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AN EXAMINATION OF THE GOLDEN RATIO IN GENERAL EDUCATION CLASSROOMS

by

Carrie McLaughlin

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Special Education

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UTAH STATE UNIVERSITY
Logan, UT

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ABSTRACT

An Examination of the Golden Ratio in General Education Classrooms

by

Carrie McLaughlin, Master of Science

Utah State University, 2022

Major Professor: Dr. Sarah Pinkelman
Department: Special Education and Rehabilitation

A large body of research indicates use of contingent praise is an effective classroom management strategy to increase appropriate behavior and decrease problem behavior. Since prior research also suggested that teachers tend to have more negative interactions with students than positive ones, use of a specific praise to reprimand ratio is commonly recommended in teacher preparation programs and professional development. However, recommendations regarding the optimal ratio vary and there is limited evidence to support use of any specific ratio. There have also been relatively few studies examining naturally occurring rates of teacher praise, reprimands, and student problem behavior. Therefore, the purpose of this proposed study is to examine naturally occurring rates of teacher praise, reprimands, and redirections and student problem behavior in general education classrooms. Data will be obtained through direct observations and we will explore the relationship between teacher and student behavior using correlational analyses. Results will add to the literature by documenting naturally occurring rates of teacher praise and reprimands in the classroom. Findings may also provide useful

information about whether specific praise to reprimand ratios are correlated with lower levels of student problem behavior. Such information may help to guide recommendations to teachers, decrease problem behavior, and improve student-teacher interactions.

Keywords: Praise to Reprimand Ratio, Praise, Reprimand, Redirection, general education classroom

(71 pages)

PUBLIC ABSTRACT

An Examination of the Golden Ratio in General Education Classrooms

Carrie McLaughlin

A large body of research indicates use of praise as a response to appropriate behavior is an effective classroom management strategy to increase appropriate behavior and decrease problem behavior. Since prior research also suggested that teachers tend to have more negative interactions with students than positive ones, use of a specific praise to reprimand ratio is commonly recommended in teacher preparation programs and professional development. However, recommendations regarding the optimal ratio vary and there is limited evidence to support use of any specific ratio. There have also been relatively few studies examining naturally occurring rates of teacher praise, reprimands, and student problem behavior. Therefore, the purpose of this proposed study is to examine naturally occurring rates of teacher praise, reprimands, and redirections and student problem behavior in general education classrooms. Data will be obtained through direct observations and we will explore the relationship between teacher and student behavior using correlational analyses. Results will add to the literature by documenting naturally occurring rates of teacher praise and reprimands in the classroom. Findings may also provide useful information about whether specific praise to reprimand ratios are correlated with lower levels of student problem behavior. Such information may help to

guide recommendations to teachers, decrease problem behavior, and improve student-teacher interactions.

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Contingent teacher praise is commonly recommended for use in classrooms as a means of increasing appropriate behavior and decreasing problem behavior (Hall et al., 1968; Risley, 2005). Praise is often defined as an expression of approval or favorable judgment through gestures or statements directed at an individual or a group of individuals (Floress et al., 2018; Sabey et al., 2019). Examples include high fives, thumbs up, and saying "great work" or "awesome job." When praise is used contingently, praise is delivered only after the target behavior occurs. Praise is often recommended for use in the classroom because, for many people, praise functions as a generalized conditioned reinforcer. This means the majority of people have a history of praise and social approval being paired with a variety of primary and conditioned reinforcers (Wine et al., 2013). Over time, praise functions as a conditioned reinforcer across a variety of establishing operations (Cooper et al., 2014). This versatility is one of the many benefits of using praise contingently to change behavior.

Prior researchers demonstrated that contingent praise was effective in increasing the behavior that it follows for many students under a wide variety of circumstances (Floress et al. 2017; Fullerton et al., 2009 Sabey et al., 2019). For example, in a study conducted by Fullerton and colleagues (2009), contingent praise was shown to increase compliance and student engagement with adults, peers, and classroom materials in typically developing preschool children. In more recent research, increases in teacher praise were effective in increasing on-task behavior for three of five elementary school children diagnosed with Autism Spectrum Disorder (ASD) in a private school for children with ASD. (Kranak et al., 2017) and the percentage of students demonstrating

on-task behavior in a self-contained middle school special education classroom (Orr et al., 2020). Aside from increasing appropriate behavior, prior research also provided evidence that contingent praise may also effectively decrease student problem behavior (Gable et al., 2009; Reinke et al., 2008), improve relationships between teachers and students (Floress et al., 2017), and create a more positive learning environment (Shores et al., 1993; Strain & Joseph, 2004; Walker et al., 1999). Together, these previous studies indicate that praise is effective in improving student behavior, with various student populations and age groups, in a range of educational settings.

Aside from the demonstrated effectiveness of praise, several other benefits make praise a practical behavior management strategy for use in school settings. Praise is free, unlimited, and easy to deliver. Teachers and schools do not need to purchase any materials to provide praise and minimal training is likely required for educators to use praise contingently to improve student behavior. Teachers can deliver praise quickly and can do so while providing instruction, making the use of contingent praise an option that is less disruptive to instruction than delivering other types of reinforcers, such as token, tangible, or activity reinforcers. For many educators, these features may enhance the acceptability of using praise contingently to improve student behavior.

In light of these advantages, much of the prior research on praise focused on using various strategies to increase praise rates in the classroom. Strategies to increase educators' use of praise examined in previous research included video self-modeling (Hawkins & Heflin, 2011), a response to intervention approach (Myers, et al., 2011), self-monitoring (Wills, et al., 2019), targeted professional development (Simonsen et al., 2017), and consultation services (Briere et al., 2015). However, there have been

relatively few studies to examine naturally occurring praise rates in classrooms (Burnett & Mandel, 2010; Floress & Jenkins, 2015). Even fewer studies have looked into the relationship between the naturally occurring praise rate of teachers and the corresponding rate of student problem behavior (Floress et al., 2018; Reinke et al., 2013; White, 1975).

White (1975) was of the first to examine the naturally occurring rates of praise in the classroom setting. White examined rates of approval and disapproval statements by 104 teachers of grades 1-12 and found that overall, teachers used more disapproval statements than approval statements. White noted that approval statements decreased around third and fourth grade. In early elementary school, teachers' rate of approval statements was approximately 0.73 per minute and in high school, the approval rate decreased to approximately 0.01 per minute. Although White's study included both data on teacher praise and reprimand rates, this data was collected over 45 years ago. Since that time, there has been limited research examining the naturally occurring rates of praise and reprimands in the classroom setting and how these teacher behaviors relate to student problem behavior.

More recently, Burnett and Mandel (2010) explored naturally occurring rates of teacher praise and reprimand statements. They examined students' and teachers' perceptions of praise and corrective feedback in the classroom through structured interviews. Researchers also conducted classroom observations to determine how frequently teachers used praise and corrective feedback. The participants included 56 students in grades 1-6 and five teachers from a primary school in Australia. All students interviewed indicated they enjoyed receiving praise and 60% of the students preferred private praise over public praise. Praise rates among the teachers observed in this study

averaged 0.48 per minute, a lower average rate than the average of .73 teacher praise statements per minute found by White (1975). However, this study focused on academic feedback and the author suggested further investigations were needed to understand the effects of social and behavioral feedback in the classroom.

In a similar study, Reinke et. al (2013) collected data on naturally occurring rates of teacher praise and reprimand rates and student problem behavior to examine the relationship between observed classroom management practices and student disruptive behavior. Reinke and colleagues conducted classroom observations in 33 elementary school classrooms in which School-Wide Positive Behavioral Interventions and Support (SW-PBIS) was being implemented with high fidelity according to recent Systematic Evaluation Tool (SET; OSEP, 2005) scores. These researchers found that the teachers observed in this study had more negative interactions with students than positive interactions. This finding was consistent with early research conducted on praise rates in the classroom (Anderson et al., 1979; Good & Grouws, 1977; Heller & White, 1975) that found rates of negative interactions between teachers and students to be higher than positive interactions.

Reinke et. al (2013) also found that teachers with higher rates of praise reported being more effective in classroom management. In addition, teachers with lower praise rates were more likely to report higher levels of emotional exhaustion and higher rates of disruptive behaviors in their classrooms. A limitation of this study was that all participants were from one large urban school district, so further research is needed to determine if the findings can be generalized to teachers and students in rural areas. The authors also noted that direct observation data were collected in a single observation and

that data collected across multiple days would likely provide a more complete representation of student-teacher interactions.

Floress et al. (2018), who also examined the naturally occurring rates of praise and how praise rates related to student behavior, conducted repeated direct observations in 28 K-5 grade classrooms. Results from this study indicated that praise rates were low, ranging from 0.38-0.75 praise statements per minute, and consistent with the findings by White (1975), there was a decreasing trend in the use of praise as the grade level increased. Floress et al. (2018) also found a significant negative relationship between students' off-task behavior and teacher use of behavior-specific praise, suggesting that teachers who use more behavior-specific praise may experience less off-task student behavior in their classrooms. However, data on praise rates were only collected during whole group lessons, in elementary grade classrooms, and data on reprimand rates were not captured, so no comparison between the number of positive to negative interactions could be made.

To increase teachers' use of praise and the frequency of positive teacher-student interactions, several prior studies recommended maintaining a specific ratio of praise to reprimand statements (Gottman et al., 1998; Flora et al., 2000; Latham, 1997). The suggestion to use a specific ratio of positive to negative interactions may have originated from studies conducted by John Gottman (Sabey et al., 2019). Since the 1970s, Gottman conducted research studies to determine the factors that led to stable marriages and those that led to divorce. In a study published in 1998, Gottman et al. recorded 130 newlywed couples discussing topics that were identified as sources of ongoing disagreement for 15 min. Gottman coded participants' affect (e.g., positive, negative, or, neutral) based on

their facial expressions, tone of voice, and speech content. He found that couples with a ratio of five positive interactions for every one negative interaction during conflict resolution were more likely to have stable marriages nine years later (Gottman et al., 1998).

Although the original Gottman studies focused on interactions between spouses instead of teachers and students, Flora (2000) recommended this five to one ratio of positive to negative interactions, terming it as the "golden ratio." More than 20 years later, the recommendation of maintaining a ratio of five praise statements for every reprimand or critical statement remains commonly recommended in teacher prep programs and professional development (Cook et al., 2017; Sabey et al., 2019; Sprick et al., 2008), however the ratio recommended varies. Flora and colleagues (2000) suggested that parents and teachers provide five praise statements for every one reprimand or criticism, citing research done by Hart and Risley (1995) and Gottman (1994) as the basis for this recommendation. However, Pisacreta and colleagues (2011) found a 1:1 ratio of praise statements to reprimands was sufficient in decreasing disruptive student behavior in general education classroom to an acceptable level. On the other hand, in an article written by Latham (1997) describing critical skills that teachers should have, Latham suggested teachers maintain a ratio of eight praise statements for every one reprimand to create a noncoercive environment that encouraged appropriate student behavior.

In light of these inconsistencies, Sabey and colleagues (2019) described the literature on and history of praise to analyze if specific ratios of praise to reprimand statements are more effective in decreasing student problem behavior than others. Researchers reported that while previous research supported the use of higher praise to

reprimand ratios to decrease problem behavior, increase appropriate behavior, and improve relationships between teachers and students, the existing body of evidence does not support the notion that a specific ratio is "magic" or optimally effective in producing positive outcomes. This is a significant finding because specific ratios are commonly recommended for use in the practical setting (Cook et al., 2017; Sabey et al., 2019; Sprick et al., 2008).

Sabey et al. (2019) suggested that future research describe how often praise is naturally occurring in the classroom setting, collect data on the impact of various praise to reprimand ratios on student behavior, and determine which settings and populations may require higher ratios to produce meaningful behavior change. However, the existing literature documenting the naturally occurring rates of teacher praise, teacher reprimand, and student problem behavior is dated (Nafpaktitis et al., 1985; White, 1975;). Of the more recent research, one study examined academic feedback exclusively (Burnett & Mandel, 2010), one only collected data during whole-group instruction, in elementary classrooms, on praise but not on reprimands (Floress et al.,2018), and another only conducted one direct observation in each participating classroom (Reinke et al., 2013). To the best of our knowledge, to date there is not been any research done to examine the naturally occurring rates of paraprofessional praise and reprimands.

Given these gaps in the literature on the "golden ratio" in education, the purpose of this study is to examine the naturally occurring rates of praise in K-5 grade general education classrooms within a school implementing SW-PBIS with fidelity. To extend the research by Floress et al. (2018), we will collect praise data from teachers and paraprofessionals with prior training in basic classroom management strategies consistent

with the core components of SW-PBIS Tier 1 supports. This study will also expand on recommendations given by Sabey and colleagues (2019) to document the relationship between specific teacher praise to reprimands ratios and student off-task and disruptive behavior to determine how often the 5:1 ratio praise to reprimand is achieved naturally. We will also explore the relationship between the praise to reprimand ratio and student problem behavior. Finally, this study will add to the research done by Reinke and colleagues (2013) regarding teachers' and students' perceptions of the classroom climate and how this perception relates to teacher praise and reprimands and student problem behavior.

Method

Participants

Participants included four general education teachers, four paraprofessionals, and 78 students at a public charter school in the intermountain west. Teachers and paraprofessionals from each grade level (K-5) were invited to participate and given an opportunity to review and sign an informed consent. Special education teachers were not included in this study since all students on an IEP or 504 plan receive instruction in the general education classrooms. Due to the school having an inclusive model for special education, there are no classrooms that are exclusively special education. Of the teachers invited to participate, staff in grades kindergarten, third, fourth, and fifth signed informed consents and were included in this study. Years of experience teaching ranged from less than one year to over 20 years. Teachers and paraprofessionals were not excluded based on current rates of praise, reprimands, redirections, or student problem behavior in the classroom. All teachers and paraprofessionals had received some training in school-wide

positive behavioral interventions and supports (SWPBIS). During the 2019-2020 school year, the school provided training related to Tier 1 PBIS classroom management topics such as an introduction to PBIS, effective routines and procedures, teaching behavioral expectations, effective use of praise, and the schoolwide reinforcement system (i.e., token economy), bullying prevention, and how to respond to problem behavior. During the 2020-2021 school year, school staff received over three hours of training in the topics listed above. Finally, in the 2021-2022 school year, before the start of data collection, staff received training in teaching routines and expectations, token economies, and strategies to prevent problem behavior.

Student participants included students in grades kindergarten, third, fourth, and fifth. Because student data were collected anonymously, individual data on student demographics is not available. However, across the student body, 28% of qualify for free or reduced lunch, 1% of students are on a 504 plan, and 14% of students are on an IEP. 4% of students receive Tier 2 behavioral support and 1% of students are on a Tier 3 behavior intervention plan.

Setting

The study was conducted at a K-8 grade charter school in the intermountain west. This school has nine general education classrooms, one for each grade. Class sizes range from 15 - 20 students and all classrooms have at least one assigned paraprofessional who works with the classroom teacher to provide instruction.

The school has a documented commitment to implementing SWPBIS as evident by the school charter, general structure of systems within the school, and Tiered Fidelity Inventory (TFI) scores. This school has been implementing SWPBIS for five years. Over

the past five years, the TFI has been completed at this school five times. The TFI is a validated tool used to measure the extent to which SWPBIS is being implemented. This tool lists the core components of SWPBIS for each Tier 1, Tier 2, and Tier 3 (Algozzine, 2014). The most recent TFI was conducted in the fall of 2021. These data indicate that this school is implementing 90% of the Tier 1 core components of SWPBIS, 82.69% of the Tier 2 core components, and 69.12% of the Tier 3 core components. Acknowledgment of appropriate behavior (e.g., praise, public recognition, token economy), is considered a Tier 1 core component. The TFI data indicate that there is an effective SWPBIS system in place at this school.

Observations were conducted in general education classrooms or small pull-out spaces during teacher or staff-led instructional times, including both whole-class instruction and small group instruction, when three or more students were present. Teacher-led instruction was defined as a time when the teacher was providing information on a core subject (e.g., math, reading, social studies, science), standing (or sitting) in front of the class or small group, and expecting the students to face and actively listen or engage in the lesson (Floress, 2017).

Measurement

Student and teacher data was collected via a recorded broadcast of the lecture. The observer watched the video recording twice. During the first viewing, the observer collected data on the teacher and during the second viewing, the observer collected data on the students. This enabled the observer to collect data on both student and teacher behavior for each block of time that observations are conducted. The data collection for paraprofessional behavior was conducted following the same procedures as data

collection for the teacher behavior. Data for teachers and paraprofessionals were not collected simultaneously.

Teacher Behavior

Praise Statements. Praise was defined as the teacher or paraprofessional directing positive gestures, motions, or statements towards a student or group of students to express a favorable judgment of an activity, product, or behavior of a student. Praise also included the teacher or paraprofessional stating what the student or group of students was doing well. Examples of positive gestures or motions that were counted as praise include high fives, thumbs up, fist bumps, providing the school-wide reinforcer, and silent applauds. Praise did not include pointing at a student, waving a student over, pointing at academic material, or nodding their head. Examples of positive statements included stating "great" or "awesome," "nice job," "perfect", and "congratulations on…". Praise did not include neutral statements such as "correct," "yeah," "yes," and "thanks" when not paired with a positive gesture, facial expression, or enthusiastic tone.

If praise was paired with a gesture or the providing of the school-wide reinforcer, this was counted as one instance of praise. Similarly, if the teacher or paraprofessional provides more than one praise to a student or a group of students at a time, meaning the praise was delivered within 3s of each other to the same student or group of students, this was counted as a single instance of praise. If the teacher praised two or more students as a group, then this only counted as one instance of praise. For example, If the teacher praises student one, 2s pass, and then the teacher praises student one again, this would count as a single instance of praise. Similarly, if a teacher states, "table two is doing great taking notes today. All of you get a point," this would count as one praise statement

regardless of how many students are sitting at table two. However, if the teacher provides a praise statement to one student or group of students and then another praise statement to a different student or different group of students, this counted as two separate praise statements, even if they are within 3s of one another. Similarly, if the teacher praises two or more students and says the name of each student this counted as two praise statements.

Reprimands. Reprimands are defined as gestures or verbal comments made by the teacher or paraprofessional that indicate disapproval of social behavior, such as scolding or threatening (Caldarella, et, al.2019). This includes "no," "don't," or "stop" instructions. This also includes telling the student that they need to take a break or stating the student's name in response to problem behavior without providing any information about what the student should be doing. This did not include statements given as academic feedback or in response to a direct question, or initial instructions. Reprimands delivered within 3s of each other to the same student or group of students were counted as one reprimand. Gestural reprimands include shaking head "no", stop sign with hand, sighs, rolling eyes, and snapping. This does not include, putting the index finger up to lips, saying "shhh," or pointing at students' work. If a verbal reprimand was paired with a gestural reprimand, this was counted as one instance of reprimand. If the teacher reprimands two or more students as a group, then this only counted as one reprimand. However, if the teacher provided a reprimand to one student or group of students, and then another reprimand to a different student or different group of students, this counted as two separate reprimands, even if they are within 3s of one another. Similarly, if the

teacher reprimands two or more students and says the name of each student this counted as two reprimands.

Redirection. During previous professional development training, staff was instructed to use redirections instead of reprimands to respond to problem behavior in the classroom. Since SWPBIS has been implemented at this school, staff have received additional feedback and coaching on using redirections instead of reprimands. Due to this training and support, it was suspected that reprimand rates would be low and staff would most often respond to problem behavior by using redirection. Data on both academic and behavioral redirections were collected to capture the rate at which teachers and paraprofessionals responded to problem behavior and incorrect academic responses. An instance of academic redirection was defined as each time the teacher responds to an incorrect answer by stating or gesturing to what the student should do to answer correctly. Examples include, the teacher stating the correct answer, pointing or gesturing towards a resource to help find the correct answer, stating “try again,” “no”, or “don’t get tricked.” This did not include any prompts that were given before a student answered, answers to direct questions asked by the student, or follow-up questions presented by the teacher if the student answered correctly. If a verbal academic redirection was paired with a gestural academic redirection this was counted as one instance of academic redirection. Similarly, if the teacher or paraprofessional provided more than one academic redirection to a student or a group of students at a time, meaning the redirections were delivered within 3s of each other to the same student or group of students, this was counted as a single instance of academic redirection. If the teacher redirected two or more students as a group, this counted as one instance of redirection. However, if the teacher provided an

academic redirection to one student or group of students and then another academic redirection to a different student or different group of students, this counted as two separate academic redirections, even if they are within 3s of one another. Similarly, if the teacher provided an academic redirection to two or more students and said the name of each student, this counted as two academic redirections.

An instance of behavioral redirection was defined as the teacher stating or gesturing what the student should be doing rather than what they should not be doing. This includes staff pointing at what the student should be focusing on, making the "shhh" sound, putting index finger up to lips, stating "eyes on me," and "voices off." This does not include staff's initial instructions or pre-corrections before a task beginning or during a transition. If a verbal behavioral redirection was paired with a gestural behavioral redirection this counted as one instance of behavioral redirection. Similarly, if the teacher or paraprofessional provided more than one behavioral redirection to a student or a group of students at a time, meaning the redirections were delivered within 3s of each other to the same student or group of students, this counted as a single instance of behavioral redirection. If the teacher redirects two or more students as a group, then this only counted as one instance of redirection. However, if the teacher provided a behavioral redirection to one student or group of students and then another behavioral redirection to a different student or different group of students, this counted as two separate academic redirections, even if they were within 3s of one another. Similarly, if the teacher provided an academic redirection to two or more students and said the name of each student this counted as two academic redirections.

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Frequency data on teacher praise, reprimand, and redirection was gathered using a paper and pencil datasheet through direct observation via recorded broadcasts of the lesson. These data were then used to calculate praise-to-reprimand proportions and praise-to-redirection proportions. Praise-to-reprimand proportions were calculated by adding together praise and reprimand frequencies and then dividing the praise frequency by this sum. Praise-to-redirection proportions were calculated by adding together praise and redirection frequencies, then dividing the praise frequency by this sum. Data were also examined by deriving rate per minute. Rate per minute was calculated by separately dividing the frequency of praise statements, reprimands, and redirections by the duration of the observation.

Four 10 - 40 min observations were conducted for each general education classroom during teacher or staff-led instructional times, including both whole-class instruction and small group instruction, when three or more students were present. The teacher and the paraprofessional were observed separately within these four observations. Observations occurred one to four times per week. The observer started a stopwatch at the start of data collection and stopped the timer once the class or group was instructed to transition to a new activity or independent work time begins. The duration of the observation was recorded in minutes and seconds. Staff data was collected during the same lessons in which student observations took place.

Observers also collect anecdotal data on the classroom as a whole while viewing the recorded lecture. The observer made note of student and teacher affect, such as smiling, laughing, frowning, scowling, etc. The observer also noted if students were

given frequent opportunities to respond and the general level of engagement in the classroom.

Student Behavior

Off Task Behavior. Off-task behavior was defined as "the child looking away from desk work or looking away from the teacher instruction (e.g., smartboard or teacher themselves) for more than 5s" when visual information was being presented or looking away for more than 5s after the teacher had explicitly stated that students needed to look at either the teacher or their desk work. Off-task behavior also included any time the student looked away from teacher instruction or desk work and the teacher provided a redirection. If the teacher provided a redirection for off-task behavior, this counted as off-task even if the off-task behavior lasted less than 5s. Off-task behavior included staring at the ceiling, floor, wall, or camera, looking at a visitor in the class, or looking at an item on or in their desk/table when the use of that item is not part of the academic task. This did not include the student looking away from teacher instruction or desk work before the teacher began to present visual material, rubbing their eyes, scratching an itch, or adjusting clothing. Off-task behavior also did not include a student not responding to questions or prompts given by the teacher unless the teacher redirected the student.

Disruptive Behavior. Disruptive behavior was defined as a behavior that inhibited that child or others in the classroom from meeting the current work expectation. A behavior was considered to inhibit students from meeting the current work expectation if the behavior results in the teacher redirecting the student or if it results in other students looking away from the material being presented to look at the student. This also included non-compliant behaviors in which "the child does not attempt to perform or stops

attempting to perform the requested behavior within 5-sec following the request, shakes their head ‘no,’ verbally refuses, or touches something the child was told not to touch (Jacobs et al., 2000).” This included whining, crying, yelling, property destruction, aggressive behavior, off-topic comments or vocalizations, self-stimulation, talking out of order, being out of the area, laying/rolling on the floor, or putting hands on a peer or teacher during instruction. This did not include laughing at a joke made by the teacher, comments or vocalizations that are related to the lesson and not redirected, or behavior that lasted less than 5s and did not result in a redirection or peers looking away from the lesson.

(Floress et al., 2019, p. 415).

Measures for student observations were similar to those used by Floress et al. (2019) to measure class-wide disruptive and off-task behavior. Off-task and disruptive student behavior was measured using a 10-s partial interval recording. Observations were rotated across all students and each student was observed for 30-s at a time. The data from previous research has indicated that this method of data collection is a valid and reliable means for measuring more covert, class-wide problem behavior, such as off-task behavior (Briesch et al., 2015).

In the previous study conducted by Floress et al. (2019), ten students from the classroom were randomly selected for each five to ten min observation, thus the data was not representative of all students in the class. In the current study, the observer rotated observations across all students in the classroom to obtain data that is more likely to accurately represent all students.

Starting with the child closest to the door, the observer collected data on each student for 30- s before moving on to the next student. After each 30-s interval, there was a 10-s period in which no data collection took place before observations resumed on the next student. The order that students were observed was based on the seating arrangement in the classroom and was determined before the observation occurred. The observer used Interval Timer-HITT Training, a timer application on their phone, to prompt 10-s intervals. The timer on this application vibrated and changed color every 10-s to provide a sensory and visual cue to the observer. The application was silent, so only the observer was aware of the changes in intervals. The percentage of intervals with off-task behavior and disruptive behavior was calculated by dividing the number of total intervals by the number of intervals with off-task or disruptive behavior.

To measure students reported perceptions of school climate the School Climate Survey created by The Center on Positive Interventions and Supports was filled out by students. Students at this Charter School fill out a climate survey each year during school hours. The survey for grades K-5 has eleven questions in which students responded to a positive statement, such as “I like school,” or “I feel safe at school,” by selecting, “never,” “sometimes,” “often,” or “always,” on a four-point Likert scale. To score this survey, “never” was coded as zero points, “sometimes” was coded as one point, “often” was coded as two points, and “always” was coded as three points. Surveys were then scored by diving the number of points coded by the total number of points available, which was typically 33, until a question was skipped, then multiplying by 100 to get a percentage. The average school climate survey score for each grade level was calculated by adding together all of the percentages for that grade level and then dividing by the

total number of surveys that were completed for that grade level. Correlations between average scores on the School Climate Survey and grade level praise-to-reprimand proportions were examined.

Data Analysis

Measures of teacher behavior included praise rates, reprimand rates, redirection rates, the proportion of praise-to-redirections, and the proportion of praise-to-reprimands. Three correlation analyses were conducted, the correlation between teacher praise-to-reprimand proportions and student problem behavior, the correlation between teacher praise-to-redirection proportions and problem behavior, and the correlation between teacher praise-to-reprimand proportions and student scores of the school climate survey. The teacher praise-to-reprimand proportion and the percentage of intervals in which student problem behavior occurred (i.e., off-task and disruptive behavior) for each observation were entered into a Microsoft Excel spreadsheet. To determine the relationship between these two variables the Pearson product-moment correlation was calculated using the correlation function in Microsoft Excel. The strength of correlation was assessed using the conventions set forth by Cohen (1988). A correlation coefficient of .10 was considered a small association, a correlation coefficient of .30 was considered a moderate association, and a correlation coefficient of .50 was considered a large association (Cohen, 1988). Similarly, the relationship between teacher praise-to-redirection proportions and the percentage of intervals in which student problem behavior occurred was calculated using Microsoft Excel and assessed using the standards described by Cohen (1988). A Pearson Product correlation was also conducted using Microsoft excel to examine the relationship between the proportion of teacher praise-to-

reprimand statements for each grade level and scores of school climate surveys completed by students in that grade. A power analysis was also be conducted to determine if the sample size was large enough to make claims regarding the correlation between scores on the School Climate Survey and grade level praise rates.

To determine if the teacher praise-to-reprimand proportion was higher in lower grade levels than in higher grade levels, teacher praise-to-reprimand proportions were graphed by grade and examined to determine if there was a decreasing trend. A power analysis was also conducted to determine if the sample size was large enough to make claims regarding the correlation between teacher praise-to-reprimand proportions and grade level.

To determine if a 5:1 praise-to-reprimand ratio is related to lower percentages of intervals with student problem behavior, the mean percentage of intervals in which student problem behavior occurred during observations in which the praise-to-reprimand/redirection ratio was 5:1 or higher was compared to the mean percentage of intervals in which student problem behavior occurred during observations in which the praise-to-reprimand/redirection ratio was less than 5:1. To obtain the mean percentage of intervals in which student problem behavior occurred during observations in which the teacher praise-to-reprimand ratio was 5:1 or higher, the observations in which the teacher praise-to-reprimand ratio was 5:1 or higher were examined. The percentage of intervals in which student problem behavior occurred for each of these observations was added together and divided by the total number of observations in which the teacher praise-to-reprimand ratio was 5:1 or higher. To obtain the mean percentage of intervals in which student problem behavior occurred during observations in which the teacher praise-to-

reprimand ratio was less than 5:1, the observations in which the teacher praise-to-reprimand ratio was less than 5:1 were examined. The percentage of intervals in which student problem behavior occurred for each of these observations was added together and divided by the total number of observations in which the teacher praise-to-reprimand ratio was less than 5:1. A power analysis was also be conducted to determine if the sample size is large enough to make claims regarding the correlation between staff praise-to-reprimand ratios and student problem behavior, as well as the correlation between the staff praise-to-redirection ratio and student problem behavior.

Procedures

Before beginning any procedures, the student researcher got approval for this research study from the Institutional Review Board. Once approval was obtained the procedures described below were implemented. All teachers and paraprofessionals of kindergarten through fifth grade, that work at this charter school were invited to participate in this study. The student researcher sent out informed consent forms to all potential staff participants three weeks before the start of the study and sent a follow-up e-mail one week later if there was no response. Once informed consent was obtained from teachers, opt-out informed consent was sent to all the parents/guardians that had children who received instruction from the participating staff member. All students at this Charter School who received instruction from participating staff were be included in this study unless the parent or guardian signed the opt-out informed consent. The student researcher sent the opt-out informed consent forms to the parents/guardians of all potential student participants in an e-mail two weeks before the start of the study. Paper copies of the opt-out form were also be sent home with students. Participants could opt-

out or withdraw from the study at any time, without penalty. One week after sending out the opt-out form and before conducting classroom observations, adult participants were asked by the student researcher to complete a questionnaire regarding their demographic information, including racial background, gender identity, years of experience teaching, and level of education and training. These data were not shared with others outside the research team.

To reduce reactivity, participants were not explicitly told that the observer would be collecting data on praise, reprimand, and redirection. Participants were trained in evidence-based classroom management strategies at the start of the school year but did not receive additional directions regarding praise in relation to the observations for this study. Participants were informed that the observer would be collecting data on classroom management strategies used during instruction and student behavior. Multiple observations were conducted, and the student researcher is an individual that commonly visits and observes in classrooms. Members of a school support team conduct classroom observations regularly at this school, so having an observer in the room was not unusual for the teachers or students.

The student researcher collected teacher, paraprofessional, and student data only during times of teacher or paraprofessional led instruction. Therefore, observers began collecting data when the teacher or paraprofessional was at the front of the class or group, and students were expected to be looking at and listening to the teacher or paraprofessional. Data collection stopped when students transitioned to a new activity or independent work began. Teachers and paraprofessionals were asked to conduct their classroom lessons as they normally would and were not prompted to teach at a certain

time or for a specific duration. No feedback regarding these observations was provided to teachers or paraprofessionals throughout the study.

Students will fill out the school climate survey during the third trimester as they have typically done at this charter school. The school climate survey will be completed during school hours and all students will be asked to complete this survey unless parents signed an opt-out form.

Interobserver Agreement (IOA)

A second, independent observer collected data during at least 25% of observations, either live or via video recording. IOA for teacher data was calculated using the total count method (Cooper et al., 2014). IOA was calculated by dividing the smaller rate by the larger rate, then multiplying this quotient by 100 to obtain a percentage of agreement. IOA for student behavior was calculated using the point-by-point agreement method (Cooper et al., 2014). An agreement was defined as an interval in which both the primary observer and the second independent observer indicate that problem behavior has occurred or has not occurred. A disagreement was defined as an interval in which one observer indicated that problem behavior did occur, while the other observer indicated that problem behavior did not occur. IOA was calculated using the point-by-point agreement method (Cooper et al., 2014) where the number of agreements was divided by the total number of intervals. This quotient was then multiplied by 100 to obtain the point-by-point IOA.

Results

A total of 16 teacher observations and 16 student observations were completed in four classrooms totaling 368 min (6.13 hr) of teacher observation and 357 min (5.95hr) of

student observations. Although teacher observations and student observations were conducted concurrently via recorded broadcast, student observations typically began 1-2 minutes into the teacher observation due to adjustments to the broadcast system that were required to see all students. The average observation duration was 22.66 min. This was calculated by adding the duration of each student and teacher observation together and then dividing by the total number of observations. The mean duration of observations per grade level was 92.06 (range 79.92-104.72 min). The average observation duration per grade was calculated by adding together the duration of each observation in a specific grade and then dividing by the total number of observations in that grade. The mean observation duration across grade levels was then calculated by adding the average duration per grade together and then dividing by the total number of grades.

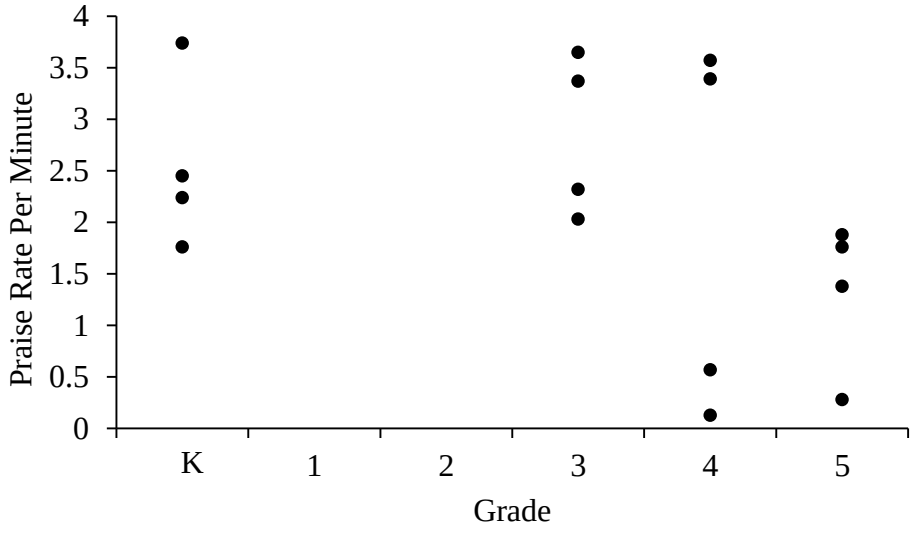
IOA was collected during 50% of the teacher observations and 50% of the student observations Across all classrooms, IOA for teacher praise frequency averaged 90%, with a range from 81%-94%. The average IOA for teacher reprimand frequency was 63%, with a range from 33%-80%. The average IOA for teacher academic redirection frequency was 71%, with a range from 0%-100%. The average IOA for teacher behavioral redirection frequency was 79%, with a range from 60%-95%. The average IOA for overall teacher redirections was 85%, with a range from 70%-92%. The average IOA for teacher praise, reprimand, academic redirection, behavioral redirection, and overall redirection were calculated by entering all IOA data into a Microsoft Excel Spreadsheet and using the average function for each of the four categories. IOA for intervals of off-task or disruptive student behavior was 80% (range 75- 85%).

Praise Rate

Figure 1 displays the staff praise rate per minute for each of the four observations by grade level. In kindergarten, observed praise rates were 1.76, 2.24, 2.45, and 3.74 per min across the four observations. The average praise rate per minute was 2.55, with a range of 1.76-3.74. In third grade, observed praise rates were 2.32, 3.37, 2.03, and 3.65 per min across the four observations. The average praise rate per minute was 2.84, with a range of 2.03-3.65. In fourth grade, observed praise rates were 3.57, 3.39, 0.13, and 0.57 per min across the four observations. The average praise rate per minute was 1.92 with a range of 0.13-5.57. In fifth grade, observed praise rates were 1.76, 1.88, 1.38, and 0.28 per min across the four observations. The average praise rate per minute was 1.33 with a range of 0.28-1.88.

Figure 1

Staff Praise Rate by Grade



The average praise rate across all staff in all classrooms was 2.16 per min. This was calculated by adding together the praise rate from each staff observation, including

both teachers and paraprofessionals, and then dividing by the total number of staff observations. Teachers provided an average of 2.54 praise statements per minute, which was calculated by adding together the praise rate for each teacher observation, then dividing by the total number of teacher observations. Paraprofessionals provided an average of 1.78 praise statements per minute. This was calculated by adding together the praise rate for each of the paraprofessional observations and then dividing by the total number of paraprofessional observations.

It should be noted that for most of the grades observed, the average rate of praise per minute decreased as grade level increased. Fifth grade had the lowest average praise rate per minute, 1.33, and fourth grade had the second-lowest average praise rate per minute, 1.92. While both third grade and kindergarten had higher praise rates than fourth and fifth grade, kindergarten staff provided slightly fewer praise statements per minute than third grade. Kindergarten staff provided an average of 2.55 praise statements per minute and third-grade staff used an average of 2.84 praise statements per minute. Average praise statements per minute were calculated by adding the praise rates from each observation and then dividing by the total number of observations for that grade. This decrease in praise rate as the grade level increases I consistent with previous research.

A correlation analysis was conducted to further examine the relationship between grade level and praise rates per minute. Grade level and praise rates per minute for each observation were entered into a Microsoft Excel spreadsheet. To determine the relationship between these two variables the Pearson product-moment correlation was calculated using the correlation function in Microsoft Excel. Based on the guidelines set

by Cohen (1988), the data from the current study show a moderate association between grade level and praise rates ($r = 0.36$, $p = 0.17$). A power analysis was conducted using G* Power, and statistical power within the data set was low at 0.08.

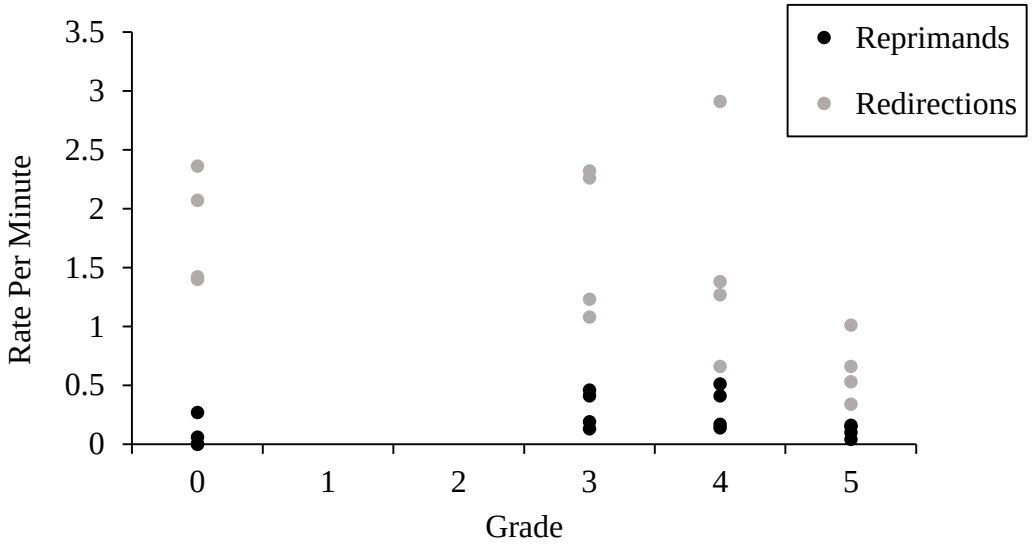
Corrective Statement Rates

Figure 2 displays the staff reprimand and redirection rate per min for each of the four observations by grade level. In kindergarten, observed reprimand rates were 0, 0, 0.06, and 0.27 per min across the four observations. The average reprimand rate per minute was 0.08, with a range of 0-0.27. The average reprimand rate was calculated by adding the rate per min for each observation in that specific grade and then dividing by the total number of observations in that grade. The observed redirection rates per min for kindergarten were 1.42, 2.07, 2.36, and 1.4 across the four observations. The average redirection rate per min was 2.06, with a range of 1.4-2.36. The average redirection rate per min was calculated by adding together both the behavioral and academic redirections for each observation in a specific grade level and then dividing by the total number of observations in that grade. In third grade, observed reprimand rates were 0.19, 0.13, 0.46, and 0.41 per minute across the four observations. The average reprimand rate per minute was 0.3, with a range of 0.13-0.46. The observed redirection rates for third grade were 1.08, 1.23, 2.26, and 2.32 per min across the four observations. The average redirection rate per min was 1.72, with a range from 1.08-2.32. In fourth grade, observed reprimand rates were 0.41, 0.14, 0.51, and 0.17 per min across the four observations. The average reprimand rate per min was 0.31, with a range from 0.14-0.51. The observed redirection rates for fourth grade were 1.38, 2.91, 1.27, and 0.66 per min across the four observations. The average redirection rate per min was 1.56, with a range from 0.66-2.91.

In fifth grade, observed reprimand rates were 0.1, 0.04, 0.16, and 0.15 per min across the four observations. The average reprimand rate was 0.11 per min, with a range from 0.04-0.16. The observed redirection rates in fifth grade were 1.01, 0.66, 0.53, and 0.34 per min across the four observations. The average redirection rate was 0.64 per min, with a range from 0.34-1.01.

Figure 2

Staff Reprimand and Redirection Rate by Grade

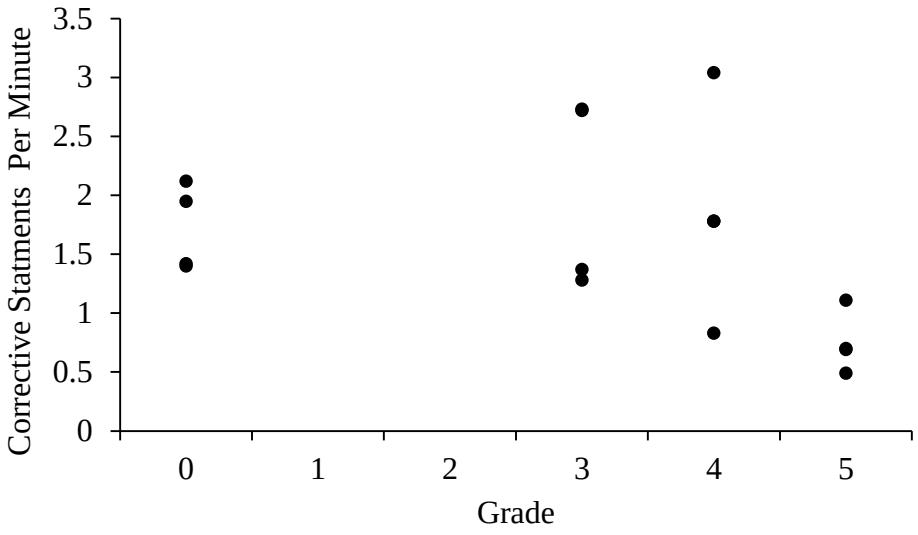


To examine the rate at which teachers were providing corrective feedback overall, reprimands and redirections were combined and classified as corrective statements. Figure 3 displays the staff corrective statement rate per minute for each of the four observations by grade level. In kindergarten, corrective statement rates were 1.42, 2.07, 1.95, and 1.4 per min across the four observations. The average corrective statement rate was 1.72 per min, with a range from 1.4-2.12. For third grade, corrective statement rates were 1.28, 1.37, 2.72, and 2.73 per min across the four observations. The average corrective statement rate was 2.03, with a range from 1.28-2.73. In fourth grade,

corrective statement rates were 1.78, 3.04, 1.78, and 0.83 per min across the four observations. The average corrective statement rate was 1.86 per min, with a range from 0.83-3.04. In fifth grade, corrective statement rates were 1.11, 0.7, 0.69, and 0.49 per min across the four observations. The average corrective statement rate was 0.75 per min with a range from 0.49-1.11.

Figure 3

Staff Corrective Statement Rate by Grade



Praise-to-Corrective Statement Proportions

Figure 4 displays the relationship between staff praise-to-reprimand proportions and the percentage of intervals with student problem behavior, as well as the relationship between staff praise-to-redirection statements and the percentage of intervals with student problem behavior. Results for the Person Product correlation analysis indicate that there is almost no correlation between the proportion of staff praise-to-reprimand statements and the percentage of intervals with student problem behavior. ($r = 0.09$, $p = 0.73$). The correlation between the proportion of staff praise-to-redirection statements and the

percentage of intervals with student problem behavior also shows a small association with little to no correlation ($r = 0.17$, $p = 0.54$).

Figure 4

Relationship Between Staff Praise-to-Reprimand and Praise-to-Redirection Proportions and Student Problem Behavior

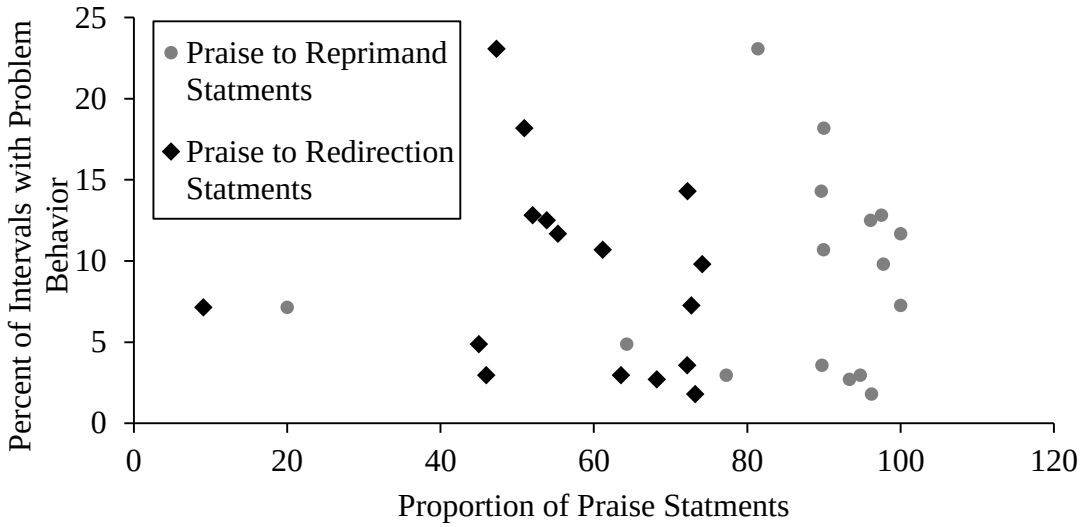
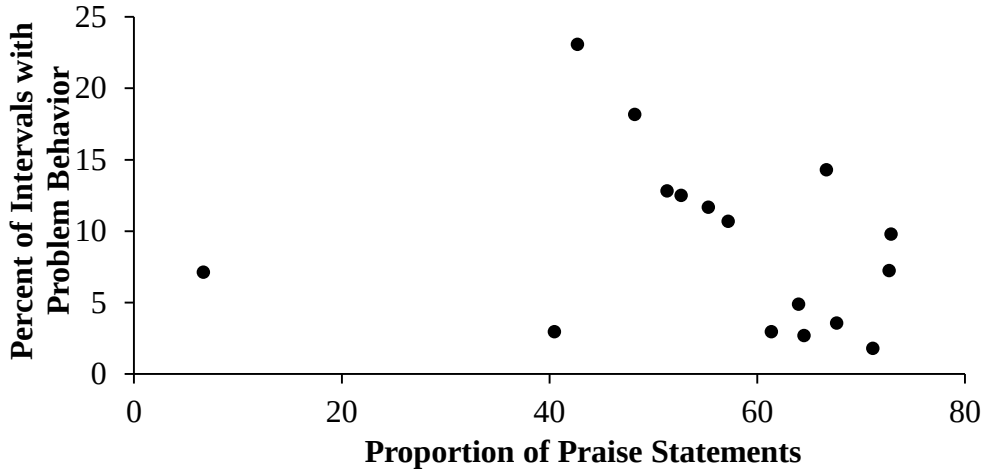


Figure 5 displays the relationship between staff praise-to-corrective statements, which include reprimands and redirections, and the percentage of intervals with student problem behavior. While the correlation between the proportion of staff praise to corrective statements is higher than the previous correlations, ($r = 0.23$, $p = 0.21$), the association is still small, and the correlation is not statistically significant.

Figure 5

Relationship Between Staff Praise-to-Corrective Statement Proportions and Student Problem Behavior



5:1 Ratio

Of the 16 observations conducted, the 5:1 praise-to-reprimand ratio was met or exceeded in 12 of the observations (75% of observations). For these 12 observations, problem behavior occurred during an average of 9.02% of intervals (M = 9.02, SD = 5.31). For the four observations in which the 5:1 praise to reprimand ratio was not met, problem behavior occurred on an average of 9.52% of intervals (M = 9.52, SD = 9.2). However, if reprimands and redirections are combined and classified as corrective statements, and the ratio between praise and corrective statements is analyzed, the 5:1 ratio was not met in any of the 16 staff observations. If redirections are counted as reprimands, these data do not indicate that there is a specific praise-to-reprimand ratio that is related to lower levels of problem behavior.

School Climate Survey

As depicted in Figure 6, there was a large association between the average teacher praise-to-reprimand proportion for a specific grade level and student scores on the Center on Positive Behavior Interventions and Supports School Climate Survey (Center on PBIS, 2022) for that same grade level. (r = 0.86, p = 0.14). A power analysis was conducted using G* Power. Due to the small number of grade levels examined, statistical power within in data set was low, with power at 0.45. This suggests that students included in this study who were in classrooms with higher teacher praise-to-reprimand ratios generally had a more positive perception of the school climate. However, claims cannot be made about the relationship between praise-to-reprimand proportions and perception of school climate in the broader population. If redirections and reprimands are combined and classified as corrective statements, then there was little to no correlation between praise-to-corrective statement proportions and student scores on the school climate survey *(r = 0.28, p = 0.72).*

Figure 6

Teacher Praise-to-Reprimand Proportion and Student School Climate Survey Score

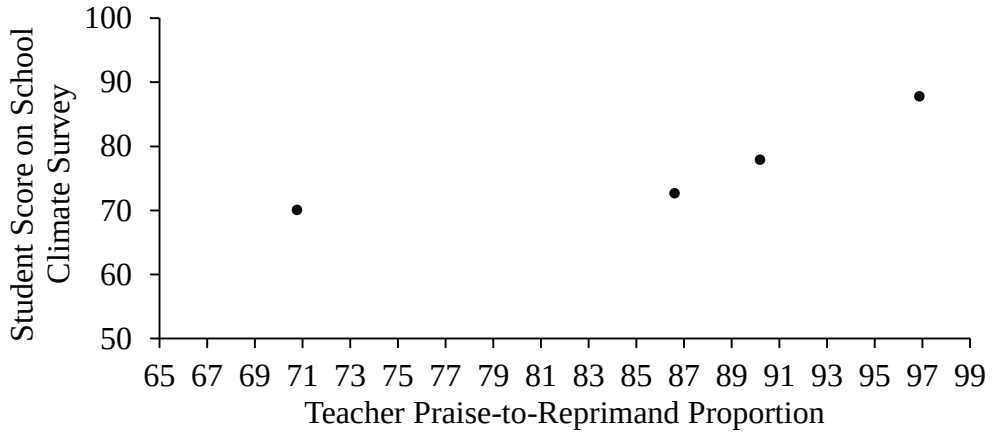


Table 1 summarizes the data described above. Kindergarten had an average staff praise-to-reprimand proportion of 96.55%, the average proportion in third grade was 91.27%, the average proportion in fourth grade was 85.71%, and the average proportion in fifth grade was 91.67%. There was little to no correlation between staff praise-to-reprimand proportion and intervals with problem behavior ($r = 0.09$, $p = 0.73$). Kindergarten had an average staff praise-to-redirection proportion of 57.14%, the average proportion in third grade was 63.79%, the average proportion in fourth grade was 55.87%, and the average proportion in fifth grade was 66.33%. There was little to no correlation between staff praise-to-redirection proportions and intervals with student problem behavior ($r = 0.17$, $p = 0.54$). The average staff praise-to-corrective statement proportion in kindergarten was 56%, the average proportion in third grade was 60.12%, the average proportion in fourth grade was 34.5%, and the average proportion in fifth grade was 62.56%. There was little correlation between staff praise-to-corrective statement proportions and intervals with student problem behavior ($r = 0.23$, $p = 0.21$). The average percentage of intervals with student problem behavior in kindergarten was 12.84%, in third grade, the average percentage was 8.56%, in fourth grade, the average percentage was 5.67%, and in fifth grade, the average percentage was 7.21%.

Table 1
Relationship Between Overall Staff Praise, Reprimand, and Redirection Proportions, and Student Problem Behavior by Grade

Grade	Staff Praise-to-Reprimand Proportion	Staff Praise-to-Redirection Proportion	Staff Praise-to-Corrective Statement Proportion	Percentage of intervals with Student Problem Behavior
K	96.55%	57.14%	56%	12.84
3	91.27%	63.79%	60.12%	8.56
4	85.71%	55.87%	34.5%	5.67
5	91.67%	66.33%	62.56%	7.21
Correlation to Student Problem Behavior	$r = 0.09$ ($p = 0.73$)	*$r = 0.17$ ($p = 0.54$)*	*$r = 0.23$ ($p = 0.21$)*	

Discussion

This study examined the naturally occurring rates of praise in four elementary general education classrooms within a school implementing SWPBIS with fidelity to determine how often the 5:1 praise to reprimand ratio is naturally achieved or exceeded. In addition, this study analyzed the relationship between praise-to-corrective feedback proportions and student problem behavior. Finally, this study explored the relationship between students' perceptions of the classroom climate and teacher praise-to-reprimands proportions. Because contingent teacher praise is commonly recommended for use in classrooms as a means of increasing levels of appropriate behavior and decreasing problem behavior (Hall et al., 1968; Risley, 2005) and is an effective strategy for increasing appropriate behavior (Floress et al. 2017; Fullerton et al., 2009 Sabey et al., 2019), it is important to examine the current rate of praise in general education classrooms, as well as the effect that praise has on student behavior. Data on naturally occurring praise rates in the general education classroom can be useful in informing

professional development and school staff praise rate interventions. These data also provide information to service providers, such as school psychologists and behavior analysts, regarding what they might expect when providing consultation services to staff in the general education classroom.

Praise Rate

Findings indicate that on average across grade levels, staff provided 2.16 praise statements per minute. Teachers provided an average of 2.54 praise statements per minute, while paraprofessionals provided an average of 1.78 praise statements per minute. Praise rates found at this school were higher than those found in previous research, with previous research reporting praise rates from 0.38-0.75 per min (Floress et. al., 2018; White, 1975; Burnett & Mandel, 2010; Reinke et. al., 2013). This school has been implementing SWPBIS for five years and several professional development sessions on classroom management were provided in the five years prior to this study. This school documents fidelity using the PBIS Tired Fidelity Inventory (Algozzine, 2014). In 2017, the school was implementing Tier I core features of SWPBIS with 23.33% fidelity and in 2018 this percentage increased to 86.67%. Tier I Fidelity has remained high since 2018, with the school scoring 91.67% in 2019, 96.67% in 2020, and 90% in 2021. Anecdotally, the researcher speculates that this may have contributed the higher praise rates. Kindergarten and third grade provided similar levels of praise, with kindergarten providing an average of 2.55 praise statements per minute with a range from 1.76 to 3.74, and third grade providing an average of 2.84 praise statements per minute with a range from 2.03 to 3.65. Although praise rates in fourth and fifth grade remained high when compared to previous research, average praise rates were lower compared to the two

younger grades, with fourth grade providing an average of 1.92 praise statements per minute with a range from 0.13 to 3.57 and fifth grade providing an average of 1.33 praise statements per minute with a range from 0.28 to 1.88. These findings contribute to the literature that indicates praise rates decrease as grade level increases (White, 1975; Floress et al., 2018). White (1975) found that praise rates began to decrease around third and fourth grade. The data in this study also indicate a decrease in praise rates beginning in fourth grade. Floress et al. (2018) found an overall decreasing trend in praise rates as grade levels increase, and the data from the current study showed a decreasing trend from third grade to fifth grade. This study also found that overall, more praise statements were provided than reprimand and redirection statements combined, which is inconsistent with the previous literature in which more corrective statements were provided than praise (Reinke et. al., 2013; White, 1975).

Praise-to-Corrective Feedback Proportions and the 5:1 Ratio

This study did not find any significant association between the praise-to-reprimand statements and student problem behavior or praise-to-redirection statements and student problem behavior. However, it should be noted that the praise-to-reprimand proportions were relatively high, with staff reaching or exceeding the 5:1 praise to reprimand ratio in 75% of the observations. In two of the four kindergarten observations, no reprimands were observed. In the observations in which the 5:1 praise-to-reprimand ratio was not achieved, problem behavior occurred in 9.52% of intervals. In observations in which the 5:1 praise-to-reprimand ratio was met or exceeded, slightly less problem behavior occurred, with problem behavior seen in 9.02% of intervals. However, this

difference in problem behavior is minimal and problem behavior remained low across both groups, occurring in an average of 9.14% of intervals across all observations.

School Climate Survey

The most significant association found in this study was the relationship between average teacher praise-to-reprimand proportion for a specific grade level and student scores on the PBIS School Climate Survey for that same grade level ($r = 0.86$, $p = 0.14$) (Center for PBIS, 2022). These results indicate that for the population observed, students in classrooms in which there is a higher praise-to-reprimand proportion had a more positive perception of the school climate. This is significant because school climate affects students' academic achievement, levels of problem behavior, and social-emotional well-being (Charlton, et. al. 2021). Although further research is needed to determine if this relationship between praise-to-reprimand proportions and student perceptions of school climate exists within a larger context, this initial examination is promising.

Limitations

This study provides information about current rates and proportions of praise to corrective statements. This study also describes the relationship between praise, reprimands, redirections, student problem behavior, and student perceptions of school climate. However, there are several limitations. This study involved a small number of participants with only one teacher and one paraprofessional for each grade in which observations occurred. In addition, the sample size in the current study did not include first grade, second grade, middle school, or high school. Due to the small number of participants, the statistical power of the correlations was low, which means that the correlations discussed in this paper may have in part been the result of random chance.

Secondly, IOA for staff reprimand, academic redirection, and behavioral redirection frequency was low, averaging 63% for reprimand frequency, 71% for academic redirection frequency, and 79% for behavioral redirection frequency. However, it should be noted that when behavioral and academic redirections were combined and classified as overall redirections, the IOA increased to 85%, which indicates that observers may have had difficulty distinguishing between academic and behavioral redirections. The low IOA for staff reprimand frequency may indicate that reprimand data is not accurate. This low IOA may have in part been due to the overall low levels of reprimands. If the primary and secondary observers' frequencies varied even by one, this typically resulted in poor IOA.

Third, all participating staff in the study were Caucasian females and the students were predominantly Caucasian at this school. However, many schools across the United States have increasingly diverse student populations. Also, the vast majority of observations in this study had low rates of student problem behavior, with all observations having less than 24% of intervals with problem behavior and high rates of praise, with only 18.17% of observations falling below one praise statement per minute. Therefore, limited information was provided about classrooms with high rates of problem behavior or teachers with low rates of praise. This consistency regarding praise rates could be in part due to the SWPBIS professional development and coaching that was provided to staff before the onset of this study. Other components that may have influenced staff praise rates and student problem behavior include the small class sizes, with all classes observed during this study having 20 or fewer students. This school also uses small group instruction frequently during academic times, especially in lower

grades. Thus, many observations included less than ten students per observation, with only two out of sixteen (12.5%) of the observations including 10 or more students. Similarly, observations only took place during teacher led instruction times. Within the school setting, problem behavior frequently occurs during unstructured times, and students are asked to complete an increasing amount of independent work as they progress through the school day.

Additional limitations to consider include the limited visibility of students at times. During large group observations, some students sat up to twenty feet from the camera, which made it difficult to see where they were looking. Because of this problem behavior may have been underestimated. A student could have been engaging in problem behavior, and it would have not been detected unless it was redirected by the teacher.

Finally, the school climate survey was designed for use in third through fifth grade. Although the survey manual states that it can be used in grades kindergarten through eighth, it states that this is not ideal (Center for PBIS, 2022). This survey has not been validated for grades younger than third grade. This survey was used for the current study because this is the survey that is already utilized within the school system in which observations took place. It should also be noted that there are additional factors that could have contributed to the higher school climate scores in lower grade levels. Lower-grade levels tend to incorporate more preferred activities throughout the school day and task demands are often lower than what is seen in higher grade levels. At this school, there is also a team of people available to support if there is significant problem behavior in the classroom and this additional support could have had an impact on perceptions of the school climate.

Implications for Future Research

Because the current study was conducted in a single school, with only grades kindergarten, third, fourth, and fifth, future research should examine a larger and more diverse population of students and staff, across a variety of schools and grade levels. Due to the low number of participants in each grade, future research should focus on examining natural occurring praise, reprimand, and redirection rates and how these factors relate to student problem behavior and student perceptions of school climate with a larger number of participants in each grade level. The current study included observations only during teacher led instructional times and primarily included small group instruction. Additional research is needed to examine student problem behavior and staff praise, reprimand, and redirection rates during unstructured and independent work times, and large group instruction.

The current study had similar praise rates across all participants. Future research should include staff participants with a wide range of baseline praise rates and conduct observations in both schools implementing SWPBIS and schools in which this framework is not being used. This could allow more inferences to be made regarding the different praise to reprimand ratios. Future research involving a wider range of praise-to-reprimand ratios is needed to determine if there is a specific ratio in which problem behavior dramatically increases or decreases.

Conclusion

In conclusion, staff in this study maintained relatively high praise to reprimand proportions when compared to the previous literature. Staff in lower grade levels, kindergarten, and third grade provided higher rates of praise than staff in higher grade

levels, fourth grade, and fifth grade. These data did not show a significant relationship between student problem behavior and staff praise-to-reprimand proportions. There was also no significant relationship shown between student problem behavior and staff praise-to-redirection proportions. These data did show a correlation between staff praise-to-reprimand ratios, indicating that students may have more positive perceptions of school climate if they are in a classroom in which praise-to-reprimand proportions are high.

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Appendices

Appendix A

Participant Survey

1. What is your age?
    a. 18-27
    b. 28-37
    c. 38-47
    d. 48-57
    e. 58-67
    f. 68 or older

2. What is your gender
    a. Male
    b. Female
    c. nonbinary
    d. Transgender Male
    e. Transgender Female
    f. Rather not say

3. Please specify your ethnicity.
    a. White
    b. Hispanic or Latino
    c. Black or African American
    d. Native American or American Indian
    e. Asian/Pacific Islander
    f. Other

4. What is the highest degree or level of school you have completed? *If currently enrolled, highest degree received.*

    a. High school graduate, diploma or the equivalent (for example: GED)
    b. Some college credit, no degree
    c. Trade/technical/vocational training
    d. Associate degree
    e. Bachelor's degree
    f. Master's degree
    g. Professional degree
    h. Doctorate degree

5. How many years have you been teaching?

a. I am not currently a teacher
b. Under a year
c. 1-5 years
d. 6-10 years
e. 11-15 years
f. 16-20 years
g. Over 20 years

6. How many years have you worked in a school setting?
    a. Under a year
    b. 1-5 years
    c. 6-10 years
    d. 11-15 years
    e. 16-20 years
    f. Over 20 years

Appendix B

Teacher Informed Consent

An Examination of the Golden Ratio in General Education Classrooms

Introduction

You have been selected to participate in a research study conducted by Carrie McLaughlin, a graduate student in the department of Special Education and Rehabilitation at Utah State University. Please read the information below to determine if you would like to participate in this study. If this form is **NOT** returned, then you **WILL BE** giving consent to participate in this study. If you sign and return this form you will be stating that you **DO NOT** want to participate. In order to opt out of participating, you must sign and return this form. **Only return this signed form if you DO NOT want to participate.**

Purpose

The purpose of this research is to examine the naturally occurring classroom management strategies occurring in classroom settings and the relationship between these strategies and student behavior. The relationship between students' perceptions of the school climate and these strategies will also be examined. These data will be collected through classroom observations and student School Climate Survey data. This form includes detailed information on the research to help you decide whether to participate in this study. Please read it carefully and **ask any questions you have before you agree to participate**. Your participation is entirely voluntary.

Procedures

Your participation will involve normal teaching of students. However, at times an additional one to two staff members will be present to collect data on basic classroom management strategies and student problem behavior. Any data collected on students and staff will be confidential and deidentified. The data collected during this study will not be shared with teachers until all data has been collected. Participation in this study is expected to last between 4 to 16 weeks and each classroom will have 3-6 observations throughout the time of the study.

If you agree to participate, researchers will collect in-person observations and live broadcast observations data on the entire class to calculate the rate of problem behavior during whole group or small group instruction. Individual data on student will not be collected. Rather a group total will be calculated preventing the identification of a single student's performance. Data on use of classroom management strategies will also be calculated.

Risks

This is a minimal risk research study. That means that the risks of participating are no more likely or serious than those you encounter in everyday activities. The foreseeable risks or discomforts primarily relate to the potential for distractions or discomfort due to having an additional adult observing in the classroom. To minimize these risks, observers will be adults who are familiar to the students and staff and the observer will sit in an unobtrusive location in the classroom. If you have a bad research-related experience or are injured in any way during your participation, please

contact the principal investigator of this study right away at 435-797-6371 or sarah.pinkelman@usu.edu.

Benefits

Although you will not directly benefit from this study, it has been designed to learn more about the relationship between classroom management strategies, students' problem behavior, and perceptions of school climate

COVID-19 Disclosures

Risks associated with contracting COVID-19 cannot be eliminated. Please carefully consider whether you are comfortable participating in person, particularly if you or someone in your home is at higher risk of serious illness. Because all of the procedures described as part of this study are already occurring as part of the schools normal functioning, participation in this study will not result in more risk than is currently present within the normal functioning of the school. The school that will follow the most current CDC COVID-19 related guidelines. COVID-19 vaccination is strongly encouraged, but not required, for Utah State University employees and students. This means that we cannot guarantee that the people you interact with in this research project are vaccinated. Masking or using other face coverings is strongly encouraged, but not required, for Utah State University employees and students. This means that we cannot guarantee that the people you interact with in this research project will wear a face covering. Researchers and fellow participants are not required to share vaccination information with you or to wear a facial covering, unless this research is not on USU's campus and the site where it will occur does require face coverings or vaccines. **Research participation is always completely voluntary, and you can decline or stop participating at any time.** Below, you will be permitted to *request* certain safety accommodations from the research team, but please know that they are not required to comply. The researchers in this project will follow the most current CDC Covid-19 guidelines.

Confidentiality

The researchers will make every effort to ensure that the information you provide as part of this study remains confidential. Your identity will not be revealed in any publications, presentations, or reports resulting from this research study.

Researchers will not collect any identifying information (e.g., birthdates, addresses, medical information) or the name of staff or students throughout the study. Furthermore, individual behavioral data on your students will not be collected as part of this research study. Rather an aggregate or total of the entire class's performance will be measured. To prevent possible identification participants and will be assigned a number (e.g., Participant 1 or Classroom 2) or pseudonym/false name/alias. We will collect your information through direct observations and video recordings. Online activities always carry a risk of data breach, but we will use systems and processes that minimize breach opportunities. All data will be securely stored in a restricted-access folder on Box.com, an encrypted, cloud-based storage system and/or in a locked drawer in a restricted-access office. This form will be kept for three years, *three is the minimum* after the study is complete, and then it will be destroyed.

It is unlikely, but possible, that others (Utah State University or state or federal officials) may require us to share the information you give us from the study to ensure that the research was conducted safely and appropriately. We will only share your information if law or policy requires

us to do so. If researchers learn that you are abusing or neglecting students, state law requires that researchers report this to the authorities.

Voluntary Participation & Withdrawal

Your participation in this research is completely voluntary. If you agree to participate now and change your mind later, you may withdraw at any time without penalty by contacting the principal investigator Sarah Pinkelman by phone (435-797-6371) or e-mail (sarah.pinkelman@usu.edu) and stating you no longer wish to participate. If you choose to withdraw after we have already collected information about you, all information will be securely destroyed. If you decide not to participate, the services you receive from Bear River Charter School, the researchers, or the Department of Special Education and Rehabilitation at Utah State University will not be affected in any way. The researchers may choose to terminate your participation in this research study if your employment at Bear River Charter School is discontinued prior to or during data collection or if your role at Bear River Charter School changes and you are no longer working with a group of three of more students.

Payment & Costs

Compensation or payments in any form will not be given for participation in this study. Your participation is not expected to incur any additional costs.

Findings & Future Participation

Your information identified or de-identified, will not be used or distributed for future research studies, even if all of the identifying information has been removed.

IRB Review

The Institutional Review Board (IRB) for the protection of human research participants at Utah State University has reviewed and approved this study. If you have questions about the research study itself, please contact the Principal Investigator at 435-797-6371 or sarah.pinkelman@usu.edu. If you have questions about your rights or would simply like to speak with someone *other* than the research team about questions or concerns, please contact the IRB Director at (435) 797-0567 or irb@usu.edu.

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Informed Consent

If you **wish to participate,** please ***do not*** sign or submit this form. By **retaining, not submitting, OR failing to sign** this form, you **agree to participate in this study**. You indicate that you

understand the risks and benefits of participation, and that you know what you will be asked to do. You also agree that you have asked any questions you might have, and are clear on how to stop your participation in the study if you choose to do so.

Opt-out of Research

By **signing below AND submitting** this form, you **DO NOT** wish to have to participate. By signing below you specifically indicate you will **NOT** participate any aspect of this research. You will They **NOT** be observed for the purpose of data collection for this study.

_____	_____	_____
Participant's Signature	Participant's Name, Printed	Date

Appendix C

Parent Informed Consent

An Examination of the Golden Ratio in General Education Classrooms

Dear Parent,

If you are receiving this letter, your child has been selected to participate in a research study conducted by Carrie McLaughlin, a graduate student in the at Utah State University. Please read the information below to determine if you would like your child to participate in this study. If this form is ***NOT*** returned you ***WILL BE*** giving consent for your child to participate in this study. If you **sign AND return** this form you will be stating you ***DO NOT*** want your child to participate. In order to opt your child out of participating you must sign and return this form. **Only return this form signed if you DO NOT want your child to participate.**

Purpose

The purpose of this research is to examine the naturally occurring classroom management strategies occurring in classroom settings and the relationship between these strategies and student behavior. The relationship between students' perceptions of the school climate and these strategies will also be examined. These data will be collected through classroom observations and student School Climate Survey data. This form includes detailed information on the research to help you decide whether to participate in this study. Please read it carefully and **ask any questions you have before you agree to participate**. Your participation is entirely voluntary.

Procedures

Your child's participation will involve normal participation in the classroom they typically attend. However, at times an additional one to two staff members will be present to collect data basic classroom management strategies and student problem behavior. Any data collected on students will be confidential and deidentified. The results from the School Climate Survey are deidentified and will be analyzed by grade. The classroom and your child's participation in this study is expected to last between 4 to 16 weeks and each classroom will have 3-6 observations throughout the time of the study.

If you agree to have your child participate, researchers will collect in-person observation data on the entire class to calculate the rate of disruptive and off-task behavior during whole group or small group instruction. Individual data on your student will not be collected. Rather a group total will be calculated preventing the identification of a single student's performance.

Risks

This is a minimal risk research study. That means that the risks of participating are no more likely or serious than those you encounter in everyday activities. The foreseeable risks or discomforts primarily relate to the potential for distractions or discomfort due to having an additional adult observing in the classroom. To minimize these risks, observers will be adults who are familiar to the students and staff and the observer will sit in an unobtrusive location in the classroom. If you have a bad research-related experience or are injured in any way during your participation, please

contact the principal investigator of this study right away at 435-797-6371 or sarah.pinkelman@usu.edu.

Benefits

Although you will not directly benefit from this study, it has been designed to learn more about the relationship between classroom management strategies, students' problem behavior, and perceptions of school climate

COVID-19 Disclosures

Risks associated with contracting COVID-19 cannot be eliminated. Please carefully consider whether you are comfortable participating in person, particularly if you or someone in your home is at higher risk of serious illness. Because all of the procedures described as part of this study are already occurring as part of the schools normal functioning, participation in this study will not result in more risk than is currently present within the normal functioning of the school. The school that will follow the most current CDC COVID-19 related guidelines. COVID-19 vaccination is strongly encouraged, but not required, for Utah State University employees and students. This means that we cannot guarantee that the people you interact with in this research project are vaccinated. Masking or using other face coverings is strongly encouraged, but not required, for Utah State University employees and students. This means that we cannot guarantee that the people you interact with in this research project will wear a face covering. Researchers and fellow participants are not required to share vaccination information with you or to wear a facial covering, unless this research is not on USU's campus and the site where it will occur does require face coverings or vaccines. **Research participation is always completely voluntary, and you can decline or stop participating at any time.** Below, you will be permitted to *request* certain safety accommodations from the research team, but please know that they are not required to comply. The researchers in this project will follow the most current CDC Covid-19 guidelines.

Confidentiality

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Researchers will not collect any identifying information (e.g., birthdates, addresses, medical information) or the name of staff or students throughout the study. Furthermore, individual behavioral data on your students will not be collected as part of this research study. Rather an aggregate or total of the entire class's performance will be measured. To prevent possible identification participants and will be assigned a number (e.g., Participant 1 or Classroom 2) or pseudonym/false name/alias. We will collect your information through direct observations and video recordings. Online activities always carry a risk of data breach, but we will use systems and processes that minimize breach opportunities. All data will be securely stored in a restricted-access folder on Box.com, an encrypted, cloud-based storage system and/or in a locked drawer in a restricted-access office. This form will be kept for three years, *three is the minimum* after the study is complete, and then it will be destroyed.

It is unlikely, but possible, that others (Utah State University or state or federal officials) may require us to share the information you give us from the study to ensure that the research was conducted safely and appropriately. We will only share your information if law or policy requires

us to do so. If researchers learn that you are abusing or neglecting students, state law requires that researchers report this to the authorities.

Voluntary Participation & Withdrawal

Your participation in this research is completely voluntary. If you agree to participate now and change your mind later, you may withdraw at any time without penalty by contacting the principal investigator Sarah Pinkelman by phone (435-797-6371) or e-mail (sarah.pinkelman@usu.edu) and stating you no longer wish to participate. If you choose to withdraw after we have already collected information about you, all information will be securely destroyed. If you decide not to participate, the services you receive from Bear River Charter School, the researchers, or the Department of Special Education and Rehabilitation at Utah State University will not be affected in any way. The researchers may choose to terminate your participation in this research study if your employment at Bear River Charter School is discontinued prior to or during data collection or if your role at Bear River Charter School changes and you are no longer working with a group of three of more students.

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Informed Consent

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Opt-out of Research

By **signing below AND submitting** this form, you **DO NOT** wish to have to participate. By signing below you specifically indicate you will **NOT** participate any aspect of this research. You will They **NOT** be observed for the purpose of data collection for this study.

_____	_____	_____
Participant's Signature	Participant's Name, Printed	Date

Table 1

Relationship Between overall Staff Praise, Reprimand, and Redirection Proportions, and Student Problem Behavior by Grade

Grade	Staff Praise-to-Reprimand Proportion	Staff Praise-to-Redirection Proportion	Staff Praise-to-Corrective Statement Proportion	Percentage of intervals with Student Problem Behavior
K	96.55%	57.14%	56%	12.84
3	91.27%	63.79%	60.12%	8.56
4	85.71%	55.87%	34.5%	5.67
5	91.67%	66.33%	62.56%	7.21
Correlation to Student Problem Behavior	*r* = 0.09 (*p* =0.73)	*r = 0.17 (p = 0.54)*	*r = 0.23 (p =0.21)*	

Figure 1

Staff Praise Rate by Grade

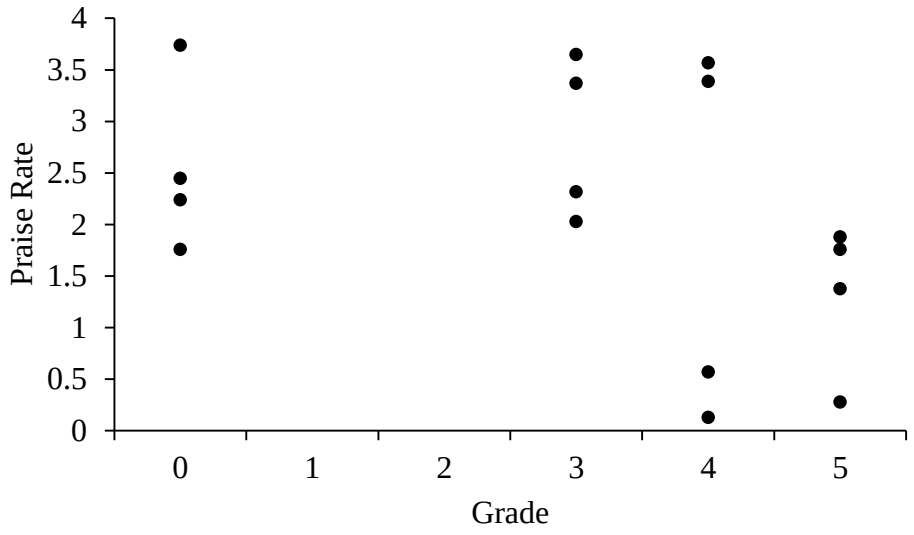

Figure 2

Staff Reprimand and Redirection Rate by Grade

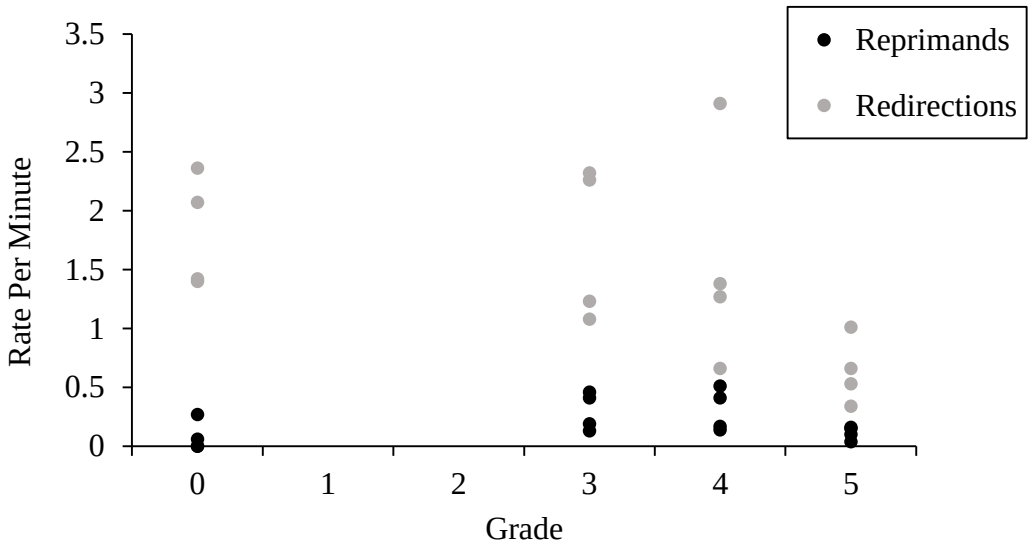

Figure 3

Staff Corrective Statement Rate by Grade

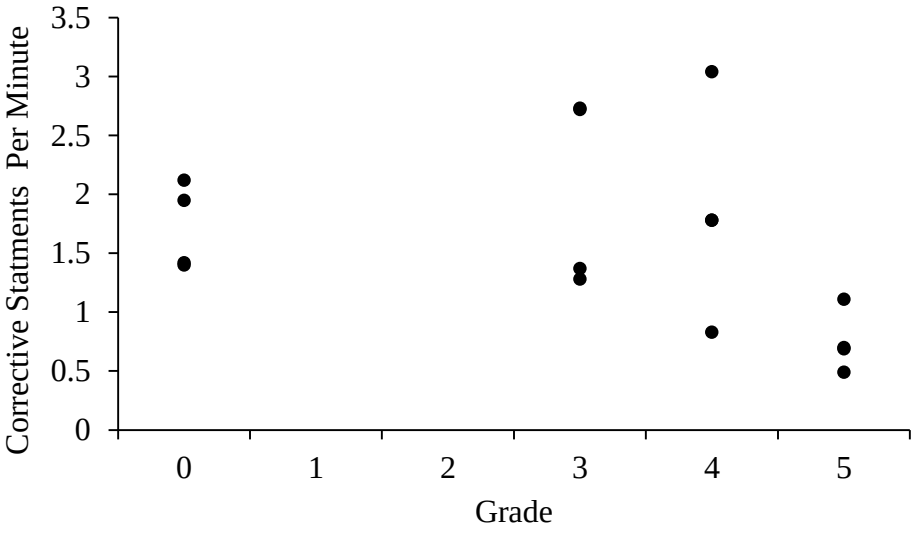

Figure 4

Relationship Between Staff Praise-to-Reprimand and Praise-to-Redirection Proportions and Student Problem Behavior

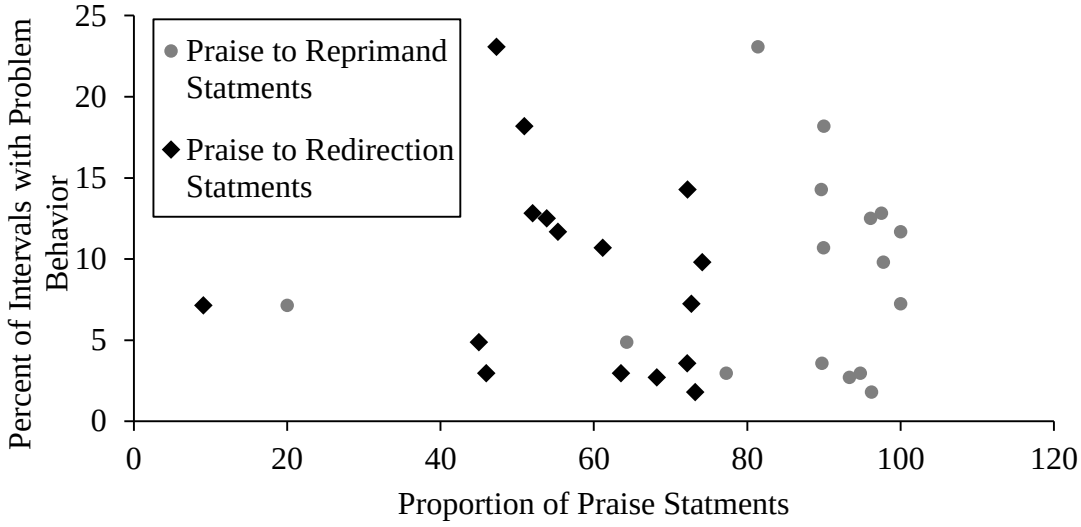

Figure 5

Relationship Between Staff Praise-to-Corrective Statement Proportions and Student Problem Behavior

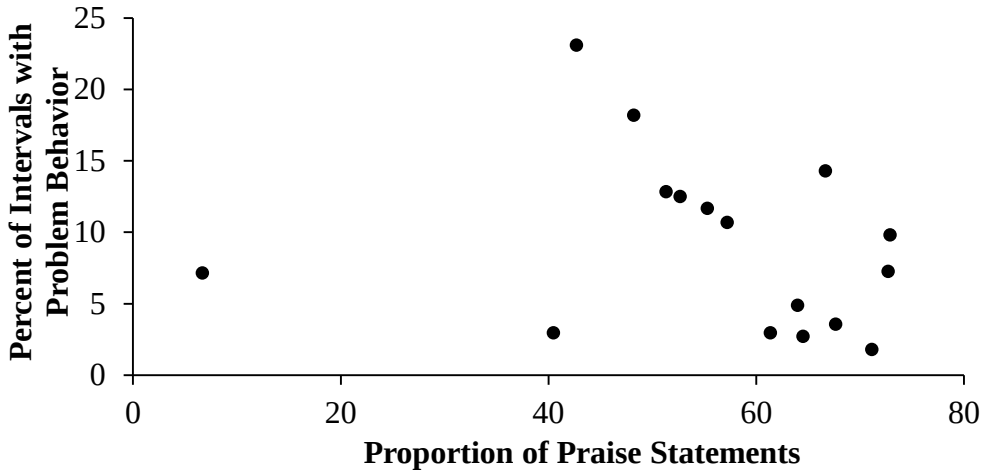

Figure 6

Teacher Praise-to-Reprimand Proportion and Student School Climate Survey Score