behavior and consequence result from immediately administering such responses. If praise were to be delayed, then it is possible that other behaviors would occur in the time before the consequence (i.e., praise) occurred, which could result in multiple possible behaviors being temporally linked to that consequence. The result of the elapsed time may serve to

make the consequences noncontingent on the behavior of interest. Brenner (1934) found that immediate praise and delayed praise were equally effective. However, the operational definitions and set of contingencies were not clearly stated in these early praise studies. It was not known after what extent of a delay that praise was administered in Brenner's (1934) early work.

Trolinder, Choi, and Proctor (2004) further examined the effectiveness of delayed teacher praise by administering praise based on the previous day's performance. The intervention for the elementary aged students' on-task student behavior was implemented by two experienced teachers. Two students were referred by their teachers based on low on-task behavior compared to their classmates. Subsequent observations and ratings scales were utilized to verify the low levels of on-task behavior. Teachers were trained in the specialized delivery of praise statements. The specialized delivery of praise consisted of (a) the student's name, (b) a statement of appreciation, (c) a specific description of the praise-worthy behavior, and (d) a consideration of a future goal. The teacher approached the target students at the start of the school day and administered praise based on the previous day's performance (e.g., high level of on task behavior).

Overall, the use of delayed praise increased the mean on-task levels for the two students from baseline levels of 49% and 56% to 72% and 84% respectively following implementation of treatment. Trolinder et al.'s (2004) study did not suggest that delayed praise was more effective than immediate praise, but they were able to demonstrate that delayed praise can be effective. This was an important finding because it may not always be possible for teachers to praise a student immediately (i.e., if instructional demands did not permit or if the student was removed from the classroom prematurely). Even so, prior research (i.e., Brenner, 1934; Cherne, 2008; Kennedy & Willcutt, 1964; McAllister et al.,

1969) has consistently demonstrated that immediate praise was effective at increasing appropriate behavior and decreasing inappropriate behaviors. Therefore, it is logical that praise should be administered immediately if possible.

Public and Private Praise

Albert Bandura (1969) suggested that when "favorable conditions are introduced, observational learning promptly emerges in action" (p. 225). Bandura was a strong proponent of observational learning, and many others have discussed how viewing others getting rewarded for a behavior could result in a reinforcing effect for the behavior of the observing individual (see Berger, 1961; 1962). In addition, the effects of observational learning have been shown to be functionally equivalent for the behaviors of children (see Bandura, & McDonald, 1963; Bandura, Ross, & Ross, 1963).

Though Bandura did not directly examine praise in the classroom, his theory illustrated how observational learning could affect student behaviors. For example, a target student who receives praise will likely experience the effect of the praise. In addition, social learning theory would suggest that other non-target students in the classroom that saw the student receive praise for a particular behavior would more likely engage in the behavior the target student demonstrated.

However, the effects of observational learning could also function as a punishing consequence (Bandura, 1969). With this in mind, critics of praise might suggest that teacher public praise would serve as a punisher for a student. If this occurred, then other students would see the student receive punishment (e.g., embarrassment, peer rejection) and be less likely to demonstrate the behavior that resulted in the punishment. While theoretically relevant, it is important to acknowledge that there are no data demonstrating these hypothetical effects occur or would likely occur. In the previous hypothetical

example, teacher praise that is delivered privately would serve to reward the student while lessening the degree to which social learning can occur. However, no studies have directly compared interventions in which both types of praise (i.e., public versus private) were controlled and compared. The majority of research has instead shifted toward student perceptions and explanations based on deductive logic.

Another factor that could determine the effectiveness of teacher praise is how the student perceives the praise. Ward (1976) suggested that students who enjoyed praise would be more likely to improve or change behaviors after being praised than students who did not enjoy it. This element of praise involves the context in which the praise was given. Consider a verbal statement of "Good job raising your hand, John." from a teacher to a student. The context for this statement could theoretically alter the effectiveness of this praise, depending on whether the praise was announced publicly or mentioned privately. Public praise operates inside an existing social network within the classroom. The effectiveness of public praise might be partly determined by student perceptions of one another, perceptions of the teacher, social status concerns, and other factors (Elwell & Tiberio, 1994; Ward, 1976).

Bartholowmew (1993) suggested that public verbal teacher praise could cause embarrassment if a student does not want the public attention that the praise offers. It is important to note that this information was presented as commentary with no data-based sources presented in favor of the opinion that public praise leads to embarrassment. However, there has been no lack of prior research investigating student preferences with regard to reinforcement choices. One of the first researchers to assess these student perceptions was by Ware. Ware's (1978) findings suggested that teacher praise was rated as less preferable than compliments from friends, having their opinions sought, receiving

certificates or privileges, and having their names printed. However, Ware (1978) noted these results should be attributed to the poor quality of teacher praise that was present in the students' natural classrooms.

Elwell and Tiberio (1994) sought to extend the literature on student preferences for teacher praise by surveying students at the secondary level. They sought to assess assumptions of prior research (Bartholowmew, 1993; Brophy, 1981; Ward, 1976) suggesting that public praise would be ineffective with students at the secondary level. Elwell and Tiberio (1994) created the *Praise Attitude Questionnaire* to assess student perceptions based on responses to seven questions. A total of 620 students from grades seven to twelve completed the questionnaire. Overall, a majority of students preferred to be praised 'always' (26%) or 'sometimes' (62%) for appropriate classroom behavior across all grade levels. It is not clear if this praise was public or private. Even so, a majority of students also preferred to be praised 'always' (25%) or 'sometimes' (66%) for academic behaviors (i.e., completing work on time).Elwell and Tiberio (1994) asked the students about public (i.e., loud), private (i.e., quiet), and no praise following the student verbalizing a correct answer in class. The greatest percentage of students preferred public praise for grades eight (43%), eleven (40%), and twelve (42%) rather than private praise or no praise. Private praise was preferred for grades nine (43%) and ten (38%) following a correct answer. Overall, most students preferred public (39%) or private (35%) to no praise (26%) following a correct answer in class. The same pattern was present for receiving high grades on a test. Students generally perceived praise to be more important for academic work rather than for appropriate classroom behavior.

Elwell and Tiberio (1994) then asked whether students would prefer to be praised publicly, privately, or not at all for good behavior (i.e., sitting and working quietly at their

own desk). Collapsed across all grade levels, students reported that they preferred not being praised at all (54%) rather than being praised privately (37%) or publicly (9%) following good behavior. This finding was at odds with their finding that students preferred to be praised in some fashion for appropriate behavior. It is possible that the behavioral examples provided to the students by Elwell and Tiberio (1994) were interpreted differently by the students. It is also possible that students do not want to believe that teachers are using praise as a tool to change their behaviors. Even so, Elwell and Tiberio (1994) were careful to point out that there were no direct observations or measurements of behavior included in their study. Student perceptions are only one factor in a complex classroom environment and may not be the best measure of potential for behavior change.

Even so, the vast majority of classroom interventions have focused on public praise (Cherne, 2008). Private praise would partially eliminate both the positive and negative social elements that affect public praise. Houghton, Wheldall, Jukes, and Sharpe (1990) investigated the use of private reprimands and private praise on on-task behavior in four secondary classrooms in Britain. Their 30-min observations focused on teacher rates of praise and reprimands with regard to academic and behavioral targets. In addition, on-task behavior was measured utilizing a procedure involving whole intervals of 4 s with three groups of students. The students consisted of relatively equal numbers of males and females with similar ages and levels of ability. The teachers' work experiences in the schools ranged from nine to eighteen years. Houghton et al. (1990) increased private praise and reprimands by training teachers via showing instructional video trainings and providing handouts. Overall, private praise was effective at increasing on-task behavior in all four classrooms from 55% to 71% (of observed intervals), 63% to

76%, 68% to 81%, and 69% to 82%, respectively. The effectiveness of private reprimands was boosted by the addition of private praise from 71% to 82%, 76% to 85%, 81% to 88%, and 82% to 88%, respectively. A combination of private praise and private reprimands was generally the most effective at increasing on-task behavior, but private praise alone was sufficient to raise on-task behavior to about 85%.

There are a few problems with Houghton et al.'s (1990) study that warrant further investigation. First, it was not clear what dictated the phase changes. This is important because there was an increasing trend in three of the classrooms' data that makes it difficult to truly know if private praise alone would have been more effective if given more time. Second, there were no clear measures of treatment integrity. Instead, the number of instances of praise and reprimands were reported. This was a problem because the extent to which every instance of on-task behavior praised is unknown. In addition, it is unknown what specific behaviors were reprimanded. Third, Houghton et al. (1990) did not operationalize private praise in behavioral terms. It was suggested that the teachers spoke softly to allow fewer students, if any, to hear the praise statements. However, it is unclear to what extent the topography of private praise varied between the four teachers. Fifth, Houghton et al. (1990) did not directly manipulate the levels of public praise. This was a limitation because they concluded that private praise was more effective than public praise.

It was suggested that older students preferred private praise because it was less embarrassing than public praise. This was assumed because there was no manipulation of public praise. Even so, Houghton et al.'s (1990) study demonstrated that private praise could be effective at increasing appropriate behavior in the classroom. This is important

because the majority of prior research has consistently demonstrated that public praise was effective at increasing appropriate behavior and decreasing inappropriate behaviors.

This distinction between public and private praise is important because Bear (2008) recommendation that teachers should "rely less on public praise and more on private praise, especially with adolescents" (p. 1410) has been adopted as a best practice. The recommendation was likely based upon well-intentioned recommendations of others, student surveys, and general perceptions of what practices are appropriate. Unfortunately, there is no evidence-base to support the recommendation that private praise is more or less effective than public praise with children or adolescents of any age.

Summary and Research Questions

Several factors have influenced the need for increasing the frequency of teacher praise in the classroom. First, there have been low naturalistic rates of teacher praise (Beaman & Wheldall, 2000; Thomas et al., 1978; Wheldall et al., 1989; White, 1975). Second, teachers have not viewed praise as an appropriate tool for classroom instruction (Brophy, 1981; Cooper & Lowe, 1977). Third, teachers may lack the skills necessary to effectively deliver and maintain sufficiently high rates of praise in their classrooms. The third factor could help explain why teachers may have poor perceptions of praise. For example, it is possible that praise attempted in the past was not effective because it was delivered in some way that did not function as a reinforcer for the student behavior targeted for change. Even so, praise is a useful and economical tool that has been used to increase student behaviors for more than a century (Binet & Vaschide, 1897; Cherne, 2008; Kennedy & Willcutt, 1964).

Though there are many effective combinations of teacher-delivered praise, the present study utilized behaviorally-contingent, behavior-specific, effort-based,

immediate, and both spoken/nonverbal praise. This is largely in line with Bear's (2008) recommendations for efficacious praise that have been adopted as a best practice. The criticisms and misunderstandings about various types of praise have led to an environment in which educators may believe that praise is either not effective or harmful to students. The present study sought to answer these criticisms and other fundamental questions that have not been answered with regard to the type of praise that is most effective for secondary students. Specifically, the purpose of the present study was to examine the extent to which public and private types of praise are effective with students at the secondary level in public education classrooms. The following research questions were investigated:

1. Does teacher public verbal praise effectively increase the level of secondary students' appropriately engaged behavior?

2. Does teacher private verbal praise effectively increase the level of secondary students' appropriately engaged behavior?

3. Is teacher public or private verbal praise more efficacious at increasing the level of secondary students' appropriately engaged behavior?

4. Does teacher public verbal praise effectively decrease the level of secondary students' disruptive behavior?

5. Does teacher private verbal praise effectively decrease the level of secondary students' disruptive behavior?

6. Is teacher public or private verbal praise more efficacious at decreasing the level of secondary students' disruptive behavior?

CHAPTER III

METHODOLOGY

Participants and Setting

Four high school teachers/classrooms participated in the current investigation. All students attended public school in the rural southeastern United States. The school district had a total enrollment of 2,108 students for the 2010-2011 school year. Overall, 74% of the total students qualified for free ($n = 1338$) or reduced ($n = 220$) student lunches. Four teachers from general education classrooms were referred by the principal for assistance for classroom behavior management. Teacher consent was obtained prior to inclusion in the current study (see Appendix A). For inclusion, AEB had to occur in no more than 70% of the observed intervals in a 20-min classroom screening observation in order to qualify for participation (see Appendix B). It should be noted that teacher public or private praise did not naturally occur at a rate higher than once per minute in the classrooms that qualified for the current investigation. No classrooms were selected that previously utilized classwide interventions aimed at increasing praise. All phases of the current investigation took place in the students' regularly scheduled classrooms, and the demographics of the classroom samples were representative of the school.

Teacher 1's education consisted of a Bachelor of Science in Education and a Master's of Arts in Education. She had been teaching for eight and a half years and had taught Algebra I, English I, or English II for seven of the past eight and a half years. The subject area in Teacher 1's class for the current investigation was Transition to Algebra. Teacher 1's classroom consisted of eighteen students with ten males and eight females. Eleven of the students were classified as African-American while eight were classified as Caucasian. Teacher 1 noted that every student in her class had failed the course at least

once (i.e., though not all students were in her previous classes) and several students had failed up to three times prior. Overall, eleven students were in the 9th grade, six were in the 10th grade, and one was in the 11th grade. Seven of the students in the class had previously been placed in the district's alternative school in their junior high or high school years.

Teacher 2's education consisted of a dual Bachelor of Arts in English and Bachelor of Science in Education. She had nine years of teaching experience and had instructed English every year. The subject area for the current investigation was English II (i.e., tenth grade English) with sixteen students enrolled. Teacher 2's classroom consisted of ten males and six females. Eight of the students were classified as African-American while eight were classified as Caucasian. Overall, four students were in the 9th grade and twelve were in the 10th grade.

Teacher 3's education consisted of a Bachelor of Arts in English and Master of Arts in Literature. She had been teaching for five years and also maintained an alternative route certification. The subject area for the current investigation was English I (i.e., ninth grade English) with twenty four students enrolled in the class. Teacher 3's classroom consisted of ten males and fourteen females. Fifteen of the students were classified as African-American, eight were classified as Caucasian, and one student was classified as Latino/Latina. Overall, twenty-three students were in 9th grade and one student was in the 10th grade.

Teacher 4's education consisted of a Bachelor of Arts in English. She had a total of ten years of experience and noted that she believed her "strongest" area was typically classroom management. However, she noted that emphasis on classroom management is what "made this class frustrating at times." The subject area for the current investigation

was English I with twenty five students enrolled. Teacher 4 also noted that this particular group of students had been one of the most difficult cohorts she had ever instructed. Teacher 4's classroom consisted of 13 males and 12 females. Seventeen of the students were classified as African-American, seven were classified as Caucasian, and one student was classified as Latino/Latina. Overall, twenty-four students were in the 9th grade and one student was in the 10th grade.

<div align="center">Materials</div>

The teacher consent form (see Appendix A) contains information about the title of the study, purpose, participants, procedure, benefits and risks to participants, voluntary nature of the study/confidentiality, contact information, and describing the consent itself. The observation form (see Appendix B) includes twenty minutes of 10-s intervals and four target behaviors (i.e., AEB, DB, Public Praise, Private Praise with momentary time-sampling) that are possible to track across two pages. The form also lists the Teacher's name, Date, Observer name, Classroom activity, and Phase categories for additional information on the first page. Portable audio devices were used to play a 10-s continuous beep-tape with split-wire devices used for keeping track of intervals and assessing interrater reliability.

An adapted *Intervention Rating Profile-15* (*IRP-15*; Martens, Witt, Elliott, & Darveux, 1985; see Appendix C) was used to assess the acceptability of the intervention. The instrument consists of 15 questions that the respondent rates on a Likert scale ranging from 6 ("strongly agree") to 1 ("strongly disagree"). The *IRP-15* ranges in score from 15 to 90 with higher numbers representing greater acceptability. Generally, scores 52.5 and above represent a rating of "acceptable" (Von Brock & Elliott, 1987). The *IRP-15* is a reliable instrument (Cronbach's alpha = .98) and the General Acceptability Factor

(ranging from .82 to .95) loads on all factors (Martens et al., 1985). There were several slight modifications to the standard *IRP-15* used in this project including (a) the utilization of past tense instead of future tense, (b) changing "child" to "students", and (c) changing "problem behavior" to "problem behaviors." Freer and Watson (1999) demonstrated that slight modifications of language used in describing school-based services have no effect on the psychometrics of the instrument.

Teachers were provided a MotivAider device to wear in order to increase and maintain a rate of praise statements. This device is a simple electronic device that vibrates at timed intervals in order to provide an individual with a private prompt to engage in a specific behavior. The prompt allowed for the teacher to covertly be notified that a praise statement should be given without alerting students in the classroom.

<center>Dependent Measures</center>

Appropriately engaged behavior (AEB) was the primary dependent measure and is defined as the student actively or passively directing their attention toward the currently assigned task (e.g., looking towards teacher) or being engaged in the currently assigned task (e.g., looking towards worksheet on desk, reading book) (see Axelrod, Zhe, Haugen, & Klein, 2009).Disruptive behaviors (DB) consisted of (a) inappropriate touching of others (i.e., if the child engaged in academically irrelevant physical contact with another individual), (b) inappropriate vocalizing (i.e., any academically irrelevant vocalization or verbal noise made by the child. This included such things as humming, making unusual vocal noises, speaking, whispering, or making noises with one's teeth), (c) playing with objects (i.e., touching or manipulating any object in the room besides the table, chair, pencil or materials needed for the task at hand), and (d) out of seat (i.e., student positioned such that no part of buttocks or legs were touching with the seat).

Independent Measures

Two forms of praise served as primary independent variables. Teacher public verbal praise was defined as any positive statement from the teacher that was contingent on students' AEB and at a volume loud enough to be heard by any other students in the classroom. Teacher verbal praise was either a specific (e.g., "I love it how you are starting the assignment just like I asked of you!" or "I like how Sam raised his hand before answering the question!") or nonspecific (e.g., "Fantastic!" or "Great job!") praise statement regarding the students' behavior.

Public verbal praise combined with physical praise (e.g., pat on the back or "high-five") was coded as public praise. The volume of teacher public praise was judged to be similar to that of regular classroom instruction and loud enough to be heard by the majority of students in the classroom from any location within the classroom. Private teacher verbal praise was defined as any positive statement from the teacher that was contingent on students' AEB and at a volume quiets enough to be heard or noticed by the target student and possibly peers sitting next to the target student. Physical praise alone was coded as private praise unless it was noticeable to multiple students in the classroom or combined with public praise. Praise statements were always coded into one of the mutually exclusive categories (i.e., one praise statement never was coded as both public and private).

Experimental Design

A multiple baseline across pairs of classrooms comparing A (baseline), B (public praise), and C (private praise) was implemented across four classrooms to assess the treatment effects for each class (Kazdin, 1982, 1984). The order of treatment phases was counterbalanced in order to control for order effects. The first and second classrooms had

the treatment phases implemented in an ABCAC order. The third and fourth classrooms

were presented with treatment phases in an ACBAB order. These phase changes occurred

following phase stability of AEB with stability operationalized as having no more than

15% variability in AEB across three consecutive observations in each phase. The design

also allowed for within-series comparisons across each of the classrooms mean

percentage of observed intervals of AEB across phases and a withdrawal phase to assess

internal validity. Between-series comparisons across each classroom's mean percentage

of observed intervals of AEB were available due to the counterbalanced conditions across

the classrooms.

<div align="center">Reliability</div>

Interobserver agreements (IOA) for teacher and student behaviors were defined as

intervals in which both observers coded the same teacher or student behavior within

each interval. The total number of agreements for each variable was divided by the

number of agreements plus disagreements and multiplied by 100 in order to calculate a

percentage of IOA. Disagreements were defined as instances in which an observer

recorded the behavior as occurring in an interval, while the other observer did not record

the same behavior as occurring during that interval. IOA for both AEB and DB was

defined as intervals in which both observers agreed on AEB or DB as occurring or not

occurring in that interval, respectively. IOA for both public and private praise were

defined as intervals in which both observers agreed on the each respective type of praise

as occurring or not occurring in that interval. IOA was assessed for 30% of total sessions

across all phases. The total IOA mean was 98% (range 89-100%) collapsed across all

variables.IOA data were collected for teacher and student target behaviors for 31% of

sessions for Teachers 1 and Teacher 2, 25% of sessions for Teacher 3, and 30% of

sessions for Teacher 4. Table 1 shows the mean percentages of IOA for each target

behavior for all teachers.

Table 1

Independent Observer Agreement for Target Behaviors in all Phases for All Teachers

	Teacher 1	Teacher 2	Teacher 3	Teacher 4
Appropriately Engaged Behavior				
Mean	97%	97%	96%	97%
Range	95% -100%	95% - 100%	87% - 100%	89% - 100%
Disruptive Behavior				
Mean	97%	96%	96%	96%
Range	95% - 100%	91% - 100%	91% - 100%	85% - 100%
Frequency of Public Praise				
Mean	100%	99%	100%	99%
Range	-	99% - 100%	-	95% - 100%
Frequency of Private Praise				
Mean	99%	99%	98%	99%
Range	97% - 100%	97% -100%	93% -100%	96% -100%

Treatment Integrity

Treatment integrity (see Barlow & Hersen, 1984; Gresham, 1989; Appendix D - Steps 1 & 4) was assessed following 100% of observations. During the five phases of the investigation, the primary investigator recorded whether each teacher administered praise at a rate of at least once per two minutes (i.e., 0.5 per min) in the method dictated by the current praise phase (i.e., 10 praises within a 20-min observation).Overall, treatment integrity was assessed across baseline with a mean of 0% (i.e., less than 1 praise statement per two min in all baseline observations), public praise (mean = 97%), private praise (mean = 96%), and withdrawal phase (mean = 0%). In addition, IOA of the treatment integrity protocol was assessed for 30% of the total sessions. Treatment integrity IOA was recorded as 0% if there was an observer disagreement regarding whether each teacher administered praise at a rate of at least once per two minutes. If there was observer agreement, then IOA was recorded as 100%. Treatment integrity IOA was 100% for all observations across all phases.

Procedural Integrity

Procedural integrity (see Appendix D - Steps 2-3 & 5-9) was also assessed following 100% of observations. Procedural integrity was calculated into a percentage of the treatment steps implemented correctly by the number of possible steps on the checklist and multiplying that number by 100.The procedural integrity was 100% for all observations of treatment conditions, while the procedural integrity of baseline and withdrawal conditions was 0%. In addition, procedural integrity IOA was calculated by calculating the total number of agreements for each step divided by the number of agreements plus disagreements and multiplied by 100. Disagreements were defined as instances in which an observer recorded the behavior as occurring in a step, while the

other observer did not record the same behavior as occurring during that step. Procedural integrity IOA was 100% for all observations across all phases.

Procedure

Institutional approval (see Appendix E) was obtained prior to the implementation of any procedures in the current investigation.

Classroom Observation. Observers were trained in the operationalization, observation, and recording procedures of student AEB, student DB, teacher public praise, and teacher private praise prior to the collection of baseline data (See Appendix F). This training consisted of didactic reviews of the definitions followed by one training observation in which the secondary observers were required to achieve 90% interobserver reliability. The procedures were in place to retrain (i.e., didactic review of definitions and training observation requiring 90% IOA) secondary observers if their IOA fell below 80% on any given observation.

All students in the classroom were separated into small groups of equal numbers in order to provide a systematic random sample of the entire classroom. These groups consisted of three to five students, depending on the classroom size and layout. At the beginning of the observation, the first student in each group was observed, starting at a predetermined location or focal point in the classroom and moving away from that location. After the first student in the first group was observed, the observer moved to the next first student in the second group, then the first student in the third group, and onward until the final student in the final group of students had been observed. This process was repeated until the 20-min observation elapsed, and the observation terminated. Observers frequently and voluntarily created notes and markings on the observations sheets with clues to assist with the complex procedure.

An audio recording cued the beginning of each 10-s observation interval with spoken consecutive interval numbers. Momentary time-sampling was chosen because it provides close approximations to the actual duration of behaviors in applied settings (Powell, Martindale, Kulp, Martindale, & Bauman, 1977; Saudargas & Zanolli, 1990). Students were individually observed for 1-2 s of each 10-s interval (i.e., momentary time-sampling) as to the occurrence of AEB and DB, which were recorded. The 10-s momentary time-sampling procedure was the most efficient choice to reduce observer error, increase validity of the observations, and increase observer and interobserver reliability (Ary, 1984; McDowell, 1973). Both teacher public and private praise statements were recorded using a frequency within 10-s interval procedure. Praises (i.e., public or private) were coded as occurring if the teacher praised (a) the student being observed, (b) any other student in the class, (c) any group of students in the class, or (d) the class as a whole.

Teacher Training. The classroom teachers were trained to implement each experimental condition prior to and on the day of the first observation for that specific phase. First, the primary investigator verbally described the procedures of the condition to the teacher. In addition, the teacher was provided with a handout summarizing the procedures for effective praise (see Appendix G). Second, the primary investigator modeled the correct implementation of praising with the teacher playing the role of the student. Third, the modeling roles were switched with the teacher role-played with the primary investigator playing the role of student. Additionally, the teachers received a verbal precorrection from the first author noting a change of conditions (i.e., and associated teacher behaviors) upon the last day of each phase. Direct skills retraining occurred if a teacher's total for administering the specific type of praise occurred at less

than once per two minutes for any given observation. In addition, procedures were in place to retrain the teachers in delivering only the type of praise that should occur in each treatment phase if the wrong type of praise was delivered at a total of more than once per two minutes in any given observation. This was in place to help minimize the overlap between treatment conditions and ensure integrity of the treatment.

Baseline. In this phase, the teacher presented their normal classroom routine with no training or assistance. The teacher was not asked to implement any new procedures during this phase. The procedure used in the withdrawal phase was identical to that of the original baseline phase. Teacher public and private praise were measured, along with the students' AEB and DB.

Public Praise. In this phase, the teacher was trained to administer effective (see Appendix G) and public (see Appendix H) praise. Specifically, teachers were trained to administer praise that was contingent on the student's AEB and other appropriate classroom behaviors (e.g. raising hand to ask question, sitting quietly in seat, working on classwork quietly). The teachers were trained to praise that was behavior-specific (e.g., "I like the way you raised your hand."), effort-based (e.g., "You worked hard on your assignment." instead of "You are so smart."), and immediate (i.e., within 30 s of occurrence). Teachers were provided the MotivAider device to wear in order to increase and maintain a rate of praise statements. The device was configured to prompt the teachers to provide public praise at a rate of one praise statement per two minutes (i.e., 0.5 praise statements per min).

For public praise, teachers were trained to deliver statements at a volume similar to that of regular classroom instruction and loud enough to be heard by the majority of students in the classroom from any location within the classroom. For physical praise

(e.g., pat on the back or high-five), teachers were instructed that it should be very apparent to other students in the class or combined with some verbal acknowledgement to be publicly noticeable. At the end of the first teacher public praise phase, the teacher was asked to complete the *IRP-15* (Martens et al., 1985), so that the acceptability of the public praise condition could be assessed.

Private Praise. In this phase, the teacher was trained in administering effective (see Appendix G) and private (see Appendix I) praise. Again, teachers received training that instructed them to administer praise that was contingent on student's appropriate classroom behaviors and utilize behavior-specific, effort-based, and immediate statements. Teachers were again provided a MotivAider device to wear in order to increase and maintain the rate of praise statements. The device was similarly configured to prompt the teachers to provide private praise at a rate of one praise statement per two minutes (i.e., 0.5 praise statements per min).

Private praise was delivered under the same set of behavioral contingencies as in the public praise phase. However, teachers were instructed to deliver private praise at a volume similar to that of a whisper and loud enough only to be heard by the target student and possibly a person next to the student. Teachers were told that private praise should not be able to be heard by the majority of students in the classroom. In addition, both the verbal and physical praises should be discreet and delivered in a warm and meaningful way to the student, when possible. At the end of the first teacher private praise phase, the teacher was asked to complete the *IRP-15* (Martens et al., 1985), so that the acceptability of the private praise condition could be assessed.

Data Analysis

Visual analysis. The AEB and DB percentages for each classroom and teacher's rates of public and private praise across baseline and treatment conditions were graphed and visually inspected (Kazdin, 1982, 1984). Within-classroom analyses were conducted for each of the four classrooms to determine the effectiveness of the treatment phases on student AEB, DB, as well as teacher public and private praise. In addition, between-series comparisons were conducted to further assess and compare the four classrooms to evaluate the treatment phases on teacher public and private praise, as well as student AEB and DB.

Statistical Analysis. Multilevel modeling was used in order to calculate the average treatment effects and determine statistical significance of the treatment effects (Ferron, Bell, Hess, Rendina-Gobioff, & Hibbard, 2009; Van der Noortgate & Onghena, 2003). The data were not independent of each other because of the repeated observations within classrooms. Therefore, the assumptions of many statistical procedures would be violated due to the students' scores not being independent. Multilevel modeling does allow for statistical inference via heterogeneity of the treatment effects across cases as well as the serial dependence of scores within cases. Multilevel modeling can also be used to account for other factors in the lack of independence. Specifically, first order autocorrelations showed how much scores taken at a later period were predicted by the score that occurs immediately before it. In addition, estimates of fixed-effects (i.e., average treatment effects) and covariance parameters (i.e., variability in treatment effects, first order autocorrelation, and residual variance) were calculated.

Odds Ratios. Data were also analyzed to demonstrate the level of impact of the results using Parker and Hagan-Burke's (2007) methodology. Parker and Hagan-Burke

(2007) focused on the odds of improvement during a treatment phase compared to baseline phases. These odds ratios are calculated by dividing the total number of treatment data points that do not overlap with baseline data over the number of points that do overlap with baseline data. The baseline odds of improvement are calculated by dividing the number of baseline points that do overlap with treatment data with the number of data points that do not overlap. For the current investigation, the odds ratios compared the odds of improvement during treatment (i.e., teacher public praise, teacher private praise) by the odds of improvement in baseline. This indicated how likely improvement was during treatment as compared to the baseline phase.

CHAPTER IV

RESULTS

Visual Analysis

The AEB and DB percentages for each classroom and teacher's rates of public and private praise across baseline and treatment conditions were graphed and visually inspected (Kazdin, 1982, 1984). The results of Teachers 1 and 2 that were in the ABCAC condition are displayed in Figure 1. The results of Teachers 3 and 4 that were in the ACBAB condition are displayed in Figure 2. For all four teachers, there was an increase in AEB that was immediate and substantial following movement to the Public Praise or Private Praise conditions after baseline. All baseline phases were either stable or demonstrating a decreasing trend during treatment phase changes. Afterward, the Private Praise and Public Praise conditions were functionally equivalent across all treatment phases with regard to AEB and DB.
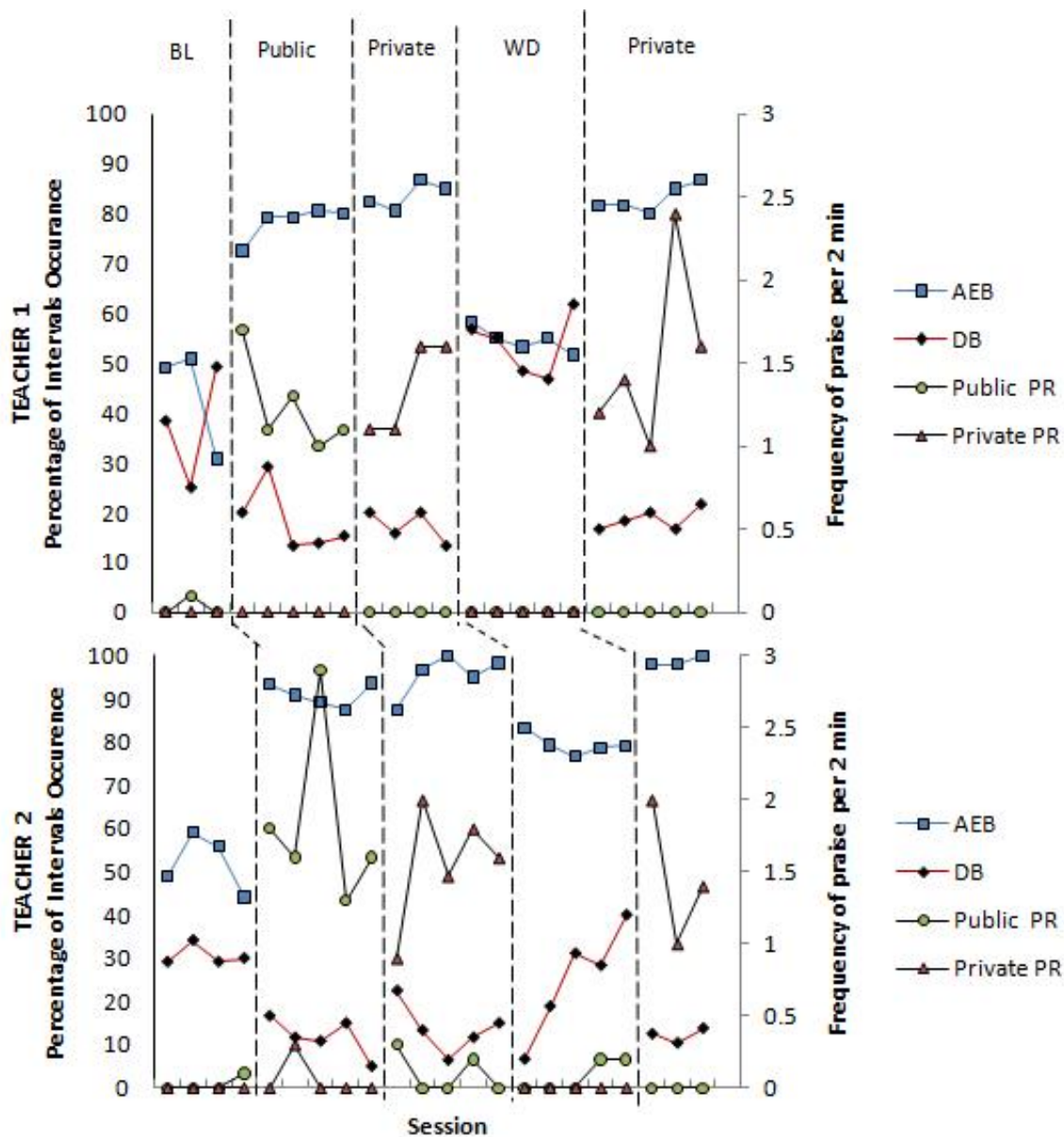
Figure 1. Multiple baseline graphs for Teacher1 and Teacher 2 with ABCAC order of treatment.
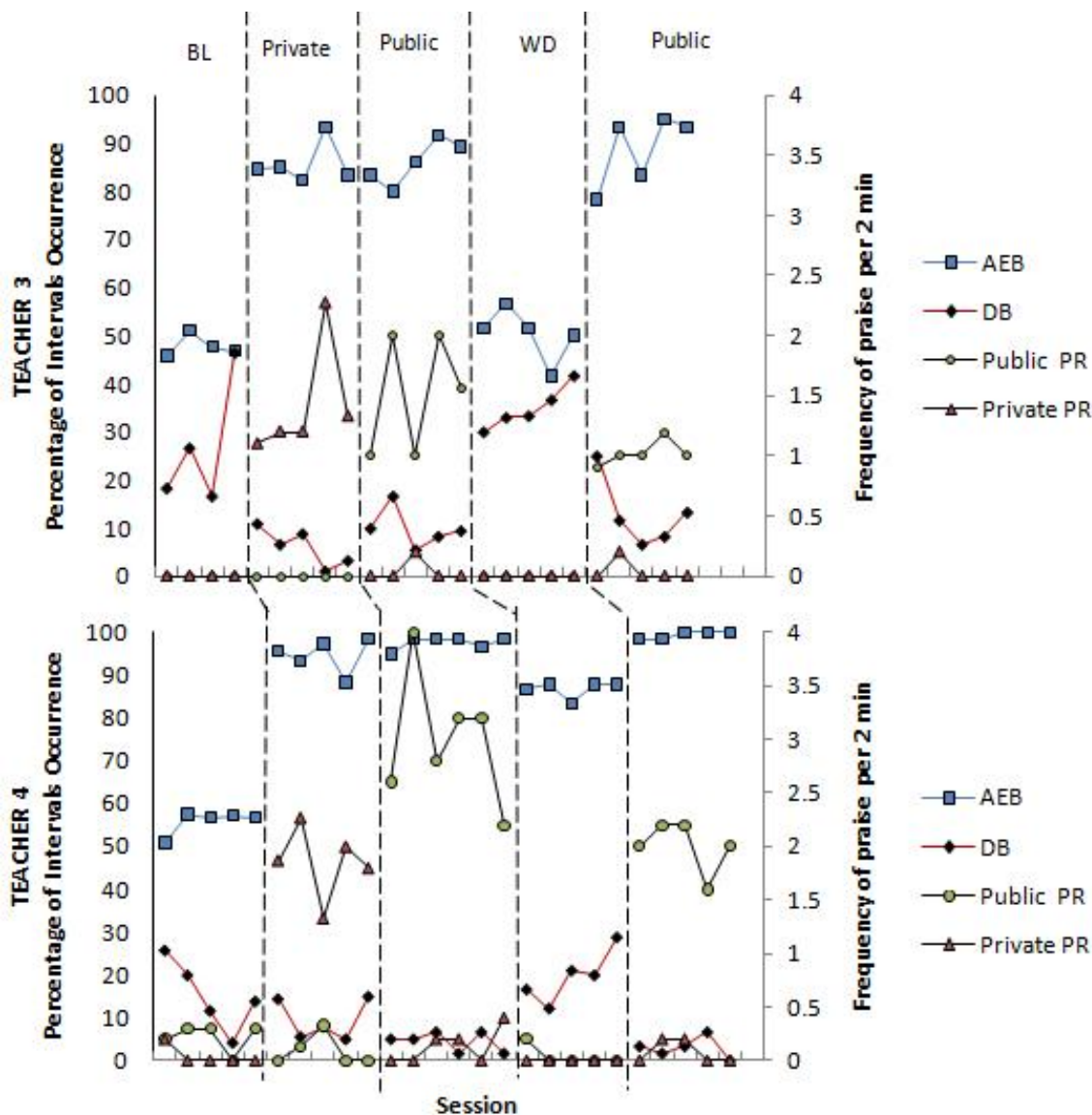
Figure 2. Multiple baseline graphs for Teacher 3 and Teacher 4 with ACBAB order of treatment.

The frequency of praise statements during treatment conditions (i.e., both Public & Private) was highly variable ($M = 1.68$ statements per 2 min; range = 0.9 to 4.0), though they remained above 1 praise statement per two min across all but two observations. The mean AEB and DB percentages across conditions by teacher are displayed below in Table 2.

Table 2

Mean Appropriately Engaged Behavior and Disruptive Behaviors Percentages by

Condition

Phases	Teacher 1		Teacher 2		Teacher 3		Teacher 4	
	AEB	(DB)	AEB	(DB)	AEB	(DB)	AEB	(DB)
Baseline	43.6	(37.5)	52.0	(30.6)	47.8	(27.0)	55.7	(15.1)
Withdrawal	54.6	(53.7)	79.4	(25.0)	50.3	(34.9)	86.6	(19.8)
Public Praise	78.3	(18.3)	90.1	(11.8)	87.4	(11.5)	98.3	(3.8)
Private Praise	83.3	(18.0)	96.7	(13.2)	87.5	(6.2)	94.6	(9.6)

Note. AEB = Appropriately Engaged Behavior; DB = Disruptive Behaviors.

Means and standard deviations across combined participants' AEB were computed for

baseline ($M = 50.5\%$, $SD = 7.0$), withdrawal ($M = 67.8\%$, $SD = 16.2$), Public Praise ($M =$

90.3%, $SD = 8.0$), and Private Praise ($M = 89.8\%$, $SD = 7.0$) phases. Means and standard

deviations across combined participants' DB were computed for baseline ($M = 26.1\%$,

$SD = 12.1$), withdrawal ($M = 33.3\%$, $SD = 15.2$), Public Praise ($M = 9.9\%$, $SD = 6.9$), and

Private Praise ($M = 12.8\%$, $SD = 5.8$) phases.

Treatment Acceptability

All teachers considered both Public and Private Praise conditions acceptable

according to Von Brock and Elliott's (1987) criteria. Both treatments had mean scores of

75.5 on the modified *IRP-15* with mean item responses of 5 (i.e., agree). Teachers 1 and

3 noted that they preferred the Private Praise condition with scores of 82 and 86 to the

Public Praise condition with scores of 74 and 79, respectively. Conversely, Teachers 2 and 4 noted that they preferred the Public Praise condition with scores of 80 and 69 to Private Praise condition scores of 72 and 62, respectively.

Multilevel Modeling

Multilevel modeling was used in order to calculate the average treatment effects and determine statistical significance of the treatment effects (Ferron, Bell, Hess, Rendina-Gobioff, & Hibbard, 2009; Van der Noortgate & Onghena, 2003). Estimates of fixed effects and covariance parameters were calculated in order to examine the average percentage of intervals observed that AEB and DB varied across the (a) no treatment phases (i.e., baseline & withdrawal),(b) treatment conditions (i.e., combined Public Praise& Private Praise phases), and (c) the Public vs. Private Praise phase (see Table 3).

Table 3

Multilevel Analyses Examining Differences between Conditions for AEB and DB

Parameter	Estimate		SE	
	AEB	DB	AEB	DB
Fixed Effects[a]				
Baseline	59.6	31.1	4.9	5.8
Baseline vs. *Public or Private*	30.7**	-20.0*	4.3	3.5
Public vs. *Private*	-1.1	0.72	5.2	3.3
Covariance Parameters[b]				
Intercept	-	129.5	-	111.6
Baseline vs. *Public or Private*	53.9	33.2	60.1	42.2
Public vs. *Private*	88.6	24.1	93.4	37.8
AC-1	.90**	.24*	.05	.12
Residual	196.2*	49.7**	88.7	8.8

Note. AEB = Appropriately Engaged Behavior; DB = Disruptive Behaviors.

The random intercept for AEB approached zero and was excluded from the final model.

[a]Fixed effects represent averages during baseline or the average differences between phases. [b]Covariance parameters include the variances of effects, the residual variance, and the first-order autocorrelation coefficient (AC-1).

**p< .01, *p< .05

According to the multilevel modeling, the average percentage of AEB in the no treatment phases was 59.6%. The average percentages of AEB increased by 31% to a total of 90%during the combined treatment phases. The difference between AEB levels in the no treatment phases and treatment phases was statistically significant with $F(1, 2.9) = 51.8$, $p = .006$ for the treatment effect on AEB. According to the multilevel modeling, the average percentage of DB in the no treatment phases was 31%. The average percentages of DB decreased by 20% to a total of 11%during the combined treatment phases, which was statistically significant with $F(1, 2.8) = 32.3$, $p = .013$ for the treatment effect on DB.

The differences between the Public Praise and Private Praises phase were not statistically significant for either AEB with $F(1, 2.9) = .043$ (1% interval difference) or DB with $F(1, 2.6) = .047$ (0.7% interval difference). The treatment effects were allowed to vary across classrooms in the models, and there is a 95% chance that the levels of AEB would increase by 17% to 44% if the treatments occurred again. In addition, there is a 95% chance that the levels of DB would decrease by 8% to 32% if the treatments repeated.

Multilevel modeling can measure first order autocorrelation of residuals. This value expresses the degree to which repeated measures (i.e., observations) are correlated (i.e., interpreted like Pearson's r). The first order autocorrelation coefficient for AEB was .90, which is statistically significant ($p < .001$). The first order autocorrelation coefficient for DB was .24, which is statistically significant ($p < .05$). These significant autocorrelations indicated that each observation was statistically correlated to the subsequent observation, and the data and errors were not independent. Therefore,

multilevel modeling was the appropriate procedure because a Repeated Measures

Analysis of Variance (RMANOVA) assumes errors are independent.

Effect Sizes

An effect size can also be calculated by dividing the difference between baseline

and treatment means by the square root of the residual variance. This yields a

standardized mean difference effect size that can be interpreted like Cohen's (1988) *d*

(i.e., it should be noted that a larger magnitude is typically required for single-case

research due to the fewer sources of variance in the effect size's denominator). The

standardized mean difference effect sizes for AB contrasts between two to three standard

deviations are noted to indicate the presence of a significant treatment effect for single-

subject experimental designs (Parker & Brossart, 2003; Parker et al., 2005). The effect

size for the treatment conditions for AEB was 2.2, suggesting that AEB increased by 2.2

standard deviations during the combined treatment (i.e., Public & Private) conditions

compared to no treatment conditions (i.e., baseline & withdrawal). The effect size for the

treatment conditions for DB was -2.8, suggesting that DB decreased by 2.8 standard

deviations following the treatment conditions compared to no treatment phases.

Odds Ratios

Appropriately Engaged Behavior. Data were also analyzed to demonstrate the

level of impact based on Parker and Hagan-Burke's (2007) methodology. The odds ratio

compares the ratios of improvement in the treatment and no treatment phases. For AEB,

the number of treatment data points that *do not* overlap with the no treatment data points

over the number of points that *do* overlap with baseline data equals 57/1, or 57. In

addition, the number of no treatment data points that *do* overlap with treatment data

points over the number of points that *do not* overlap (1/35 = .0286). The total odds ratio

for AEB is 57/.0286 = 1,995.Therefore, the odds or likelihood of improvement in treatment (i.e., Public & Private Praise) phases was 1,995 times that of the no treatment (i.e., baseline & withdrawal) phases across all four classrooms. For the Private Praise condition, the total odds ratio for AEB is 26/.0286 = 910.Therefore, the odds or likelihood of improvement in the Private Praise phase was 910 times that of the no treatment (i.e., baseline & withdrawal) phases across all four classrooms. For the Public Praise condition, the odds ratio could not be computed due to a lack of overlap in data points (i.e., cannot divide by zero). However, it is likely that the Public Praise odds ratio would closely approximate and be slightly greater than the odds ratio of the Private Praise condition for AEB.

Disruptive Behaviors. The number of treatment data points that *do not* overlap with the no treatment data points over the number of points that *do* overlap with baseline data equals 34/23, which is 1.478 for DB. In addition, the number of no treatment data points that *do* overlap with treatment data points over the number of points that *do not* overlap (9/27 = .333). The total odds ratio for DB is 1.478/.333 = 4.43. Therefore, the odds or likelihood of improvement in treatment (i.e., Public & Private Praise) phases was 4.4 times that of the no treatment (i.e., baseline & withdrawal) phases across all four classrooms. For the Private Praise condition, the total odds ratio for DB is 1.25/.02 = 62.5. Therefore, the odds or likelihood of a reduction in DB for the Private Praise phase was 62.5 times that of the no treatment (i.e., baseline & withdrawal) phases across all four classrooms. For the Public Praise condition, the total odds ratio for DB is 1.58/.161 = 9.8. Therefore, the odds or likelihood of a reduction in DB for the Private Praise phase was 9.8 times that of the no treatment (i.e., baseline & withdrawal) phases across all four classrooms.

Odds ratio summary. It is clear that the AEB was likely to be improved as a result

of both treatments (1,995 times more likely to improve), Private Praise (910 times more

likely to improve), and likely Public Praise conditions compared to the no treatment

phases (i.e., both baseline & withdrawal). It is also clear that DB was likely to be

improved as a result of implementation of treatment (4.4 times more likely to improve),

Private Praise (62.5 times more likely to improve), and Public Praise (9.8 times more

likely to improve) conditions compared to the no treatment phases. It should be noted that

there were likely treatment carry-over effects (e.g., 17.3% increase in AEB during

withdrawal phase compared to baseline) that decreased the AEB odds ratios. Even so,

these numbers suggest that both treatments were more likely to increase AEB and lower

DB compared to the no treatment phases.

CHAPTER V

DISCUSSION

Overview

The overall findings from the results were evident and consistent across the visual

analyses of the graphs, multilevel models, effect sizes, and odds ratios. This combination

provides strong support for praise as an effective classroom management tool.

Specifically, both teacher-delivered public praise and teacher-delivered private praise

were effective at substantially increasing student AEB (i.e., research questions 1 & 2) and

decreasing student DB (i.e., research questions 4 & 5). Both treatments resulted in mean

AEB increases near 31% and mean DB reductions near 20%, resulting in clinically

significant effect sizes between 2.2 for AEB and 2.8 for DB (Parker & Brossart, 2003;

Parker et al., 2005). The Public Praise and Private Praise phases were functionally

equivalent (i.e., near 1% mean difference) with regards to AEB (i.e., research question 3)

and DB (i.e., research question 6).

The order of treatment implementation was systematically varied within the

multiple-baseline design across the pairs of classrooms to control for possible threats to

internal validity and to demonstrate treatment effects. Both Public Praise and Private

Praise phases were effective following the baseline phase, following the withdrawal

phase, and in all treatment phases regardless of order of implementation. The clear

separation between the no treatment and treatment data points demonstrated immediate

experimenter control over student AEB and DB following implementation of treatment.

The high levels of IOA, treatment integrity, and treatment integrity IOA suggest high

levels of validity and reliability exist for the results.

Concerning Public and Private Praise

Several of Ware (1978), Bartholowmew (1993), and Brophy's (1981) concerns about types of praise involved the public nature of praise and the negative effects that would occur as a result of public attention. For these reasons, it is likely that private praise would be the preferred way to praise students. Conversely, Albert Bandura (1969) and others would likely have suggested that public praise would be at least partially more effective than private praise due to the social learning components. If the critics of public praise were correct, then there would have been either (a) decreases in AEB following public praise or (b) clear and significant differences in mean AEB compared to private praise. However, there were no clinically or statistically significant differences (i.e., 1 % interval difference) between the treatment conditions and both public and private praise resulted in significant improvements in AEB and DB. The results of the present study illustrate that the students' behaviors improve whether or not the praise is delivered publicly or privately. This finding confirms and extends Houghton et al.'s (1990) study that suggested private praise could be effective at improving student behaviors by adding public components, contrasting the two components, and operationalizing all treatments in systematic ways.

While it is not clear how social learning could explain the effectiveness of private praise, it is possible that once a student received the private praise, he or she might have been able to recognize when the teacher was delivering private praise to another student, regardless of whether they could hear the praise statement. This detection could be visual in nature, or the students could have discussed the praise sometime after it had occurred. Even so, it is likely that social learning is not as important for praise at the high school level and that praising individual students has the effect of directly reinforcing their

appropriate behaviors. In addition, if teachers are trained to deliver private praise to many students, then they will eventually praise most or all of the students in the classroom if given enough time.

One interesting finding of the current study involves the teacher's perceptions of praise. Elwell and Tiberio (1994) focused on what the students preferred with respect to the type of delivery of praise, but there are no clear differences between public or private praise on student behaviors. However, the teachers involved in the current study did have clear preferences about praise. Teachers 2 and 4 strongly voiced concerns about praising students privately and anecdotally voiced their support for public praise, while Teachers 1 and 3 preferred privately praising students. This issue is important because these individual differences can have direct effects of the acceptability, implementation, and integrity of praise interventions for teachers at the high school level.

The instructional demands of the class that day are an important component when considering teacher perceptions of praise. For example, it is difficult for a teacher to praise a student immediately and privately in the middle of a lecture or when seated at their desk. It is much easier for them to praise the same student privately when the students are completing individual seat work. In addition, private praise was always administered in close proximity to the student, which involved moving around the class. Public praise was administered when the teacher was at their respective desk, during lectures, and also when moving around the classroom. Therefore, there are slight differences in response effort required by the teachers that depend on the instructional demands and physical layout of the classrooms involved.

In the current study, an issue that arose with public praise occurred when a teacher voiced a concern about praising publicly while the students were taking a brief

classroom examination. The teacher did not want to interrupt other students' thought processes and wanted to instead keep them directed toward their task. However, it should be anecdotally noted that even in this circumstance, the teacher publicly reprimanded during tests despite the fears of further interruptions. Even so, these concerns might potentially affect the acceptability and integrity of praise interventions, so they should be strongly considered during the consultation process. Regardless, the present study confirmed that students' AEB and DB will improve following either public private or private praise interventions.

<div align="center">Concerning the Criticisms of Praise</div>

The present findings suggest that both publicly and privately administered teacher praise was effective at increasing appropriate behavior and reducing inappropriate behavior of high school students in general educational settings. This is consistent with numerous studies and reviews illustrating the effectiveness of praise with children and students (see Cherne, 2008; Hurlock, 1924; Kennedy & Willcutt, 1964; Stage & Quiroz, 1997). These findings are at odds with the notion that students will not directly benefit from receiving behaviorally contingent, effort-based, immediate, and specific praise in the classroom (see Bennett, 1988; Brophy, 1981; Geist & Hohn, 2009; Kohn, 1993). Just as Binet (1904) sought to discover how the majority of students improved in the classroom to judge an intervention's effectiveness, these results show that the majority (i.e., systematic random sampling of the entire classroom) of the classroom's AEB (i.e., 31% increase) and DB (i.e., 20% decrease) improved as a result of receiving the treatment conditions. While it remains possible, albeit unlikely, that there was one or more students in the four classrooms that did not enjoy the praise, the demonstrated

benefits of the praise for all students outweighed any possible risks (i.e., none have been empirically identified) associated with praise for the one student.

Bartholowmew (1993) also suggested that public teacher praise could cause embarrassment if the student did not want the public praise. However, it is important to consider that teachers naturally praise high school students at a very low rate (see Wheldall et al., 1989; White, 1975), and this is especially true when teachers expect students to have a greater sense of internal motivation for their academic work and behavior (see Brophy, 1981; Cooper & Lowe, 1977). White (1975) also noted that praise is more likely to be administered for academic rather than behavioral successes. Therefore, if a hypothetical teacher naturally praises very little and does administer praise once, then it would likely be delivered to a student that was demonstrating appropriate academic behavior. In this hypothetical scenario, it is understandable why praise might serve to bring unwanted attention to the student (e.g., embarrassment with peers). The student would only be receiving praise for saying the correct answer in class.

In this hypothetical scenario, there are two possible solutions to help that student not be embarrassed. The first solution would involve the teacher praising many students in the classroom for academic and behavioral successes. The second solution would be to not praise the student at all. Teachers in the current study did demonstrate very low natural rates of praise and were subsequently trained (e.g., modeling, role-playing, didactics) to deliver praise to *many* students for appropriate behaviors in specific ways. This (a) helped prevent the scenario with which Ware (1978) and Bartholowmew (1993) were concerned and (b) allowed the students to experience the benefits of praise. The present findings illustrate why Ware's (1978) and Bartholomew's (1993) suggestions that students might not enjoy praise should not be used as justification not to administer praise

to students. Moreover, the current findings illustrate exactly why teachers should praise students and how the addition of this positive technique can be effective for improving appropriate behaviors and decreasing inappropriate behaviors for students at the secondary level. Overall, the traditional arguments against the use of praise can best be answered by Albert Binet (1898), who surmised that many common practices in education:

> Ought to be completely suppressed, for it is all but founded on 'knack,' the result of preconceived ideas; it is based on gratuitous assumptions, it confused exact demonstration with literary quotations, it answers the most serious questions by reference to authorities…, it substitutes exhortations and sermons for facts; it is mere verbiage. (Binet, 1898, p. 1)

Other Effects of Praise at the Secondary Level

The four high school teachers in the current study reinforced AEB by praising when it occurred and this had an indirect effect on decreasing DB. This demonstrated that both public and private forms of praise can serve as a proactive tool that will preempt student inappropriate behaviors (e.g., inappropriate vocalizations, out of seat, touching peers, playing with objects) by replacing it with appropriate behaviors (e.g., working quietly on-task at desk, directing eyes toward teacher, engaging in classroom activity). This finding is more apparent when one considers that AEB and DB were not operationalized into mutually exclusive categories, but rather as two sets of behaviors that often co-occurred.

In addition, the high school teachers' behaviors also changed as a result of implementing the praise interventions. Though the teachers were not instructed to alter the delivery of reprimands or negative consequences, it is likely that the increases in the

delivery of praise led to an indirect decrease in reprimands. Binet (1909) would likely have believed the increase in a stimulating measure (i.e., praise) and decrease in the repressive measures (i.e., reprimand) would have been critical to the teachers becoming more effective at classroom management. Teachers anecdotally reported enjoying more amenable interactions with students following the implementation of the praise conditions in their respective classrooms. Teacher 3 attributed the change to an altered classroom dynamic that had previously consisted of overuse of reprimands and break detentions. Following treatment, she noted that the students appeared more relaxed and demonstrated less defensive vocalizations during the class.

Another important finding involves the age and maturity of the students examined. For the current investigation, (a) no student perceptions of praise were surveyed, (b) no internal motivations before or after the praise treatments were measured and (c) no peer interactions were monitored for signs of embarrassment from the praise (i.e., outside of those contained in the DB operationalization). Despite these reasons, both public praise and private praise treatments were effective at increasing AEB and decreasing DB for typically developing high school students (i.e., majority ninth grade students) in general educations classrooms.

It should also be noted that the ninth grade students in Elwell and Tiberio's (1994) study noted the most negative attitudes to praise with only 13% reporting they would *always*, while 24% reporting they would *never* prefer to be praised for appropriate behaviors. For all secondary students (i.e., seventh through twelfth), the pattern was reversed with 26% reporting *always* and 12% reporting *never*. In addition, only 4% of ninth graders in Elwell and Tiberio's (1994) study noted that they would prefer loud praise (i.e., public), while 33% reported quiet praise (i.e., private). However, the results

from the present study illustrate that these surveyed perceptions did not correlate to the actual and significant increases in AEB and decreases in DB following the implementation of public praise intervention. In addition, there were no significant differences between public and private treatments. While it is true that ninth grade students in Elwell and Tiberio's (1994) study reported they did not enjoy public praise, the authors even noted that student responses "may not necessarily translate into actual pupil behaviors" (p. 325). This finding poses important questions to the importance of arguments against the utilization of praise treatments in the classroom based on student perceptions. Academic tasks and instructions are not based on student preferences of the curricula, so it is not clear why behavioral tasks and instructions derived from abstract student preferences should inform the way high school teachers teach.

<div align="center">Recommendations for Future Research and Limitations</div>

The praise rate as used in the current investigation could inform future studies aimed at delivering praise in secondary classrooms. The rate of one praise statement per two minutes (i.e., 0.5 praise statements/min) was chosen though there was no evidence-base recommending it for students at the secondary level. However, this rate was (a) low enough to be acceptable to the four teachers, (b) low enough to have high levels of treatment integrity, and (c) high enough to be effective at improving the students' behaviors. Even so, it is possible that a more efficient rate could be identified through research utilizing systematic variations in the rates of praise.

There is also clear need for more research examining individual differences in teachers' perceptions of praise how this is correlated with acceptability and integrity of praise interventions. In addition, reprimands were not tracked in the current study and this limits the inferences that can be drawn regarding the possible mechanisms

responsible for change in classroom dynamics that were reported by several teachers. Reprimand tracking would also allow a naturalistic examination of whether or not reprimands would decrease via simply prompting teachers to praise more frequently (i.e., not systematically controlling reprimands).

Future researchers examining praise in high school classrooms should also take note of the instructional demands the specific classrooms involved and attempt to systematically control when the observations occur. This systematic effort would increase the difficulty of implementation, but could reduce the possible relevance of (a) time of day and (b) time elapsed in class as possible confounding variables regarding behavioral observations. In addition, further replication of the current findings is needed due to the limitations associated with single-subject experimental designs (i.e., four classrooms). Even so, the four classrooms involved were drawn from core subjects (e.g., English, Math) and had representative ethnic, academic, and social demographics from the high school in which the study occurred.

Conclusions

The debate about the effectiveness of praise is older than most school-based professionals realize (see Hurlock, 1924; Kennedy &Willcutt, 1964). The current investigation offers definitive support for the use of praise at the secondary level in public school classrooms. Both public and private praise were effective praise treatments that resulted in an average 31% increase and 20% decrease in AEB and DB, respectively. These findings were supported by visual analysis of the graphed data, multilevel modeling of mean differences, computed effect sizes, and odds ratios. Despite a large and growing evidence-base demonstrating praise's effectiveness, it is likely that the debate over whether to use praise will continue. Even so, the present study showed that both

public and private forms of praise are effective tools that can have dramatic effects at the

secondary level of education, and it is recommended that teachers and school-based

professionals do not hesitate to utilize praise for students in their classrooms and schools.

APPENDIX A

TEACHER CONSENT FORM

University of Southern Mississippi
Consent Document for Research Participants

Title of Study:
Public versus Private Praise: A Direct Behavioral Comparison in Secondary Classrooms

Purpose
You are being asked to participate in a study that is aimed at identifying which praise intervention (i.e., public or private) is more effective in increasing students' appropriate engaged behavior and reducing disruptive behaviors in the secondary classroom.

Participants:
Your students must be enrolled in a general education classroom. The students in your classroom must engage in appropriately engaged behavior in no more than 70% of the observed intervals in a 20-min classroom screening observation. If your classroom does not meet criteria a school psychologist-in-training at USM may still provide you with assistance for other ways to address the classroom's problem behaviors.

Procedure:
If you agree to be in this study and if your classroom is selected for the study, you will be asked to give instructions to your classroom in the same manner that you would on a regular basis. If your classroom is observed to engage in appropriate behavior no more than 70% of the observed intervals in a 20-min classroom screening observation, at least two more observations will be conducted in this same manner. Next, you would then meet with the primary investigator to receive direct training on one of the types of praise. Following this, you will reward your students by giving them the first type of praise for appropriate behavior. In addition, you wear a portable electronic device that will privately prompt you to administer praise. Next, you will stop administering the previous type of praise, be directly trained in the second type of praise, and administer this type to students in the same manner as before. The experimenter and a trained graduate student will observe you and your classrooms' behavior to see if there is a difference in your classrooms' engagement in appropriate behavior based on the procedures used.

Benefits/Risks to Participant:
Your participation in the study may help you increase your students' engagement in appropriate and academic behaviors in the classroom. One possible risk includes continued misbehavior of students. Your students will be given public and private praise for engagement in appropriate behavior.

Page 1 of 2

Voluntary Nature of the Study/Confidentiality:
Your participation in this study is entirely voluntary and you may refuse to complete the study at any point during the experiment, or refuse to answer any questions with which you are uncomfortable. In addition, all information obtained during the study will be kept confidential. All information that may identify you will be withheld. Your name and other identifying information will not be used in the research papers, any submission to a professional journal for publication, or presentation. The only circumstances in which we would release information about you or your students would be if one of your students tells use he/she is a harm to self or others, if one of your students is abused, if the release of information is court ordered, or if there is a medical emergency in which release of information is important for someone's safety.

Contacts and Questions:
At any time you may withdraw from the study or ask any questions you may have regarding this study. Questions concerning the research should be directed to Travis Blaze at (405) 410-XXXX (email: john.blaze@eagles.usm.edu) or Dr. Joe Olmi at (601) 266-XXXX (email: d.joe.olmi@usm.edu)

The Human Subjects Protection Review Committee has reviewed this project. This ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject may be directed to the chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS 39406-0001, (601) 266-6820. A copy of this form will be provided to you.

Participant's Consent:
I have had the purposes and procedures of this study explained to me and have had the opportunity to ask questions. My questions have been answered to my satisfaction, and I am voluntarily signing this form for me to participate in this research study. My signature shows my willingness to allow me to participate in this study under the conditions stated.

_____   _____
Primary Investigator   *Date*

This section to be completed by teacher.

_____   _____
Name of Teacher   *Date*

APPENDIX B

Teacher: _____Date: _____   Observer name: _____

IOA:

Phase: _____   (Momentary TS for AEB & DB - can co-occur)

(Frequency within intervals for both Praise conditions)

	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	2.4	2.5	2.6
(Circle)	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB
Public Praise												
Private Praise												
	3.1	3.2	3.3	3.4	3.5	3.6	4.1	4.2	4.3	4.4	4.5	4.6
(Circle)	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB
Public Praise												
Private Praise												
	5.1	5.2	5.3	5.4	5.5	5.6	6.1	6.2	6.3	6.4	6.5	6.6
(Circle)	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB
Public Praise												
Private Praise												
	7.1	7.2	7.3	7.4	7.5	7.6	8.1	8.2	8.3	8.4	8.5	8.6
(Circle)	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB
Public Praise												
Private Praise												
	9.1	9.2	9.3	9.4	9.5	9.6	10.1	10.2	10.3	10.4	10.5	10.6
(Circle)	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB
Public Praise												
Private Praise												

	11.1	11.2	11.3	11.4	11.5	11.6	12.1	12.2	12.3	12.4	12.5	12.6
(Circle)	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB
Public Praise												
Private Praise												
	13.1	13.2	13.3	13.4	13.5	13.6	14.1	14.2	14.3	14.4	14.5	14.6
(Circle)	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB
Public Praise												
Private Praise												
	15.1	15.2	15.3	15.4	15.5	15.6	16.1	16.2	16.3	16.4	16.5	16.6
(Circle)	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB
Public Praise												
Private Praise												
	17.1	17.2	17.3	17.4	17.5	17.6	18.1	18.2	18.3	18.4	18.5	18.6
(Circle)	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB
Public Praise												
Private Praise												
	19.1	19.2	19.3	19.4	19.5	19.6	20.1	20.2	20.3	20.4	20.5	20.6
(Circle)	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB	AEB DB
Public Praise												
Private Praise												

APPENDIX C

INTERVENTION RATING PROFILE-15

Please respond to each of the following statements thinking about the intervention you implemented. Please then circle the number associated with your response. Be sure to answer all statements.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
This was an acceptable intervention for the students' problem behavior.	1	2	3	4	5	6
Most teachers would find this intervention appropriate for behavior problems in addition to the one described.	1	2	3	4	5	6
This intervention was effective in helping to change the students' problem behaviors.	1	2	3	4	5	6
I suggest the use of this intervention to other teachers.	1	2	3	4	5	6
The students' behavior problems were severe enough to warrant the use of this intervention.	1	2	3	4	5	6
Most teachers would find this procedure suitable for the problem behaviors described.	1	2	3	4	5	6
I was willing to use this intervention in the classroom setting.	1	2	3	4	5	6
This intervention did *not* result in negative side effects for the students.	1	2	3	4	5	6
This intervention was appropriate for a variety of students.	1	2	3	4	5	6
This intervention was consistent with those I have used in the classroom setting.	1	2	3	4	5	6
The intervention was a fair way to handle the students' problem behavior.	1	2	3	4	5	6
This intervention was reasonable for the problem behaviors described.	1	2	3	4	5	6
I liked the procedures used in this intervention.	1	2	3	4	5	6
This intervention was a good way to handle the students' behavior problems.	1	2	3	4	5	6
Overall, this intervention was beneficial to these students.	1	2	3	4	5	6

APPENDIX D

INTEGRITY CHECKLIST

Observer: _____   Condition: _____

Today's date: _____   IOA: Y   N

Step	Public Praise		
1	Teacher delivered ≥ 1 praise / 2 minutes of **PUBLIC PRAISE**. (10 praises per 20 minute obs)	Y N	
2	If *Public Praise Condition* **and** *No* to # 1, experimenter discusses the benefits of using praise with the teacher.	Y N	NA
3	If *Public Praise Condition* **and** *No* to #1, experimenter presents teacher with a public praise handout.	Y N	NA
	Private Praise		
4	Teacher delivered ≥ 1 praise / 2 minutes of **PRIVATE PRAISE**. (10 praises per 20 minute obs)	Y N	
5	If *Private Praise Condition* **and** *No* to #4, experimenter discusses the benefits of using praise with the teacher.	Y N	NA
6	If *Private Praise Condition* **and** *No* to #4, experimenter presents teacher with a Private Praise handout.	Y N	NA
	Other Items		
7	If *Public Praise Condition* **and** *Yes* to # 4 **OR** If *Private Praise Condition* **and** *Yes* to # 1, **THEN** Experimenter retrains teacher in specific type of praise needed for that condition.	Y N	NA
8	Experimenter delivered verbal precorrection to teacher on last day of phase.	Y N	NA
9	Experimenter prompted teacher to wear MotivAider prior to observation.	Y N	

Note.   ≥ indicates greater than or equal to.
Reverse score #4 if Public Praise condition.
Reverse score #1 if Private Praise condition.

Treatment Integrity (Steps 1 & 4):
(_____ / _____) x 100 = _____%
Steps Correct   Steps Possible

Procedural Integrity (Steps 2-3 & 5-9):

(_____ / _____) x 100 = _____%
Steps Correct   Steps Possible

APPENDIX E

INSTITUTIONAL APPROVAL FORM

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

Institutional Review Board

118 College Drive #5147
Hattiesburg, MS 39406-0001
Tel: 601.266.6820
Fax: 601.266.5509
www.usm.edu/irb

HUMAN SUBJECTS PROTECTION REVIEW COMMITTEE
NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Human Subjects Protection Review Committee in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months. Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: **10120803**
PROJECT TITLE: **Public versus Private Praise: A Direct Behavioral Comparison in Secondary Classrooms**
PROPOSED PROJECT DATES: **01/01/2010 to 08/31/2011**
PROJECT TYPE: **Dissertation**
PRINCIPAL INVESTIGATORS: **John Travis Blaze**
COLLEGE/DIVISION: **College of Education & Psychology**
DEPARTMENT: **Psychology**
FUNDING AGENCY: **N/A**
HSPRC COMMITTEE ACTION: **Expedited Review Approval**
PERIOD OF APPROVAL: **01/03/2011 to 01/02/2012**

Lawrence A. Hosman   1-5-2011
Lawrence A. Hosman, Ph.D.   Date
HSPRC Chair

APPENDIX F

OPERATIONAL DEFINIONS AND PROCEDURES FOR CLASSROOM OBSERVATIONS

1.   **Appropriately engaged behavior** is defined as student directing attention toward or engaged in the currently assigned activity (e.g., raising one's hand and waiting to be recognized before speaking, writing on/computing solutions on   assigned worksheets, sitting with hands and feet to oneself during instruction). **Appropriately engaged behavior** will be recorded only if the target student being observed is demonstrating appropriately engaged behavior.

2.   You will use hash marks to record the frequency of occurrence of **teacher public praise** and **teacher private praise** throughout the observation period, you will use a momentary time-sampling method to observe **appropriately engaged behavior** for each individual student being observed. Public verbal praise combined with physical praise (e.g., pat on the back or 'high-five') will be marked as public praise. Physical praise alone will be coded as private praise   unless it is clearly noticeable to multiple students in the classroom. The volume of **teacher public praise** should be similar to that of regular classroom instruction and be loud enough to be heard by majority of students in the classroom from any location within the classroom. **Private teacher praise** will be marked if any positive statement from the teacher that is contingent on students' AEB and at a volume quiet enough to be heard or noticed by the target student and possibly a peer sitting next to the target student. The volume of **private teacher praise** should be similar to a whisper and not be meant to be heard or noticed by students other than the target student.

3.   All students in the classroom will be separated into groups of three. At the beginning of the observation, you will observe the first student in each group, beginning at the front left of the classroom and moving back to the back right of the classroom. Each student will be momentarily observed at the beginning of each 10s interval and recorded as either engaging or not engaging in appropriate behavior. After you have observed the first student in the first group of three, move to the next first student in the second group of three, and then to the third group. Continue this process until you have reached the final group of three students in the classroom. Next, move to the first group of students and observed the second student in the group. Move throughout the classroom similar to previously described. After you reached the end of the classroom, move to the first group of students again and observe the third student in each group. Continue this process until 20 min have elapsed.

4.   You will momentarily observe each student (approximately 1-2s). You will use remainder of the 10 s to only record the occurrence of **appropriately engaged behavior**.

5.   The entire classroom will be observed for each occurrence of **teacher public praise** and **private teacher praise** during the entire 20-min observation.

6.   Begin observation at the front left position in the class and move systematically to the bottom right position; Observing one student per 10-s interval. Visually observe each child during each momentary time sample.

APPENDIX G

EFFECTIVE TEACHER PRAISE HANDOUT

Positive verbal praise and appropriate physical praise should be
delivered to the student after complying with a specific request,
performing appropriate behavior, or other appropriate behaviors
(e.g. raising hand to ask question, sitting quietly in seat, working
on classwork quietly).

For example, if you tell a student to work on a worksheet and the
student complies, then you should tell him/her "good job for
working on your assignment" or "thank you for starting your work
so fast."

Verbal praise should be:

(1) **Contingent** on student's appropriate classroom
behavior (i.e., not randomly or for no meaningful
reason).

(2) **Specific** to help the student understand why they are
being praised (e.g., "I like the way you raised your
hand")

(3) **Effort-based** (e.g., "you worked hard on your
assignment" instead of "you are so smart")

(4) **Immediate** if possible to help the student mentally link
their behavior to the praise. Delayed praise should be
minimized, if possible.

Physical praise is also acceptable (e.g., high-five, pat on the back).

Remember, you should deliver praise as warm and meaningful to
the student in order to maximize its effectiveness.

APPENDIX H

TEACHER PUBLIC PRAISE HANDOUT

Positive verbal praise and appropriate physical praise should be delivered to the student after complying with a specific request, performing appropriate behavior, or other appropriate behaviors (e.g. raising hand to ask question, sitting quietly in seat, working on classwork quietly).

However, this praise should **always** be delivered at a volume similar to that of regular classroom instruction and be loud enough to be heard by majority of students in the classroom from any location within the classroom.

For example, if you tell a student to work on a worksheet and the student complies, then you should tell him/her "good job for working on your assignment" or "thank you for starting your work so fast" in such a way that students in the vicinity of the target student hear the praise statement or see the physical praise.

If possible, physical praise (e.g., pat on the back or 'high-five') should be very apparent to other students in the class or combined with some verbal acknowledgement to be publicly noticeable.

REMEMBER; PLEASE <u>DO NOT</u> DELIVER PRAISE THAT IS QUIET OR PRIVATE.

APPENDIX I

TEACHER PRIVATE PRAISE HANDOUT

Positive verbal praise and appropriate physical praise should be delivered to the student after complying with a specific request, performing appropriate behavior, or other appropriate behaviors (e.g. raising hand to ask question, sitting quietly in seat, working on classwork quietly).

However, this praise should always be delivered at a volume similar to that of a whisper and only be loud enough to be heard by the target student (and possibly a student sitting in close proximity). The majority of students should not be able to hear you praise the student.

For example, if you tell a student to work on a worksheet and the student complies, then you should tell him/her "good job for working on your assignment" or "thank you for starting your work so fast" in such a way that only the student hears the praise statement or sees the physical praise.

Both physical praise (e.g., pat on the back or 'high-five') and verbal praise should be delivered discreetly, but still in a manner that is warm and meaningful.

REMEMBER; PLEASE <u>DO NOT</u> DELIVER PRAISE THAT IS LOUD OR PUBLIC.

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