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COMPARING EFFECTS OF PRAISE RATES ON CLASSROOM BEHAVIOR

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COMPARING EFFECTS OF PRAISE RATES ON CLASSROOM BEHAVIOR

by

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ABSTRACT

High-quality academic instruction, and, in turn, student success, are correlated with effective classroom management (Gage, Scott, Hirn, & MacSuga-Gage, 2018; Johnson, 1997; Stronge, Ward, & Grant, 2011; Wang, Haertel, & Walberg, 1993). Students are spending up to 50% of their instructional time engaged in non-instructional activities such as classroom procedures, transitions, and discipline (Codding & Smyth, 2008). However, academic activities should account for at least 70% of classroom time (Little & Akin-Little, 2008). Praise, a simple classroom behavior management procedure, includes statements commending behavior and is intended to increase the future probability of the behavior that warranted praise. Behavior-specific praise (BSP) has been shown to be an effective classroom management strategy in preschool through secondary classrooms. Teachers' use of BSP leads to less disruptive behavior in preschool classrooms (Dufrene et al., 2012, 2014; LaBrot et al., 2021) and upper elementary classrooms (Reinke, Lewis-Palmer, and Martin, 2007). To date, there has not been a study that examined the effect of the multiple rates of praise on classroom behavior in preschool children. This study used an alternating treatments design to test the effects of differential rates BSP on student behavior. In this study, BSP was provided on two different schedules (60 or 90 seconds) or not at all. Although the class-wide engagement was high and stable for both 60 and 90-second conditions, there was considerable overlap with the control condition. Social validity ratings were variable. Results and implications are discussed in light of limitations.

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CHAPTER I - INTRODUCTION

The Every Student Succeeds Act (2015) requires all students to receive a fair, equal, and significant opportunity to obtain a high-quality education. This act ensures that students are meeting academic standards by requiring use of state assessment systems. Federal legislation requiring specific instructional standards increases the need for high quality instruction. High quality instruction, and, in turn, student success, are correlated with effective classroom management (Gage, et al., 2018; Johnson, 1997; Stronge, et al., 2011; Wang, et al., 1993).

Students are spending up to 50% of their instructional time engaged in non-instructional activities such as classroom procedures, transitions, and discipline (Codding & Smyth, 2008). However, academic activities should account for at least 70% of classroom time (Little & Akin-Little, 2008). Time spent on academic activities in the classroom is a function of, among other variables, academic engagement and disruptive behavior. Academic engagement has been documented as a predictor of student learning (Matheson & Shiver, 2005). In addition, students engaging in disruptive behaviors limit the time spent learning for not only themselves, but other students in the classroom as well (Clunies-Ross et al., 2008).

Teachers without knowledge of effective classroom behavior management practices experience more stress and burnout (Aloe et al., 2014; Gilmour et al., 2022; McCormick & Barnett, 2011). The responsibility of ensuring academic achievement of all students while simultaneously managing transitions, discipline, and classroom procedures has led to an attrition upsurge among teachers. Approximately 30% of new teachers leave the profession within 6 years (Ingersoll et al., 2018). Teacher turnover has

a negative impact on students' achievement. Students enrolled in schools with high teacher attrition perform significantly worse in math and ELA than students enrolled in schools that experience lower teacher attrition (Ronfeldt et al., 2013). Given the relationship between lack of knowledge of classroom management strategies, teacher attrition, and diminished student outcomes, there is clearly a need for additional research testing simple and efficient classroom management strategies.

Effective classroom management strategies include active supervision/proximity control, precorrections, and effective instruction delivery, among others. Active supervision, or proximity control, involves scanning the classroom, interacting with students, and praising appropriate behavior (De Pry & Sugai, 2002). Precorrections are planned prompts to engage in prosocial behavior which are provided to students by the teacher before the problem behavior occurs (De Pry & Sugai, 2002). According to Forehand and McMahon (1987), an effectively delivered instruction is descriptive, direct, uses "do" instead of "don't" statements, and has at least a five-second latency from other instructions. Active supervision and precorrections both lead to decreased levels of student misbehavior in the classroom (De Pry & Sugai, 2002), during transitions (Colvin et al., 1997), and in non-classroom settings such as the playground and cafeteria (Lewis et al., 2000; Lewis et al., 1998).

Teacher delivered praise

Teachers' praise for students' appropriate classroom behaviors is another foundational classroom management strategy. When praise is delivered following appropriate behavior and the behavior increases in future probability, then praise is a positive reinforcer. Historically, praise has been categorized as general or specific.

General praise has been defined first as any statement that makes a positive evaluation (Farson, 1963), but does not specify the behavior being praised (Brophy, 1981). A general praise statement could include the phrase "good job," for example. Reviews of the praise literature have indicated that praise can be an effective practice used to change student behavior and suggest that praise is an evidence-based practice (Cherne, 2008; Hatton, 2016; Kennedy & Willcutt, 1964; Simonsen, et al., 2008).

Behavior specific praise

Brophy (1981) identified specificity as a topographical feature of praise that must be present for praise to function as a reinforcer. Behavior-specific praise (BSP) is defined as explicitly describing the student's behavior and approval of that behavior (e.g., "I like the way you answered all of the questions!;" Floress et al., 2018; Moffat, 2011). BSP can be an effective classroom management strategy in pre-K-12 classrooms for many student behaviors, including increasing on-task behavior (Sutherland et al., 2000) and decreasing disruptive behavior (Reinke et al., 2007). Research has also identified BSP as superior to general praise. For example, Polick et al. (2012) compared the effects of behavior specific praise and general praise on the teaching efficiency of intraverbal skills with 2 children with autism. They taught each child three intraverbal skills (i.e., verbal behavior in which the speaker responds to the verbal behavior of another), with two target sets per skill. Each target set was taught using either BSP or general praise as a consequence for correct responding. However, one skill for one child did not include praise and instead a neutral statement was provided after every response. The children acquired four of the five skills more quickly when BSP was provided than general praise.

BSP has been shown to be an effective classroom management strategy in preschool through secondary classrooms. Teachers' use of BSP may lead to less disruptive behavior in preschool classrooms (Dufrene et al., 2012, 2014; LaBrot et al., 2021). Fullerton et al. (2009) investigated the effects of behavior specific praise on the appropriate and problem behavior of four young children at risk for emotional and behavioral disorders. The children, four males between the ages of two and five, were each in four different early childhood classrooms at a university-based early childhood center. The teachers identified all four children's primary problem behavior to be noncompliance, although one child also engaged in aggression and another child displayed elevated emotional reactivity in addition to withdrawal and anxious behaviors. The researchers found that teachers' increased use of BSP resulted in increased compliance and time engaged in instruction across all four children. Markelz et al. (2021) investigated the effects of behavior specific praise on the on-task behavior of three preschool children. The children, three white males between two and five years old, were each in three different classrooms at a National Association for the Education of Young Children (NAEYC) accredited daycare center. Their teachers identified them as frequently engaging in off-task behavior. The authors found that teachers' increased use of BSP resulted in increases in child on-task behavior for all three children. Additionally, O'Handley et al.(2020) investigated the effects of behavior specific praise on the appropriately engaged and disruptive behavior of four secondary classrooms. All four of the classrooms were general education classrooms, with two classrooms in a middle school and two classrooms in a high school. The authors found that teachers' increased

use of behavior specific praise resulted in increased appropriately engaged behavior and decreased disruptive behavior.

BSP can also be an effective classroom management strategy in elementary classrooms. The use of BSP in elementary classrooms leads to more instructional time (Sutherland et al., 2000). Teachers who use BSP in their kindergarten through fifth grade classrooms experienced less off-task behavior in their classrooms than those who did not use BSP (Floress et al., 2018). Reinke et al. (2007) investigated the effects of increasing behavior specific praise for six elementary students' disruptive behavior. The six students were enrolled in three different third-grade general education classrooms. The researchers found that increased teacher delivered BSP resulted in decreased disruptive behaviors for students targeted for intervention in addition to nontargeted comparison students in elementary general education classrooms. However, the authors did not identify the specific rate of BSP delivered during the study. Similarly, Allday et al. (2012) investigated the effects of increased BSP on the on-task behavior of elementary and secondary students with or at-risk for an emotional or behavioral disorder. The seven students, ranging in age from five to 12 years old and in grades kindergarten through sixth, all either received special education services for an emotional or behavioral disorder or had been referred to the multidisciplinary evaluation team for challenging behavior. In baseline, the teachers' mean rates of BSP ranged from .07 to .37 per minute while students' mean percentage of on-task behavior ranged from 49% to 78%. After receiving coaching to increase their rates of BSP, the mean rate of BSP for all teachers ranged from .43 per minute to 1.21 per minute. The students' mean percentage of on-task behavior increased from 68% to 81%. The researchers found that increased teacher BSP

rates resulted in increased on-task behavior for all seven students. Similar to Reinke et al. (2007), the researchers did not control for BSP; as a result, we are unable to determine the exact rate of BSP needed for student behavioral improvement.

Consultation for supporting teachers' BSP delivery

Although praise is a relatively simple way to promote appropriate behavior in classrooms, teachers inconsistently deliver BSP (Jenkins et al., 2017). The school-based intervention literature supports the use of BSP for improving students' behavioral performance (Royer et al., 2019); additionally, there are a variety of strategies for facilitating teachers' use of BSP (Zoder-Martell et al., 2019). Without training, teachers' use of general praise may be low, and BSP may be even lower (Floress et al., 2018). Teachers can effectively be trained in the use of BSP and maintain this skill after training (Labrot et al., 2020). Floress et al. (2017) identified seven praise training methods. These methods are most often combined to create a multicomponent packaged intervention (Zoder-Martell et al., 2019). Zoder-Martell et al. (2019) found that the most commonly used training method was didactic instruction, followed by performance feedback and goal setting. The least common praise training methods that Zoder-Martell et al. (2019) found to be included in the multicomponent packaged interventions include prompts, in-vivo training, self-monitoring, and teacher incentives. However, although much is known about training methods for increasing teachers' BSP, less is known in regard to the rate at which teachers must deliver BSP to obtain adequate effects. Some studies have evaluated teachers' naturalistic praise delivery. Additionally, some consultation studies conducted in elementary schools shed light on what might be appropriate praise rates for producing good student outcomes.

White (1975) provided one of the first studies to document teachers' natural rates of approving (praise) and disapproving statements in classrooms. The author compared rates of praise for 104 teachers across grades one through twelve. White found that, generally, first and second grade teachers naturally emit more praise statements than reprimands. There is a sharp drop in praise statements after second grade, however. In every grade after second, teachers naturally emit more reprimands than praise statements. The rates of praise and reprimands also decline after second grade, with praise occurring more often in elementary than secondary classrooms. Praise rates range from .27 to 1.3 per minute in elementary classrooms, exceeding the range of praise rates in secondary classrooms of .14 to .34 per minute.

Floress et al. (2018) provided an update to the White (1975) study and observed the natural praise rates in 28 general education elementary classrooms. Similar to White's (1975) results, they found that elementary teachers naturally deliver BSP at a rate of 0.01 to 0.27 statements per minute, and general praise statements are delivered slightly more frequently with a rate of 0.08 to 1.14 statements per minute. Additionally, they found a significant, negative correlation between BSP and off-task behavior, indicating that higher rates of BSP correlate with lower rates of off-task behavior.

Floress et al. (2017) measured the natural praise rates of teachers of general education, at-risk, and special education preschool classrooms. They observed two general education teachers in a parochial preschool, two teachers of at-risk classrooms at a public preschool, and two teachers of special education classrooms at a public preschool. Children in the at-risk classrooms either performed poorly on an academic screener or had environmental risk factors. Children in the special education classrooms

were identified as having a disability per the IDEA. The children at all three schools were predominately Caucasian (94%, 83.3%, and 90%, respectively). All 6 preschool teachers were Caucasian females. Floress et al. (2017) found that, overall, preschool teachers delivered BSP at a rate of 5.4 to 30 per hour, with a mean of 14.4 BSP statements per hour. Specifically, teachers of general education classrooms deliver BSP at an average rate of 8.1 per hour, teachers of at-risk preschool classrooms deliver BSP at an average rate of 12.4 per hour, and teachers of special education preschool classrooms deliver BSP at an average rate of 23.1 per hour. These findings are difficult to generalize to public, diverse preschool classrooms. The sample included only two teachers from each type of classroom. Both teachers of general education classrooms were from a parochial school. The children at all three schools were predominately Caucasian, as were the teachers. Additionally, the researchers did not measure the children's behavior, as this was not the purpose of the study.

Some evidence suggests teachers emit praise naturally at these rates; however, when they are trained to emit BSP to a criterion, teachers have been shown to increase rates. LaBrot et al. (2020) tested gradually intensifying consultation supports to increase two Head Start and two elementary teachers' BSP. Although some teachers required more intensive consultation to increase and sustain BSP delivery, in general, as teachers received more intense consultation, their BSP increased. Consultants trained teachers to emit BSP at a rate of 0.5 BSP statements per minute. The authors found that, as consultation supports increased, teachers' BSP increased and ranged from approximately 0.5 BSP statements per minute to nearly 1.5 BSP statements per minute. Moreover, as teachers' BSP increased, students' behavior improved as evidenced by decreases in

disruptive behaviors and increases in appropriate behaviors. Unfortunately, the authors did not tightly control teachers' BSP rate, which was not the purpose of the study, and as a result, the precise rate of BSP needed to support students' display of appropriate behavior is unknown.

Eaves et al. (2021) evaluated the effects of two group contingencies on two kindergarten and two first grade general education teachers' use of BSP. The authors compared the effects of an independent versus an interdependent group contingency when the criteria for reinforcement for both contingencies was 0.5 BSP statements per minute. The teachers' mean rates of BSP in baseline ranged from 0.4 to 5.2 BSP statements per 20-minute observation. Results showed little difference between independent and interdependent contingencies, with BSP ranging from 13 to 29.3 BSP statements per 20-minute observation among the two contingencies.

LaBrot et al. (2020) evaluated the efficacy of in situ training for increasing and maintaining preschool teachers' use of BSP, in addition to generalizing their use of BSP to settings in which the in-situ training did not occur. Each of the 4 preschool teachers taught at different Head Start centers managed by one Head Start agency. The children at the centers managed by this agency are 99% ethnic or racial minorities. The authors found that the use of in situ training was effective in increasing all four teachers' BSP rates. Following the training, all four teachers maintained rates of BSP above a predetermined criteria of 0.5 per minute for up to two months. Additionally, all four teachers generalized the use of BSP to untrained settings. The teachers rated the use of BSP as a moderately to highly socially valid classroom behavior management technique.

Relative effects of multiple praise rates

Although we have empirical evidence for rates of praise that teachers naturally emit, only a few studies have manipulated rates of BSP to determine which is the most effective. Bloodsaw (2012) examined the disruptive behavior of two general education first-graders and a special education seventh grader after receiving BSP statements at a rate of once every one, three, or five minutes. The two first-graders, one male and one female, were six years old. The seventh grader, a male, was 12 years old. All three students were African American. They were reported by their respective teacher to engage in high frequency disruptive or inappropriate behavior. On-task behavior increased for all students during the 1-minute and 3-minute intervals. Additionally, teachers reported that they preferred the 3-minute praise rate. It is important to note that Bloodsaw (2012) tested the effects of multiple praise rates on the behavior of individual students referred for high rates of disruptive behaviors but did not evaluate the effects of multiple praise rates on class-wide behavior.

Kranak et al. (2017) observed the on-task behavior of five male students after receiving teacher-delivered BSP at a rate of one, four, or eight per minute. The students were in grades second through fourth, ranged in age from seven to ten years old, and were all diagnosed with autism spectrum disorder. Three of the students were identified as Caucasian, one was African American, and one was identified as unspecified race. These five students were all in the same special education self-contained classroom and there were no other students in the classroom. The researchers employed an alternating treatments design with baseline and no independent verification phase. All observations were conducted during reading board activities, including reading direct instruction and

fluency practice activities. The authors found that four or more BSP statements per minute were required to increase the appropriately engaged behavior of elementary students with autism. The teacher reported that the four-per-minute ratio was the most feasible. This study had several limitations. First, the design did not include an independent verification phase; therefore, it is unknown whether multiple treatment interference could be undermining the internal validity of the study. Additionally, this study does not meet What Works Clearinghouse design standards as only two to three data points were collected during baseline and the baseline data were trending upwards for all participants when the researchers began the praise rate manipulation phase. One participant, Baer, had high rates of on-task behavior during baseline (91% of intervals on task). This could cause a ceiling effect for the praise rate manipulation phase for this participant. Additionally, data were highly variable during the praise rate manipulation phase across participants with percentage of intervals of on-task ranging from 35% to 100%.

More recently, O'Handley et al. (2023) examined the differential effects of BSP provided every two minutes or four minutes on class-wide appropriately engaged and disruptive behavior in four secondary general education classrooms. Class-wide appropriately engaged behavior occurred for 70% or less of observation intervals and teacher praise rates did not exceed one praise statement per four minutes. The authors utilized a multiple baseline design across pairs of classrooms comparing conditions. Class-wide appropriately engaged behavior increased and disruptive behavior decreased across classrooms during the two-minute condition. During the four-minute condition, appropriately engaged behavior did not increase or the increase was small and short-

lasting across classrooms. Class-wide disruptive behavior did decrease during the four-minute condition; however, the change was not as large or as consistent as during the two-minute condition. These findings have not been extended to the class-wide behavior of preschool children.

Purpose of study

Praise includes statements commending behavior and is intended to increase future probability of the behavior that warranted praise. Praise may be general (e.g., "good job!"), or specific (e.g., "great job completing your assignment!"). Research (Brophy, 1981; Floress et al., 2018; Polick et al., 2012) indicates that BSP is more effective for changing behavior than general praise. Few studies have tested relative effects of different praise rates for improving students' behavior. In the few studies that have tested relative effects of multiple praise rates in elementary classrooms, BSP rates have included one to eight BSP statements per minute and results have indicated that three to four BSP statements per minute may be sufficient for improving students' behavioral performance (Bloodsaw, 2012; Kranak et al., 2017). Unfortunately, few studies have been published, there is a need to replicate findings, and there is a need to evaluate different rates of BSP.

Teachers' rates of BSP decrease as grade level increases, and teachers in elementary classrooms naturally deliver BSP at rates that range from 0.01 to 1.3 per minute (Floress et al., 2018; White, 1975). This indicates that it may be feasible for teachers in elementary classrooms to deliver BSP at a rate of every 90 seconds, or less often. Preschool teachers with an average baseline rate of 0 to 0.37 BSP statements per minute can independently deliver BSP at a rate of .4 to 1.9 per minute up to 2 months

after ceasing in-situ coaching, with an average of .82 per minute (LaBrot et al., 2021). While we do not know the natural rate that public preschool teachers deliver BSP, these findings suggest that preschool teachers can feasibly deliver BSP at a higher rate than elementary teachers, or a rate of every 90 seconds or more often.

The purpose of this study is to address the following questions:

1. What are the differential effects of behavior-specific praise delivered at a rate of once per minute and once per 90 seconds relative to a no praise control condition on the appropriately engaged behavior of preschool students?

2. What are the differential effects of behavior-specific praise once per minute and once per 90 seconds relative to a no praise control condition on the disruptive behavior of preschool students?

3. To what extent is the most effective rate of behavior-specific praise rated as socially valid by preschool teachers?

CHAPTER II - METHODS

Participants and setting

Participants were three preschool teachers and the children in their classes located in the southeastern United States. Each classroom included a teacher and approximately 5 to 17 two- to five-year-old children. Two of the three classrooms included a teaching assistant at least part-time. The primary researcher requested volunteers from an on-campus preschool accredited by the National Association for the Education of Young Children (NAEYC). Seventy-three children currently attend the preschool. The children, ranged in age from zero to 71 months, were 49% male and 51% female. After approval by the Institutional Review Board, the first three volunteers that provided consent and met inclusion criteria were included in the study. In order for a classroom to be included in this study, the children must have been observed to engage in disruptive behavior (DB) during 20% or more of the intervals during a 20-minute screening observation. Consent from the teachers was obtained prior to beginning data collection (see Appendix A for teacher consent form). Parents did not provide consent for their child's participation because this study did not include data for individual children, only aggregate data for the classroom's behavior. However, the researcher sent home a letter to parents indicating that this study would be occurring in their child's classroom, and their child's inclusion in the aggregated data can be prevented by contacting their child's teacher (see Appendix G for letter to parents).

All three classrooms spent most of the school day in the same room. The data collection occurred during whole group activities or centers which included instruction for pre-academic skills and interaction with educational toys. Finally, teachers completed

a demographic form (See Appendix B) that included items related to number of years taught and experience with classroom behavior management methods.

Teacher A was a Caucasian female with 8 years of teaching experience. She held a master's degree in Child and Family Studies with a specialization in Child Development and was in the process of earning a master's degree in Early Childhood Special Education. She received training in classroom behavior management and reported using the following classroom behavior management techniques in her classroom: BSP, general praise, proximity control, precorrections, effective instruction delivery, and "bucket fillers." Her class included four- and five-year-old children. The number of children present in her classroom during observations ranged from 12-17 children.

Teacher B was an African American female with six years of teaching experience. She held a master's degree. She has had training in classroom behavior management and currently reported using the following behavior management techniques in her classroom: BSP, proximity control, and precorrections. Her class included three-year-old children. The number of children present in her classroom during observations ranged from 5-11 children.

Teacher C was an African American female with three years of teaching experience. She held a bachelor's degree and was in the process of earning a master's degree in School Counseling. She had received training in classroom behavior management and currently reported using the following behavior management techniques in her classroom: BSP and general praise. Her class included older two-year-old and younger three-year-old children. The number of children present in her classroom during observations ranged from 3-10 children.

Materials

Personal interval timing device

Personal interval timing devices are small devices that can fit in the teachers' pockets or clip to their clothing and provide a tactile prompt on a fixed interval schedule set by the user. A personal interval timing device was used to prompt the teacher to deliver a BSP statement.

Bug-In-Ear device

The bug-in-ear device is a one-way radio with a microphone on one device and earphones on the other. A bug-in-ear device was used to prompt the teacher to deliver a BSP statement when treatment integrity fell below 100%.

Demographic form

The demographic form consisted of items relating to teachers' experiences, including the number of years taught and experience with behavior management.

Training script

The script (see Appendix C) defined BSP and provided examples and non-examples. The researcher used the script to guide the teacher training session, provide an operational definition of BSP, and describe the rationale for using BSP.

Training videos

Two videos included modeling appropriate and inappropriate BSP in a preschool or early elementary classroom setting. QR codes linking to the videos were included on the Training Script. The video of an example and non-example of BSP during a class-wide desk activity, published by The Iris Center, can be found at the following link: https://www.youtube.com/watch?v=ijV6FkDWLAs. The video of an example of BSP

being delivered during an activity on the carpet, published by Classroom Check-Up, can be found at the following link: https://www.youtube.com/watch?v=7zrQBMjnEuU.

Instruments

Behavioral observation form

An observation form (see Appendix D) was used to record total number of students present, number of students exhibiting AEB, frequency of BSP statements, and occurrence of DB during each 20-minute observation. The form was divided into 20 60-second intervals, where frequency of BSP and DB were to be recorded within intervals along with percentage of students appropriately engaged in a task or activity for AEB. This form was used in every classroom during each phase and condition of the study.

Procedural integrity checklist

The procedural integrity checklist (see Appendix E) included different forms for the control condition and the 60 second and 90 second praise rate conditions. The 60 second and 90 second praise rate conditions form of the procedural integrity checklist included items indicating that the personal interval timing device was set to the correct interval and functioning properly, the data collector provided the teacher with the personal interval timing device, the data collector asked the teacher how many students are present in the classroom, and the teacher wore the personal interval timing device. Additionally, the 60-second and 90-second praise rate conditions forms included items indicating that the bug-in-ear device is sanitized, functioning properly, and sufficiently loud. The control condition form of the procedural integrity checklist included items indicating that the data collector instructed the teacher to withhold all praise and the data collector asked the teacher how many students are present in the classroom.

The Behavior Intervention Rating Scale (BIRS)

At the conclusion of the verification phase, teachers completed the Behavior Intervention Rating Scale (BIRS; see Appendix F) as a measure of the social validity of the most effective rate of BSP. This rating scale consists of 24-items, with each item rated from 1 (strongly disagree) to 6 (strongly agree). The BIRS measures individuals' perceptions of treatment acceptability, effectiveness, and time to intervention effectiveness (Elliot & Treuting, 1991). Alpha coefficients for each subscale are .97, .82, and .87, respectively. The alpha coefficient for the entire scale is .97. All subscales and the scale as a whole demonstrate high internal consistency. One item was added to the BIRS; that is, an item which asked teachers which praise rate they preferred and why.

Dependent variables and data collection procedures

The primary dependent variable was children's AEB. AEB is defined as anytime a child's eyes are oriented towards the teacher or the task, or anytime a child is actively engaged in completing a task, which has been assigned by the teacher. Examples of appropriately engaged behavior include a child looking at the teacher during a whole-group activity, a child talking to peers at their center during centers, a child actively manipulating centers materials appropriately (e.g., toys or objects contained within the child's current center), or a child engaged in motor activity or a verbal response that includes compliance for a teacher instruction (e.g., walking to the teachers' desk when told to do so). Nonexamples of appropriately engaged behavior include talking without permission while the teacher is reading a book to the whole group, talking to peers without permission while following the teacher's instruction, leaving an assigned center without permission, or throwing a crayon.

The secondary dependent variable was DB, which was defined as any time a child engages in aggression, property disruption, inappropriate vocalizations, or out-of-area behavior. Property disruption was defined as throwing items that are not designed to be thrown with enough force that the object lands at least 3 feet from the student's body, breaking any object, or knocking over any piece of otherwise stable furniture or toys. Examples of property disruption include a child throwing a train toy, using both hands to break a crayon, or pushing over a tower of blocks built by another child. Nonexamples of property disruption include a child falling into a block tower built by another child, causing it to fall, throwing a ball during an activity allowing ball throwing, or breaking a crayon by using too much force while coloring. Inappropriate vocalizations were defined as a student using a voice that is above the volume of a conversational level or above that of the rest of the students in the classroom without permission or saying an inappropriate word for the developmental level of the child. Examples of inappropriate vocalizations include yelling across the room to another child, talking while a teacher is actively reading a book to the whole group, or squealing at a volume above that of the rest of the children. Nonexamples of inappropriate vocalizations include calling out an answer loudly during a task requiring choral responding, talking to peers at their same center with their voice at a conversational volume, or answering a question when called on. Out-of-area was defined as any instance in which the child's entire body is not in the appropriate area during a center or whole-group carpet time or a students' buttocks breaking contact with the seat of their chair for 3 or more consecutive seconds without permission from the teacher. Examples of out-of-seat include walking beyond the perimeter of the carpet during circle time, a student leaving their assigned center, or a

student leaving their chair for three or more seconds. Nonexamples of out-of-area include walking away from the carpet to go to the bathroom with permission, leaving a center appropriately while rotating centers, moving between centers with permission, or leaving their chair with permission. During data collection, aggression, property disruption, inappropriate vocalizations, and out-of-area behavior were all coded as DB.

Data collectors included graduate students in a doctoral school psychology program or undergraduate students trained in data collection. Prior to data collection, faculty and advanced doctoral students used a behavioral skills training approach to train data collectors to conduct systematic direct observations using a variety of different observation procedures including planned activity check procedures, frequency counts, and duration measures to a 90% agreement criterion with an advanced doctoral student that had already demonstrated proficiency. Additionally, the researcher met with all data collectors prior to the beginning of this study and provided them with written operational definitions of dependent variables and instructions for the specific coding procedures used in this study (e.g., frequency within interval, planned activity check).

Observations included 20-minute observation sessions with the PAC method for AEB and frequency within intervals for BSP and DB. The 20-minutes were separated into 20 60-second data collection intervals. The PAC procedure has been found to provide an estimate consistent with true rate criterion (Radley et al., 2021). PAC includes counting and recording the number of students engaged in the target behavior at the end of the interval. A percentage of AEB was derived by dividing the total number of engaged students by total number of students in the classroom and multiplying by 100. To gain a total percentage of class wide engagement, an average of the percentages will

be taken across all completed checks. To record DB, each time a child engaged in DB, the observer put a tally mark in the box representing the current interval. If the DB continued into the next interval, the observer put a tally mark in the box representing that interval as well. If more than one child engaged in DB during one interval, a tally mark was recorded for each child in the box representing the interval. The frequency of interval occurrence of DB was calculated by counting the total number of occurrences of DB during the 20-minute observation. To record BSP, each time the teacher made a BSP statement, the observer put a tally mark in the box representing the current interval. The total frequency of BSP was determined by counting the tally marks and then dividing by the number of minutes (i.e., 20-minutes), which yields BSP per minute.

In an attempt to reduce reactivity and observer effects, the data collectors remained in an observation room with a one-way mirror and an audio feed. Each classroom had an observation room connected to the classroom.

Design and data analysis

This study included an alternating treatments design (ATD) with no baseline, an ATD phase, and an independent verification phase. By using an ATD, the researchers were able to quickly compare the effects of the conditions to determine if there was divergence in the data paths for AEB and DB. The ATD phase consisted of three conditions: No BSP (control condition), BSP provided every 60 seconds, and BSP provided every 90 seconds. A final "best treatment" verification phase was implemented to control for the possibility of multiple treatment interference (Barlow & Hayes, 1979). This verification phase allowed for the opportunity to demonstrate that the "best" treatment during the alternating treatments phase continues to be effective when it is no

longer alternated with the other two praise rate conditions (Cooper, Heron, & Heward, 2007). In order to control for possible sequencing effects, the conditions were semi-randomized to serve as a counterbalancing measure (Barlow & Hayes, 1979). No condition was used more than twice consecutively. To minimize carryover effects, only one condition was presented per day. The exception to this is the verification phase, during which only one condition was being measured.

In order to meet ATD design standards, each condition included at least five data points (Kratochwill et al., 2020). Classroom B's independent verification phase is an exception, however. Only four data points were collected for this phase as the teacher was unavailable due to an extended absence following collection of the fourth datum during the independent verification phase. The researcher visually analyzed AEB and DB data for level, variability, consistency, and nonoverlap of the data. Moreover, as this study includes an ATD, the researcher visually analyzed the alternating treatments phase for divergence across conditions in order to compare effectiveness between rates of BSP.

Procedures

ATD phase

Condition counterbalancing. Prior to beginning each session, the primary researcher selected the order for the conditions to occur. Each of the three conditions occurred for five separate observations. Each condition occurred for a maximum of two consecutive observations and only once per day.

Training. Teachers were trained on the use of BSP in the classroom using Behavioral Skills Training. The training occurred separately with each teacher. The researcher first explained the purpose of the study and benefits of using BSP. Information

presented during training included examples and non-examples of BSP using the training script and video models. The researcher also explained intervention procedures. The purpose and use of the personal interval timing device was explained to teachers during the training. The researcher explained to participants that the rate that they should provide BSP, as cued by the personal interval timing device, will change for each condition. The researcher also explained that, during the observation period, the participant should only provide BSP when prompted. Accurate use of the personal interval timing device to provide BSP statements was modeled by the researcher. The teacher then practiced providing BSP when prompted by the personal interval timing device, with the primary researcher playing the role of a student and engaging in AEB. The researcher provided immediate feedback to the teacher during training sessions. Teachers were required to demonstrate three consecutive examples of BSP with 100% accuracy and only when prompted by the personal interval timing device.

No BSP (control). Before each 20-minute observation began, the researcher informed the teacher that the session's praise rate is zero, and she should not provide any BSP for the 20-minute duration. The data collectors recorded AEB and DB using the behavioral observation form. Additionally, if the teacher provided any unprompted BSP, data collectors recorded frequency within intervals. At the end of the observation period, the researcher informed the teacher of the end of the observation.

One BSP statement every 60 seconds. Before the 20-minute observation began, the data collectors set the personal interval timing device to vibrate every 60 seconds and provided it to the teacher. The data collectors informed the teacher that the session's praise rate is one BSP statement every 60 seconds. The data collectors recorded AEB,

DB, and BSP using the Behavioral Observation Form. At the end of the observation period, the teacher returned the personal interval timing device to the data collectors and continued teaching.

One BSP statement every 90 seconds. Before the 20-minute observation began, the data collectors set the personal interval timing device to vibrate every 90 seconds and provided it to the teacher. The data collectors informed the teacher that the session's praise rate is one BSP statement every 90 seconds. The data collectors recorded AEB, DB, and BSP using the Behavioral Observation Form. At the end of the observation period, the teacher returned the personal interval timing device to the data collectors and continued teaching.

Verification phase

The independent verification phase included the praise rate that resulted in the greatest level of AEB during the alternating treatments phase. The procedures for this phase were the same as the alternating treatments phase, but only the rate that resulted in the highest level of AEB was used. If one praise rate was not determined to be better than others, based on visual analysis, the researcher asked the teachers which praise rate they would like to implement during the independent verification phase.

Interobserver agreement

In order to meet design standards, interobserver agreement (IOA) data were collected for at least 20% of sessions in each phase for each condition, across all phases (Kratochwill et al., 2020). Exact agreement IOA was collected for observation data. Exact agreement IOA was calculated by dividing the number of intervals with exactly agreed upon codes for AEB, DB, and BSP (separately) by the total number of intervals

and multiplying by 100. The minimum acceptable IOA was 90%. If IOA for a datum fell below this criterion, the data collector was retrained in the dependent variables and data collection procedures.

Classroom A had a total of 25% of sessions with IOA, including 40% of observations of the 90-second condition, 20% of observations of the control and 60-second conditions each, and 20% of the observations during the verification phase. The IOA for AEB in classroom A was 92% (range, 60% - 100%), including 80% for the 90-second condition, 100% for the 60-second condition, 100% for the control condition, and 100% for the verification phase. IOA for DB in classroom A was 85% (range, 25% to 100%), including 62.5% for the 90-second condition, 100% for the 60-second condition, 100% for the control condition, and 100% for the verification phase. One datum fell below the criterion of 90% for both AEB and DB. The data collector was retrained, and no subsequent datum fell below the minimum criterion.

Classroom B had a total of 30% of sessions with IOA, including 60% of observations of the 90-second condition, 20% of observations of the control and 60-second conditions each, and 20% of observations during the verification phase. IOA for AEB in classroom B was 99% (range, 95% - 100%), including 98.33% for the 90-second condition, 100% for the 60-second condition, 100% for the control condition, and 100% for the verification phase. IOA for DB in classroom B was 98% (range, 95% - 100%), including 96.67% for the 90-second condition, 100% for the 60-second condition, 100% for the control condition, and 100% for the verification phase.

Classroom C had a total of 20% of sessions with IOA, including 20% of observations of each condition, and 20% of observations during the verification phase.

IOA for AEB in classroom C was 98% (range, 95% - 100%), including 100% for the 90-second condition, 100% for the control condition, 95% for the 60-second condition, and 95% for the verification phase. IOA for DB in classroom C was 100%, including 100% for each condition and phase.

Procedural and treatment integrity

Procedural and treatment integrity data were collected for at least 20% of sessions across all phases and conditions. Data collectors completed the Procedural Integrity Checklist during each observation session. Data collected using the checklist will be converted to percentage by dividing steps completed by total steps and multiplying by 100. Treatment integrity data were collected using the Behavioral Observation Form. Each BSP statement was recorded within the interval during which it occurred. The number of praise statements were converted to a rate of BSP statements per minute by dividing the total number of BSP statements by the number of total minutes in the observation, which yielded a score for BSP per minute.

If a teacher delivered BSP in a manner inconsistent with the prescription for that condition, then the researcher provided the teacher with performance feedback after the session. If, during the ATD phase or the independent verification phase, a teacher delivered BSP in a manner inconsistent with any of the conditions for 3 sessions, then the researcher eliminated use of the personal interval timing device and began using a bug-in-ear device to prompt BSP at an appropriate time. All three teachers required switching to a bug-in-ear device by the 10^{th} observation session. However, all three teachers also requested switching back to the personal interval timing device by the 15^{th} observation session. Additionally, IOA was collected for at least 20% of the procedural and treatment

integrity evaluations. IOA for both procedural and treatment integrity was calculated using exact agreement IOA. IOA for procedural integrity was calculated by dividing the number of agreed upon steps by total steps and multiplying by 100. IOA for treatment integrity was calculated by dividing the number of agreed upon intervals by total intervals and multiplying by 100.

Treatment integrity for Teacher A was 91% (range of 50% - 100%). Treatment integrity for Teacher B was 95% (range of 60% - 100%). Treatment integrity for Teacher C was 82% (range of 40% - 100%). IOA for treatment integrity across teachers was 100%. Procedural integrity for all classrooms was 100%, with IOA of 100%.

CHAPTER III - RESULTS

Appropriately engaged behavior

Classroom A

Percentages of AEB for Classroom A are presented in Figure 1. Classroom A's mean percentage of AEB was 93.16% (range, 85.9-98.25) during control condition sessions. For the 60 second condition, children's mean percentage of AEB was 94.36 (range, 91.5-98%). For the 90 second condition, children's mean AEB was 95.65% (range, 93.1-99.25%). During the independent verification phase, Teacher A implemented the 60 second condition and the children's mean AEB was 95.48% (range, 94.05-98.95%).

During the alternating treatments phase, across all conditions, children's AEB ranged from 85.9% to 99.25%, with little divergence across conditions. Data paths for all conditions were high and stable during the alternating treatments phase. Additionally, when the independent verification phase was implemented, there was not a change in level for children's AEB as the 60 second condition was implemented in isolation. Moreover, the data path during the independent verification phase was high and stable.

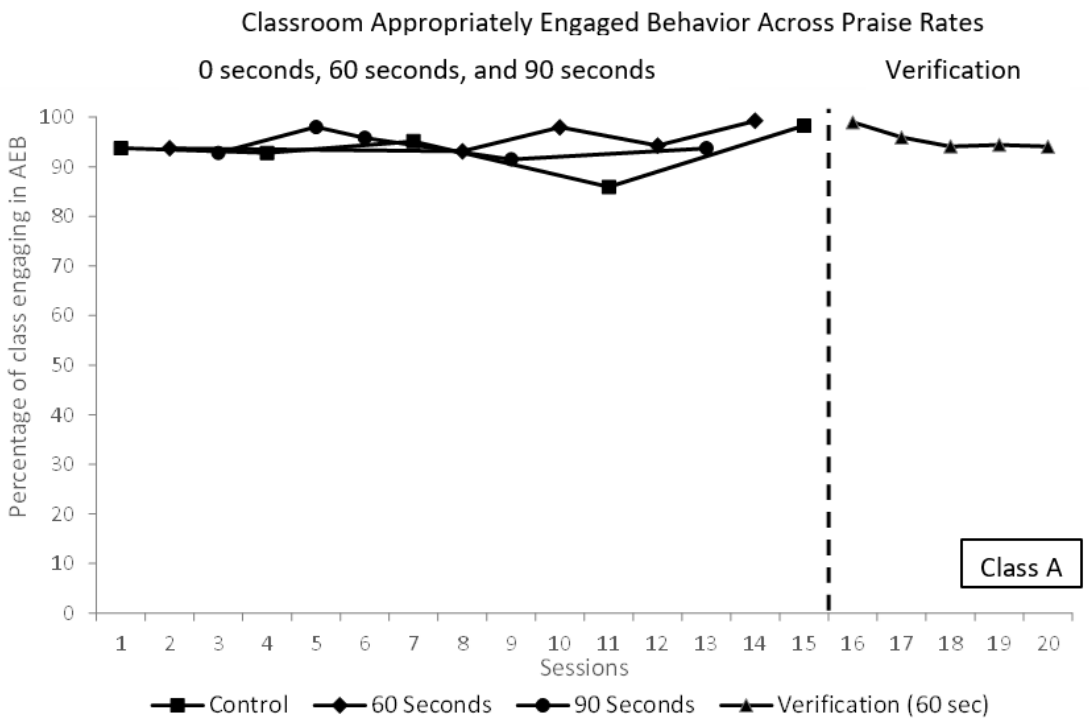

Figure 1. Appropriately Engaged Behavior in Classroom A.

Classroom B

Percentages of AEB for Classroom B are presented in Figure 2. Teacher B had an extended absence after session 19. Although data collection would have typically continued for the independent verification phase, it ended prematurely due to unavailability of the teacher. Classroom B's mean percentage of AEB was 88.24% (range, 80.2-94.4%) during control condition sessions. For the 60 second condition, children's mean percentage of AEB was 93.36 (range, 82.4-98.5%). For the 90 second condition, children's mean AEB was 92.71% (range, 87-99.1%). During the independent verification phase, Teacher B implemented the 90 second condition and the children's mean AEB was 93.1% (range, 90.1-95.75%).

During the alternating treatments phase, across all conditions, children's AEB ranged from 80.2% to 99.1%, with little divergence across conditions. Data paths for all conditions were high and stable during the alternating treatments phase. Additionally, when the independent verification phase was implemented, there was not a change in level for children's AEB as the 90 second condition was implemented in isolation. Moreover, the data path during the independent verification phase was high and stable.

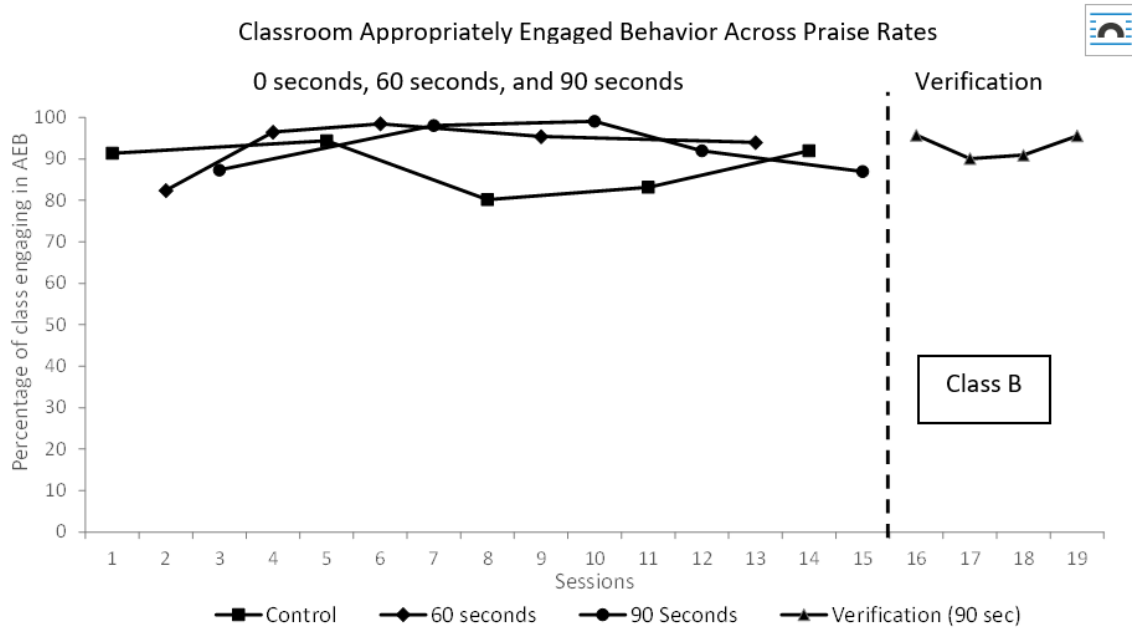

Figure 2. Appropriately Engaged Behavior in Classroom B.

Classroom C

Percentages of AEB for Classroom C are presented in Figure 3. Classroom C's mean percentage of AEB was 90.93% (range, 83.05-100%) during control condition sessions. For the 60 second condition, children's mean percentage of AEB was 96.52% (range, 87.5-100%). For the 90 second condition, children's mean AEB was 96.7% (range, 91.6-100%). During the independent verification phase, Teacher C implemented the 60 second condition and the children's mean AEB was 93.73% (range, 91-97.2%).

During the alternating treatments phase, across all conditions, children's AEB ranged from 83.05% to 100%, with little divergence across conditions. Data paths for all conditions were high and stable during the alternating treatments phase. Additionally, when the independent verification phase was implemented, there was not a change in level for children's AEB as the 60 second condition was implemented in isolation. Moreover, the data path during the independent verification phase was high and stable.

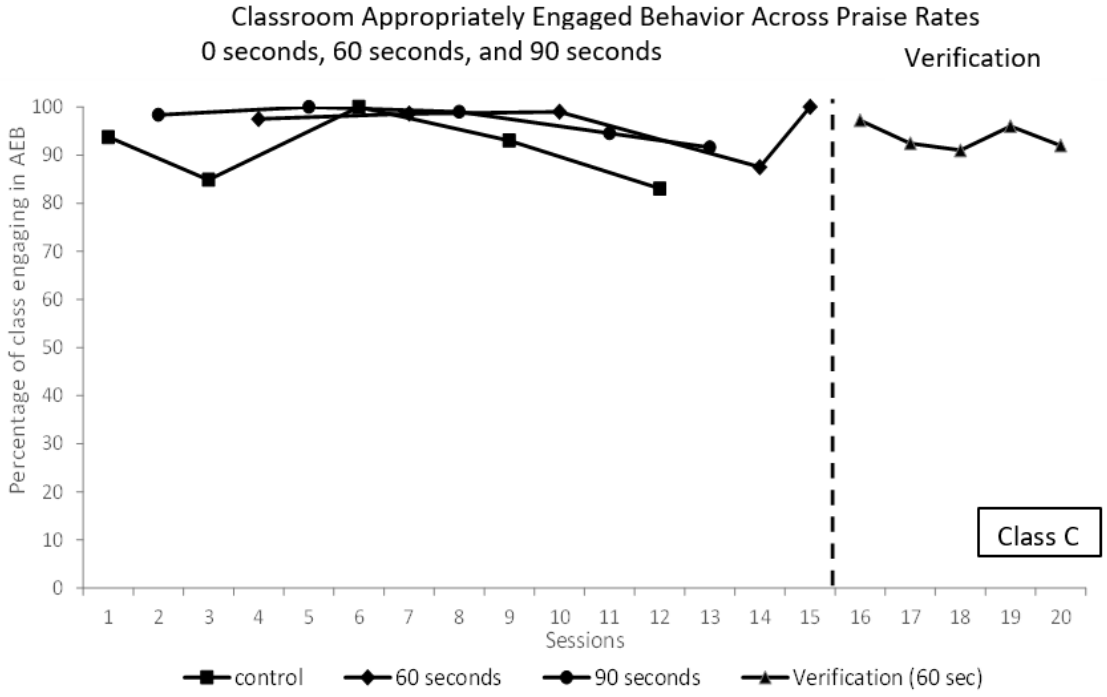

Figure 3. Appropriately Engaged Behavior in Classroom C.

Disruptive behavior

Classroom A

Frequencies of interval occurrence of DB for Classroom A are presented in Figure 4. Classroom A's mean frequency of interval occurrence of DB was 2.4 (range, 0-7) during control condition sessions. For the 60 second condition, children's mean

frequency of interval occurrence of DB was 0.4 (range, 0-2). For the 90 second condition, children's mean frequency of interval occurrence of DB was 3.8 (range, 0-8). During the independent verification phase, Teacher A implemented the 60 second condition and the children's mean frequency of interval occurrence of DB was 0.4 (range, 0-2).

During the alternating treatments phase, across all conditions, children's DB ranged from 0-8 occurrences per observation session, with little divergence across the control and 90 second conditions. The data paths for these conditions were variable during the alternating treatments phase. The 60 second condition was low and stable, diverging from the control and 90 second conditions. Additionally, when the independent verification phase was implemented, there was not a change in level for children's DB as the 60 second condition was implemented in isolation. Moreover, the data path during the independent verification phase was low and stable.

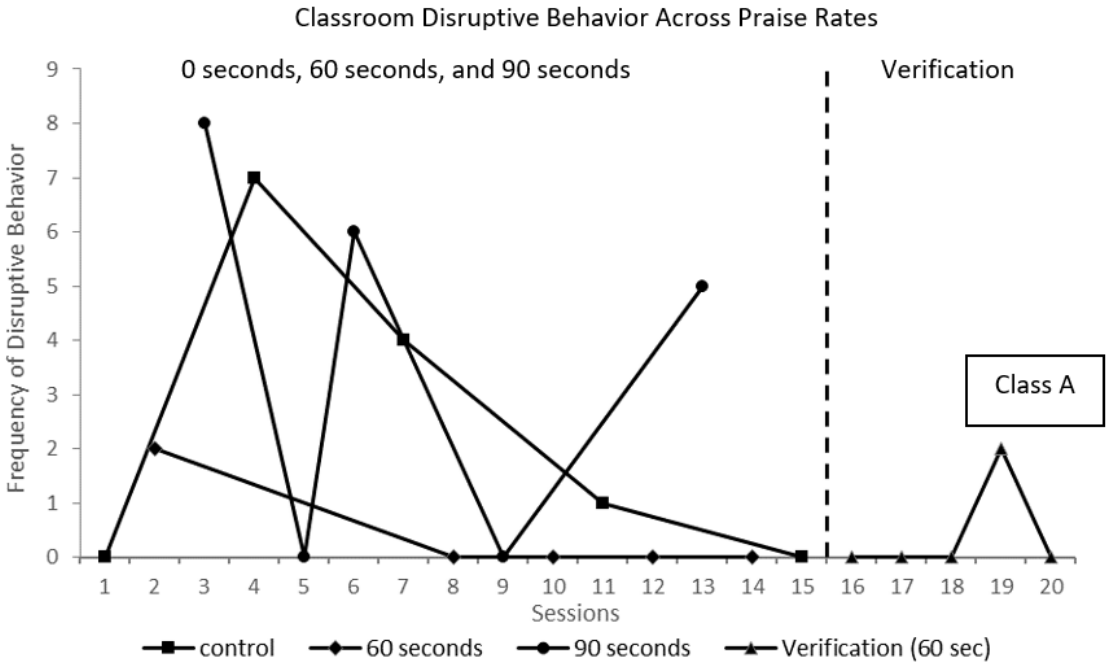

Figure 4. Disruptive Behavior in Classroom A.

Classroom B

Frequency of interval occurrences of DB for Classroom B are presented in Figure 5. Classroom B's mean frequency of interval occurrence of DB was 8.4 (range, 2-14) during control condition sessions. For the 60 second condition, children's mean frequency of interval occurrence of DB was 7.2 (range, 1-14). For the 90 second condition, children's mean frequency of interval occurrence of DB was 3.6 (range, 1-7). During the independent verification phase, Teacher B implemented the 90 second condition and the children's mean frequency of interval occurrence of DB was 2.5 (range, 0-7).

During the alternating treatments phase, across all conditions, children's DB ranged from 0-14 occurrences per observation session, with little divergence across the control and 60 second conditions. The data paths for these conditions were variable during the alternating treatments phase. The 90 second condition was low and stable, diverging from the control and 60 second conditions. Additionally, when the independent verification phase was implemented, there was not a change in level for children's DB as the 90 second condition was implemented in isolation. Moreover, the data path during the independent verification phase was low and stable.

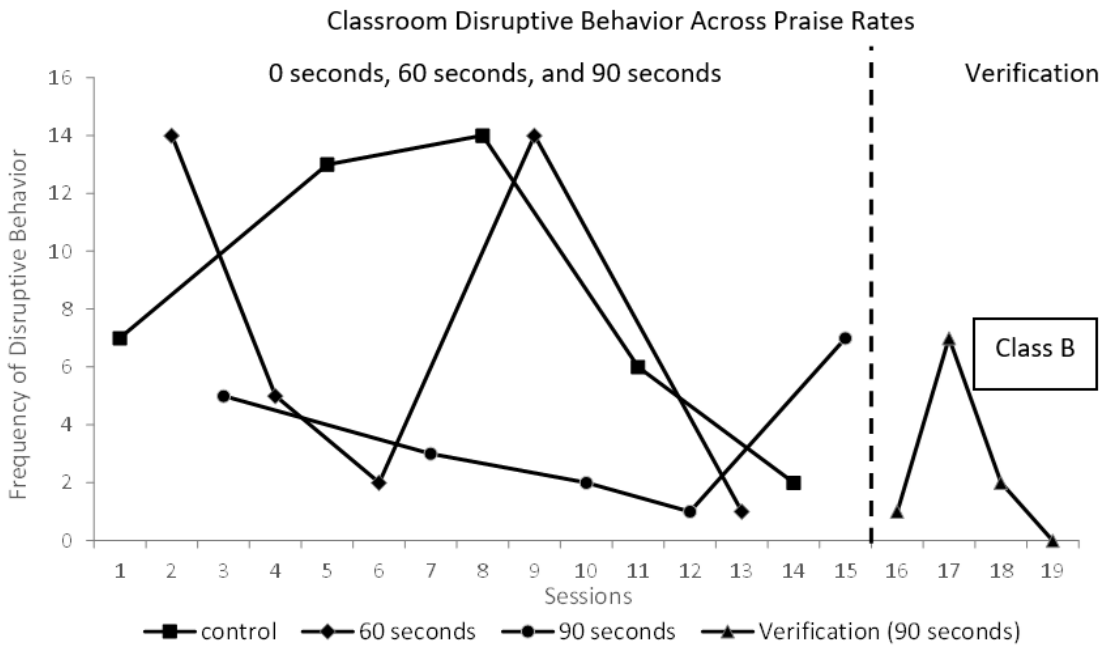

Figure 5. Disruptive Behavior in Classroom B.

Classroom C

Frequency of interval occurrences of DB for Classroom C are presented in Figure 6. Classroom C's mean frequency of interval occurrence of DB was 4.2 (range, 0-11) during control condition sessions. For the 60 second condition, children's mean frequency of interval occurrence of DB was 2.4 (range, 1-5). For the 90 second condition, children's mean frequency of interval occurrence of DB was 3 (range, 1-5). During the independent verification phase, Teacher A implemented the 60 second condition and the children's mean frequency of interval occurrence of DB was 3 (range, 0-9).

During the alternating treatments phase, across all conditions, children's DB ranged from 0-11 occurrences per observation session, with little divergence across the 60 and 90 second conditions. The data paths for these conditions were stable during the alternating treatments phase. The control condition was low and variable, diverging from

the 60 and 90 second conditions with some overlap. Additionally, when the independent verification phase was implemented, there was not a change in level for children's DB as the 60 second condition was implemented in isolation. Moreover, the data path during the independent verification phase was low and variable.

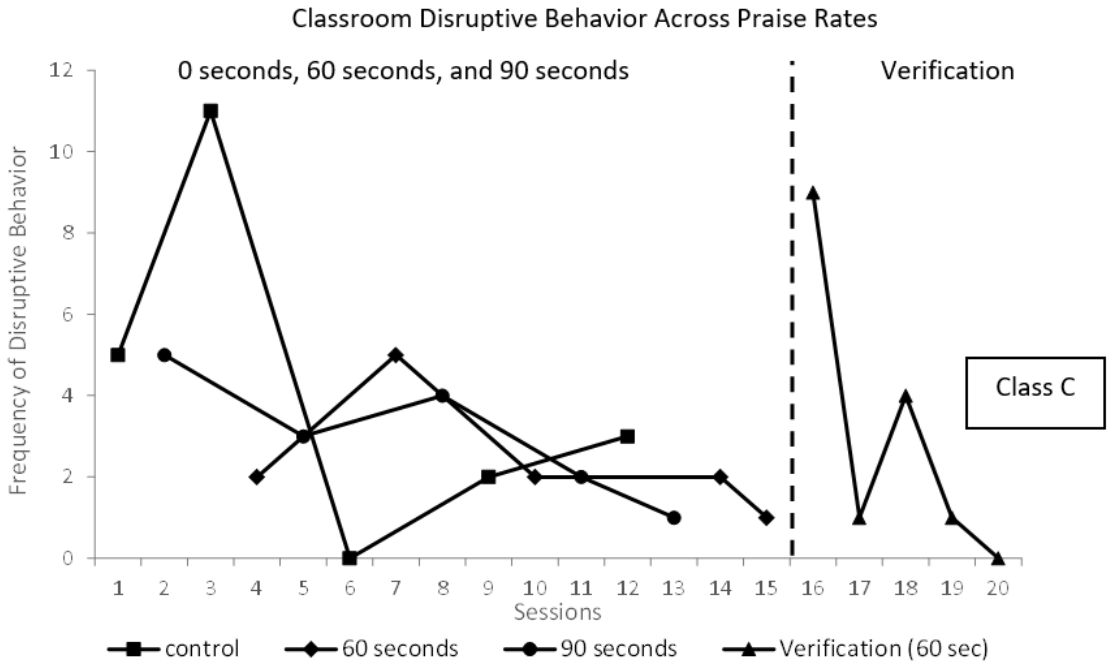

Figure 6. Disruptive Behavior in Classroom C.

Social validity

Acceptability, effectiveness, and time to effect for each teacher's most preferred rate of BSP were measured using the Behavior Intervention Rating Scale (BIRS). Due to Teacher B's extended absence, her social validity data were not able to be collected.

Teacher A indicated that the 60 second rate was her most preferred rate of BSP because it was more consistent. Teacher A's ratings resulted in average item scores of 4.91 for acceptability, 4.71 for effectiveness, and 4 for time to effect. These scores

indicate that she found the 60 second praise rate acceptable and effective, and produced an adequate rate of change in behavior.

Although Teacher C chose the 60 second rate as her most preferred to use during the verification phase, she indicated on the BIRS that she did not have a preference as she did not see any change in her class. Teacher C's ratings resulted in average item scores of 4.16 for acceptability, 4.14 for effectiveness, and 3 for time to effect. These scores indicate that she found both praise rates slightly acceptable and effective but produced a low rate of change in behavior.

CHAPTER IV - DISCUSSION

The first research question asked whether there were differential results for children's AEB across no BSP, BSP every 60-seconds, and BSP every 90-seconds. Results from this study indicate no differences in AEB between the three conditions. Results from this study are inconsistent with prior studies, such as Markel, Riden, and Hooks (2021), Allday et al. (2012), and O'Handley et al. (2020), which found that the use of BSP increases AEB in the classroom from baseline or no BSP levels. Additionally, results are inconsistent with prior studies, such as Floress et al. (2018), Bloodsaw (2012), Kranak, Alber-Morgan, and Sawyer (2017), and O'Handley et al. (2016), which found that, as BSP increases, AEB increases. These findings could be due to a ceiling effect, or the inability for rates of AEB to increase from their baseline level.

The second research question asked whether there were differential results for children's DB across no BSP, BSP every 60-seconds, and BSP every 90 seconds. Results from this study indicate no differences in DB between the three conditions. Results from this study are inconsistent with prior research, such as Dufrene et al. (2012), Dufrene et al.(2014), and LaBrot et al. (2021), which found that the use of BSP decreases children's DB relative to no BSP conditions. Moreover, results from this study are inconsistent with LaBrot et al. (2020), which found that, as BSP increases, DB decreases. These findings could be due to a lack of treatment integrity, leading to minimal differences between conditions. Additionally, the use of classroom behavior management techniques in addition to BSP could have affected the results.

The third research question asked if teachers rated BSP as socially valid based on their ratings on the BIRS. Results from this study indicate that BSP is a socially valid

classroom behavior management technique. Results from this study are consistent with previous school consultation research, such as LaBrot et al. (2020), which found that BSP is a socially valid classroom behavior management technique. While their ratings on the BIRS indicated that they found BSP to be an acceptable and effective technique, they also reported their concerns regarding the rates of BSP included in this study. Teacher C reported that she did not see a difference in her children's behavior between the conditions. Additionally, Teacher A reported that she frequently wanted to praise her children more often than she was prompted.

In addition to findings related to the research questions, there are other findings from this study worthy of discussion. First, all three teachers preferred using the personal interval timing device rather than the bug-in-ear device to prompt the delivery of BSP statements. However, each teacher provided a different reason for the preference. Teacher A simply stated that the interval timing device was "easier," while Teachers B and C cited poor hearing ability and the bothersome cord connecting the headphones to the bug-in-ear device as reasons that they preferred the interval timing device. Second, results from this study found no differential effects across BSP conditions, which may be due to teachers employing effective classroom management strategies before experimental procedures were introduced. Previous research comparing rates of BSP in school settings have not included such findings; and it may be that when teachers employ multiple evidence-based classroom management strategies, varying rates of BSP may not produce differential effects on children's behavior.

Limitations

There are several limitations associated with this study. As the design did not include baseline, the teacher's rate of BSP and children's behavior prior to manipulations is not known. A decrease in BSP from baseline to the alternating treatments phase could have caused changes in the children's behavior during the alternating treatments phase. Further, a ceiling effect could have lessened the ability for the children's AEB to increase. A high rate of AEB at baseline would not allow an increase in AEB during the alternating treatments phase. The results of this study may have been different if the inclusion criteria included requirements for rate of AEB rather than DB.

Additionally, this study did not include controls for other classroom behavior management strategies that the teachers used during the alternating treatments and verification phases. All three teachers indicated that they implement at least one classroom behavior management technique in their classroom other than BSP, ranging from general praise to "bucket fillers" and precorrections. Any additional behavior management techniques implemented during the study could have affected the results of the study.

Finally, the teachers displayed variable treatment integrity during both the alternating treatments phase and verification phase, although overall treatment integrity was high. As the mean treatment integrity across all three teachers was 89.33%, the actual praise rates often differed from the prescribed rates. As such, conclusions regarding research questions one and two may be limited because conditions may have been similar to each other when treatment integrity varied.

Future directions

Further study is warranted to determine whether the present study's results can be associated with the limitations of this study. A baseline phase should be added to the design, allowing for comparison between students' natural behavior and behavior associated with manipulated rates of BSP. Additionally, inclusion criteria should require that the children's AEB is sufficiently low, so that a ceiling effect does not limit any increase in AEB. Moreover, researchers should exert greater control over implementation of the independent variables so that relative effects of different praise rates are actually tested.

The present study included praise rates based on elementary teachers' natural praise rates. Further study is warranted to determine preschool teachers' natural praise rates and their effect on the children's behavior. The natural praise rates can then be manipulated to find the most effective rate that is also feasible for teachers. Additionally, the teachers participating in the present study were trained in classroom behavior management and used many strategies to control their children's behavior. Future research is warranted to determine whether manipulations of rates of BSP used in isolation affect preschool children's AEB and DB.

APPENDIX A - Teacher Consent Form

Title of Study: Comparing Effects of Praise Rates on Classroom Behavior
Study Site: XXXXX
Protocol Number: 22-1625
Name of Researcher and University Affiliation: Brittany Pigg, B.A.; The University of Southern Mississippi
Dear Teacher,

Hello, my name is Brittany Pigg, and I am a graduate student at the University of Southern Mississippi in the School Psychology Doctoral Program. I am currently conducting my thesis, which will compare the effects of different rates of praise on students' classroom behavior. This study is being conducted under the supervision of Dr. Brad Dufrene.

Please consider the following when deciding if you will participate in this study:

Purpose:

The purpose of this study is to compare the effectiveness of two differing rates of a class-wide intervention aiming to increase appropriately engaged behavior. Behavior Specific Praise is a classroom management strategy that utilizes positive reinforcement to produce behavior change in the classroom setting.

Procedure:

If you choose to participate in this study, you will be trained to use behavior-specific praise (BSP) as a class-wide behavioral management strategy. Prior to intervention implementation, an initial screening will be conducted to verify that the classroom meets the inclusion requirements for the study. During this time, you will be asked to continue your normal classroom management procedures.

If your classroom qualifies for participation, you will be required to attend a brief training meeting to learn and practice the intervention. Upon displaying 100% of the steps of the intervention successfully, the intervention phase will begin.

Behavior Specific Praise (BSP) is a classroom management strategy aimed at reducing disruptive behavior in the classroom setting. During the intervention, you will be equipped with a personal interval timing device, which is a small electronic device that provides a tactile prompt (vibration) for you to provide a praise statement. When prompted by the personal interval timing device, you will provide a behavior-specific praise statement to a student in your classroom. The

intervention will take place during morning meetings, circle time, or centers, and will last 20 minutes per session for 20 sessions.

Benefits:

Agreeing to participate in this study may offer benefits for you and your students. By participating in this study, you will be trained in the implementation of a class-wide behavioral management strategy.

Risks:

The greatest discomfort for you will be implementing a new intervention in the classroom. To reduce discomfort, I will provide training and materials and will be available to provide support. Your students should not experience any discomfort from the implementation of the intervention.

Will this information be kept confidential?

Your name and your students' behavior data will be kept confidential. To protect your and your students' privacy, you will be assigned a number. All records will contain this number and at no time will contain your name. Please note that these records will be held by a state entity and therefore are subject to disclosure if required by law.

Who do I contact with research questions?

Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board at the University of Southern Mississippi at 601-266-5997. Any questions about this research project should be directed to the principal investigator, Brittany Pigg, at 251-442-9638.

What if I do not want to participate?

Please understand that your participation in this project is completely voluntary. You may discontinue participation at any time without penalty or loss of benefits.

What if I DO want to participate?

If you would like to participate in this study, please sign below.

_____ _____

Participant Signature Date

_____ _____

Investigator Signature Date

APPENDIX B - Teacher Demographic Form

Name: _____ Date: _____

School: _____ Grade/Subject: _____

<table>
<tr><td>1. What is your sex? ☐ Male ☐ Female</td><td>2. How many years have you taught?
_____</td></tr>
<tr><td colspan="2">3. Please check all categories that best describe your race/ethnicity:
❒ American Indian/Alaska Native
❒ Asian/Pacific Islander
❒ Black, not Hispanic
❒ Hispanic
❒ White, not Hispanic
❒ Other (specify): _____
❒ Decline</td></tr>
<tr><td>4. What is your highest level of education (check one):
❒ High school diploma
❒ Associate's degree / technical
❒ Bachelor's degree
❒ Master's degree
❒ Master's degree +30
❒ Doctoral, Educational Specialist, J.D. degree
What was your major area of study (highest degree only):
_____</td><td>5. Have you ever received training in classroom behavior management?
❑ No
❑ Yes</td></tr>
<tr><td colspan="2">6. Please check all classroom behavior management techniques that you consistently use in your classroom:
❒ Behavior-specific praise
❒ General praise
❒ Active supervision/proximity control
❑ Precorrections
❒ Effective instruction delivery
❒ Other (specify): _____</td></tr>
</table>

APPENDIX C - Training Script

Behavior Specific Praise: A statement in which the teacher specifies the behavior for which the praise is delivered (Musti-Rao & Haydon, 2011). The statement should be specific, measurable, and observable.

Example: Bobby sits on the rug quietly while keeping his hands and feet to himself. Teacher: “Bobby, I love the way you are sitting quietly and keeping your hands and feet to yourself!”

Non-Example: Bobby sits on the rug quietly while keeping his hands and feet to himself. Teacher: “Good job Bobby.”

Videos:

Example and non-example:

Carpet example:

APPENDIX D - Behavioral Observation Form

Condition:_____ # of students present:_____

Observer:_____ Teacher:_____ Date:_____

#	BSP	DB	AEB	#	BSP	DB	AEB
1				2			
3				4			
5				6			
7				8			
9				10			
11				12			
13				14			
15				16			
17				18			
19				20			

APPENDIX E - Procedural Integrity

Condition: _____ Date: _____

Observer:_____Teacher:_____

1. Researcher set personal interval timing device to correct interval	YES	N/A	NO
2. Researcher ensured personal interval timing device is working correctly	YES	N/A	NO
3. Researcher provided teacher with personal interval timing device	YES	N/A	NO
4. Teacher wore/held provided personal interval timing device	YES	N/A	NO
5. Researcher asked teacher how many children are present in her classroom	YES	N/A	NO
6. Researcher cleaned earbud with alcohol wipe	YES	N/A	NO
7. Researcher turned on mic	YES	N/A	NO
8. Researcher turned on earbud	YES	N/A	NO
9. Researcher tested volume of bug-in-ear device	YES	N/A	NO

_____/_____ Steps completed = _____%

Condition: _Control____ Date:_____

Observer:_____ Teacher:_____

1. Researcher instructed teacher to withhold all praise	YES	NO
2. Researcher asked teacher how many children are present in her classroom	YES	NO

_____/2 Steps completed = _____%

APPENDIX F - Behavior Intervention Rating Scale (BIRS)

Behavior Intervention Rating Scale (BIRS; Elliot and Von Brock Treuting, 1991)
1=Strongly Disagree 2=Disagree 3=Slightly Disagree 4=Slightly Agree 5=Agree 6=Strongly Agree

1.	This would be an acceptable intervention for my classroom.	1	2	3	4	5	6
2.	Most teachers would find this intervention appropriate for their classroom.	1	2	3	4	5	6
3.	The intervention should prove effective in changing classroom behavior.	1	2	3	4	5	6
4.	I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
5.	Classroom behaviors warrant use for this intervention.	1	2	3	4	5	6
6.	Most teachers would find this intervention suitable for their classroom.	1	2	3	4	5	6
7.	I would be willing to use this in the classroom setting.	1	2	3	4	5	6
8.	The intervention would *not* result in negative side-effects for the child.	1	2	3	4	5	6
9.	The intervention would be appropriate intervention for a variety of children.	1	2	3	4	5	6
10.	The intervention is consistent with those I have used I have used in classroom settings.	1	2	3	4	5	6
11.	The intervention was a fair way to handle the classroom behavior.	1	2	3	4	5	6
12.	The intervention is reasonable for use in the classroom.	1	2	3	4	5	6
13.	I like the procedures used in the intervention.	1	2	3	4	5	6
14.	The intervention was a good way to handle behaviors in the classroom.	1	2	3	4	5	6

15.	Overall, the intervention would be beneficial for the classroom.	1	2	3	4	5	6
16.	The intervention would quickly improve classroom behavior.	1	2	3	4	5	6
17.	The intervention would produce a lasting improvement in the classroom's behavior.	1	2	3	4	5	6
18.	The intervention would improve a child's behavior to the point that it would not noticeably deviate from other classmates' behavior.	1	2	3	4	5	6
19.	Soon after using the intervention, the teacher would notice a positive change in the classroom's behavior.	1	2	3	4	5	6
20.	The classroom's behavior will remain at an improved level even after the intervention is discontinued.	1	2	3	4	5	6
21.	Using the intervention should not only improve the child's behavior in the classroom, but also in other settings (e.g., other classrooms, home).	1	2	3	4	5	6
22.	When comparing this classroom with a well-behaved classroom before and after the use of the intervention, this classroom and the other classrooms behavior would be more alike after using the intervention.	1	2	3	4	5	6
23.	The intervention should produce enough improvement in the classroom behavior so that problem behaviors are no longer a problem in the classroom.	1	2	3	4	5	6
24.	Other behaviors in the classroom are likely to be improved by the intervention.	1	2	3	4	5	6

Which rate of BSP did you prefer and why?

APPENDIX G - Letter to Parents

THE UNIVERSITY OF
SOUTHERN MISSISSIPPI

SCHOOL OF PSYCHOLOGY
118 College Drive #5025 | Hattiesburg, MS 39406
Phone: 601.266.5480 | Fax: 601.266.5580 | Brittany.Pigg@usm.edu |

Dear Parents and Guardians,

We are excited to partner with the [redacted] to evaluate the effects of different rates of praise on class-wide behavior. While we know that behavior-specific praise is an effective classroom behavior management procedure, we do not know how frequently teachers have to praise their children for praise to be effective. Also, we would like to know more about what teachers think is doable in their classroom.

What is my child being asked to do?
Your child's teacher will be asked to provide behavior-specific praise at specific points in time. Otherwise, your child's teacher will use their typical classroom management strategies. We will observe the teacher from behind the one-way observation window and will observe during 20-minute observation sessions 5-10 times per week. We will not collect any data for individual children, but we will be collecting data on the number of children that are appropriately engaged with the classroom activity.

How will my child's information be protected?
The following efforts will be made to protect the confidentiality of your child's information. All study records will be kept in a secure location (i.e., a secure OneDrive folder only available to the primary investigator and the supervising investigator). No identifying information will be collected. At the end of this study, the researchers may publish their findings. Information will be presented in summary format and teachers will not be identified in any publications or presentations.

Whom do I contact about the study?
This project has been approved by the Institutional Review Board at USM (IRB-22-1625), which ensures research studies involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5125, Hattiesburg, MS 39406-0001, 601-266-5997. Any questions about this project may be directed to the Principal Investigator, Brittany Pigg (Brittany.Pigg@usm.edu), or the Supervising Investigator, Dr. Brad Dufrene (Brad.Dufrene@usm.edu).

If you <u>do not want</u> your child to be included in the class-wide percentage of on-task behavior, please contact your child's teacher.

Sincerely,

Brittany Pigg

Brittany Pigg, BA
School of Psychology

APPENDIX H - IRB Approval Letter

Office *of*
Research Integrity

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

118 COLLEGE DRIVE #5116 • HATTIESBURG, MS | 601.266.6756 | WWW.USM.EDU/ORI

NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and 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 involving risks to subjects must be reported immediately. Problems should be reported to ORI using the Incident form available in InfoEd.
- The period of approval is twelve months. If a project will exceed twelve months, a request should be submitted to ORI using the Renewal form available in InfoEd prior to the expiration date.

PROTOCOL NUMBER:	22-1625
PROJECT TITLE:	Comparing Effects of Praise Rates on Classroom Behavior
SCHOOL/PROGRAM	Psychology
RESEARCHERS:	PI: Brittany Pigg Investigators: Pigg, Brittany~Dufrene, Brad~
IRB COMMITTEE ACTION:	Approved
CATEGORY:	Expedited Category
PERIOD OF APPROVAL:	03-May-2023 to 02-May-2024

Donald Sacco Jr.

Donald Sacco, Ph.D.
Institutional Review Board Chairperson

REFERENCES

Allday, A. R., Hinkson-Lee, K., Hudson, T., Neilsen-Gatti, S., Kleinke, A., & Russel, C. S. (2012). Training general educators to increase behavior-specific praise: Effects on students with EBD. *Behavioral Disorders, 37*(2), 87–98. https://doi.org/10.1177/019874291203700203

Aloe, A. M., Shisler, S. M., Norris, B. D., Nickerson, A. B., & Rinker, T. W. (2014). A multivariate meta-analysis of student misbehavior and teacher burnout. *Educational Research Review*, *12*, 30–44. https://doi.org/10.1016/j.edurev.2014.05.003

Barlow, D. H., & Hayes, S. C. (1979). Alternating treatments design: One strategy for comparing the effects of two treatments in a single subject. *Journal of Applied Behavior Analysis*, *12*(2), 199–210. https://doi.org/10.1901/jaba.1979.12-199

Bloodsaw, J. (2012). *The effects of teacher administered behavior-specific praise on promoting positive behavior in students* (Publication No. 2012-99210-453; Issues 5-A). [Doctoral dissertation, Kent State University]. ProQuest Information & Learning.

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

Cherne, J. L. (2008). *Effects of praise on student behavior in the classroom* [Doctoral dissertation, University of Minnesota]. ProQuest Publishing

Clunies-Ross, P., Little, E., & Kienhuis, M. (2008). Self-reported and actual use of proactive and reactive classroom management strategies and their relationship with teacher stress and student behaviour. *Educational Psychology, 28*, 693-710.

Codding, R. S., & Smyth, C. A. (2008). Using performance feedback to decrease classroom transition time and examine collateral effects on academic engagement. *Journal of Educational and Psychological Consultation, 18*, 325-345.

Colvin, G., Sugai, G., Good, R. H. III, & Lee, Y.-Y. (1997). Using active supervision and precorrection to improve transition behaviors in an elementary school. *School Psychology Quarterly, 12*(4), 344–363. https://doi.org/10.1037/h0088967

Cooper, J. O., Heron, T.E., & Heward, W. L. (2007). *Applied Behavior Analysis (2nd Edition).* Upper Saddle River, NY: Pearson Prentice.

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

De Pry, R. L., & Sugai, G. (2002). The effect of active supervision and pre-correction on minor behavioral incidents in a sixth grade general education classroom. *Journal of Behavioral Education, 11*(4), 255–267. https://doi.org/10.1023/A:1021162906622

Dufrene, B. A., Parker, K. M., Menousek, K., Zhou, Q., Lestremau Harpole, L., & Olmi, D. J. (2012). Direct behavioral consultation in Head Start to improve teacher use of praise and effective instruction delivery. *Journal of Educational and Psychological Consultation, 22*, 159–186.

Dufrene, B. A., Lestremau, L., & Zoder-Martell, K. (2014). Direct behavioral consultation in elementary alternative school classrooms: Effects on teachers' behavior specific praise and student disruptive behavior. *Psychology in the Schools, 51*(6), 5657–580.

Elliot, S. N., & Treuting, M. V. B. (1991). The behavior intervention rating scale: Development and validation of a pretreatment acceptability and effectiveness measure. *Journal of School Psychology, 29*, 45-51.

Every Student Succeeds Act, 20 U.S.C. § 6301 (2015). Radley, K. C., Dart, E. H., & O'Handley, R. D. (2016). The quiet classroom game: A class-wide intervention to increase academic engagement and reduce disruptive behavior. *School Psychology Review, 45*, 93-108.

Farson, R. E. (1963). Praise Reappraised. *Harvard Business Review*, *41*(5), 61–66.

Floress, M. T., Berlinghof, J. R., Rader, R. A., & Riedesel, E. K. (2017). Preschool teachers' use of praise in general, at-risk, and special education classrooms. *Psychology in the Schools*, *54*(5), 519–531. https://doi.org/10.1002/pits.22014

Floress, M. T., Jenkins, L. N., Reinke, W. M., & McKown, L. (2018). General education teachers' natural rates of praise: A preliminary investigation. *Behavioral Disorders*, *43*(4), 411–422. https://doi.org/10.1177/0198742917709472

Forehand, R. L., & Mcmahon, R. J. (1987). *Helping the noncompliant child: A clinician's guide to parent training*.

Gage, N. A., Scott, T., Hirn, R., & MacSuga-Gage, A. S. (2018). The relationship between teachers' implementation of classroom management practices and student behavior in elementary school. *Behavioral Disorders*, *43*(2), 302–315. https://doi.org/10.1177/0198742917714809

Gilmour, A. F., Sandilos, L. E., Pilny, W. V., Schwartz, S., & Wehby, J. H. (2022). Teaching students with emotional/behavioral disorders: Teachers' burnout

profiles and classroom management. *Journal of Emotional & Behavioral Disorders*, *30*(1), 16–28. https://doi.org/10.1177/10634266211020258

Hatton, H. L. (2016). *Revisiting the effects of praise on student behavior: A systematic review and meta-analysis of the single case research* (2016-37857-160; Issues 4-A(E)). [Doctoral dissertation, Texas A&M University]. ProQuest Information & Learning.

Ingersoll, R., Merrill, E., Stuckey, D., & Collins, G. (2018). Seven trends: The transformation of the teaching force, updated October 2018. Research Report (#RR 2018–2). Consortium for Policy Research in Education, University of Pennsylvania

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

Johnson, B. L., Jr. (1997). An organizational analysis of multiple perspectives of effective teaching: Implications for teacher evaluation. *Journal of Personnel Evaluation in Education*, *11*(1), 69–87.

Kennedy, W. A., & Willcutt, H. C. (1964). Praise and blame as incentives. *Psychological Bulletin*, *62*(5), 323–332. https://doi.org/10.1037/h0042917

Kranak, M. P., Alber-Morgan, S. R., & Sawyer, M. R. (2017). A parametric analysis of specific praise rates on the on-task behavior of elementary students with autism. *Education and Training in Autism and Developmental Disabilities, 52,* 453-464.

Kratochwill, T. R., Hitchcock, J. H., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M., & Shadish, W. R. (2013). Single-case intervention research design standards. *Remedial and Special Education*, *34*(1), 26–38.

LaBrot, Z. C., Dufrene, B. A., Whipple, H., McCargo, M., & Pasqua, J. L. (2020). Targeted and intensive consultation for increasing Head Start and elementary teachers' behavior-specific praise. *Journal of Behavioral Education, 29*(4), 717–740. https://doi.org/10.1007/s10864-019-09342-9

LaBrot, Z. C., Dufrene, B. A., Olmi, D. J., Dart, E. H., Radley, K., Lown, E., & Pasqua, J. L. (2021). Maintenance and generalization of preschool teachers' use of behavior-specific praise following in situ training. *Journal of Behavioral Education*, *30*(3), 350–377. https://doi.org/10.1007/s10864-020-09375-5

Lewis, T. J., Colvin, G., & Sugai, G. (2000). The effects of pre-correction and active supervision on the recess behavior of elementary students. *Education and Treatment of Children*, *23*(2), 109–121.

Lewis, T. J., Sugai, G., & Colvin, G. (1998). Reducing problem behavior through a school-wide system of effective behavioral support: Investigation of a school-wide social skills training program and contextual interventions. *School Psychology Review*, *27*(3), 446. https://doi.org/10.1080/02796015.1998.12085929

Little, S., & Akin-Little, A. (2008). Psychology's contributions to classroom management. *Psychology in the Schools, 45*(3), 227-234.

Matheson, A. S., & Shriver, M. D. (2005). Training teachers to give effective commands: Effects on student compliance and academic behaviors. *School Psychology Review*, *34*, 202-219.

McCormick, J., & Barnett, K. (2011). Teachers' attributions for stress and their relationships with burnout. *International Journal of Educational Management*, *25*(3), 278–293.

Moffatt, T. (2011). Increasing the teacher rate of behaviour specific praise and its effect on a child with aggressive behaviour problems. *Kairaranga*, *12*(1), 51–58. https://doi.org/10.54322/kairaranga.v12i1.152

Musti-Rao, S., & Haydon, T. (2011). Strategies to increase behavior-specific teacher praise in an inclusive environment. Intervention in School and Clinic, 47(2), 91-97. https://doi.org/10.1177/1053451211414187

O'Handley, R. D., Olmi, D. J., Dufrene, B. A., Radley, K. C., & Tingstrom, D. H. (2023). The effects of different rates of behavior-specific praise in secondary classrooms. *Journal of Positive Behavior Interventions*, *25*, 118-130.

Polick, A. S., Carr, J. E., & Hanney, N. M. (2012). A comparison of general and descriptive praise in teaching intraverbal behavior to children with autism. *Journal of Applied Behavior Analysis*, *45*(3), 593–599. https://doi.org/10.1901/jaba.2012.45-593

Radley, K. C., O'Handley, R. D., & LaBrot, Z. C. (2015). A comparison of momentary time sampling and partial-interval recording for assessment of effects of social skills training. *Psychology in the Schools*, *52*, 363-378.

Reinke, W. M., Lewis-Palmer, T., & Martin, E. (2007). The effect of visual performance feedback on teacher use of behavior-specific praise. *Behavior Modification*, *31*(3), 247–263. https://doi.org/10.1177/0145445506288967

Simonsen, B., Fairbanks, S., Briesch, A., Myers, D., & Sugai, G. (2008). Evidence-based practices in classroom management: Considerations for research to practice. *Education & Treatment of Children*, *31*(3), 351–380. https://doi.org/10.1353/etc.0.0007

Stronge, J. H., Ward, T. J., & Grant, L. W. (2011). What makes good teachers good? a cross-case analysis of the connection between teacher effectiveness and student achievement. *Journal of Teacher Education*, *62*(4), 339–355. https://doi.org/10.1177/0022487111404241

Sutherland, K. S., Wehby, J. H., & Copeland, S. R. (2000). Effect of varying rates of behavior-specific praise on the on-task behavior of students with EBD. *Journal of Emotional and Behavioral Disorders*, *8*(1), 2–8.

Tarlow, K. R, (2017). An improved rank correlation effect size statistic for single-case designs: Baseline corrected tau. *Behavior Modification*,41(4), 427-467.

Trussell, R. P. (2008). Classroom universals to prevent problem behaviors. *Intervention in School & Clinic*, *43*(3), 179–185. https://doi.org/10.1177/1053451207311678

Wang, M. C., Haertel, G. D., & Walberg, H. J. (1993). What helps students learn? *Educational Leadership*, *51*(4), 74–79.

Watkins, M. W., & Pacheco, M. (2000). Interobserver agreement in behavioral research: Importance and calculation. *Journal of Behavioral Education*, *10*(4), 205–212. https://doi.org/10.1023/A:1012295615144

White, K. (2018). Increasing teachers' use of behavior specific praise via smart watch [Unpublished master's thesis]. University of Southern Mississippi.

White, M. A. (1975). Natural rates of teacher approval and disapproval in the classroom. *Journal of Applied Behavior Analysis*, *8*(4), 367–372. https://doi.org/10.1901/jaba.1975.8-367