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General Education Teachers' Natural Rates of Praise: A Preliminary Investigation

Margaret T. Floress, PhD[1], Lyndsay N. Jenkins, PhD[1], Wendy M. Reinke, PhD[2], and Lorena McKown, MS[1]

Abstract

Many studies have demonstrated that when teachers are trained to increase their use of praise, student misbehavior improves; however, few studies have examined teachers' natural use of praise and no study has examined the relation between teachers' natural use of praise and classroom behavior. The purpose of the current study was to examine general education teachers' natural use of praise in elementary classrooms. One hundred forty direct behavioral observation hours were used to collect praise rates and student behavior across 28 general education classrooms (kindergarten to fifth grade). Across all grade levels, results suggest that teachers' use of praise was low (grade-level mean rates ranging from 0.38 per minute in the fourth grade to 0.75 per minute in kindergarten) and teachers used general praise more frequently than behavior-specific praise (BSP). A significant, negative relation was found between off-task behavior and BSP ($r = -.37$, $p = .05$), indicating that teachers who used more BSP tended to have less off-task behavior in their classrooms. Implications for training teachers to increase their use of BSP as a universal strategy are discussed.

Keywords

teacher praise, behavior-specific praise, praise, classroom management, direct observation

Many teachers struggle with classroom management and report that it is not only one of the most difficult parts of their job but also an area in which they receive the least amount of training (Baker, 2005; Reinke, Stormont, Herman, Puri, & Goel, 2011). Student disruptive behavior and ineffective classroom management likely influence teacher attrition, in that many teachers who leave the field due to job dissatisfaction cite student discipline as a contributing factor (Ingersoll, 2001). Praising is an easy-to-implement, no-cost strategy that has been studied since the 1960s to assist teachers with classroom management (Hall, Lund, & Jackson, 1968; Thomas, Becker, & Armstrong, 1968). Praise is defined as a verbal statement or gesture signifying teacher approval of student behavior, which goes beyond verbal feedback for a correct academic response (Brophy, 1981; Reinke, Stormont, Herman, Wachsmuth, & Newcomer, 2015). There are two types of praise: general praise (GP), a broad statement of approval (e.g., good job, nice), and behavior-specific praise (BSP), which explicitly describes the student's behavior and approval of that behavior (e.g., good job completing all your math questions; Moffat, 2011). BSP is purportedly more effective than GP because children learn which behavior earned approval (Brophy, 1981). There is a large body of evidence to support that praise can help prevent and ameliorate the effects of emotional and behavioral disorders (EBDs; e.g., Sutherland, Lewis-Palmer, Stichter, & Morgan, 2008; Sutherland & Oswald, 2005).

Praise and Student Behavior

Many studies have found that when teachers are taught to increase their use of praise, student disruptive and off-task behaviors decrease (Becker, Madsen, Arnold, & Thomas, 1967; Dufrene, Lestremau, Zoder-Martell, 2014; Reinke, Lewis-Palmer, & Martin, 2007; Reinke, Lewis-Palmer, & Merrell, 2008; Sutherland et al., 2008; Sutherland, Wehby, & Copeland, 2000). When teachers are taught to ignore inappropriate student behavior and attend to appropriate behavior, student disruptive and off-task behavior declines because students learn to discriminate between which behaviors receive attention and which do not (Gable, Hester, Rock, & Hughes, 2009; Hester, Hendrickson, & Gable, 2009). Furthermore, BSP is a particularly effective use of praise because it enables children to identify and discriminate

[1]Eastern Illinois University, Charleston, USA
[2]University of Missouri, Columbia, USA

Corresponding Author:
Margaret T. Floress, Eastern Illinois University, 600 Lincoln Avenue, Charleston, IL 61920, USA.
Email: mfloress@eiu.edu

which specific conditions evoke praise. In other words, BSP provides children salient discrimination so they are more likely to repeat teacher-approved behaviors in the future (Brophy, 1981; Floress & Jenkins, 2015). The benefits of training teachers to use praise have been demonstrated in high school classrooms (Blaze, Olmi, Mercer, Dufrene, & Tingstrom, 2014), elementary classrooms (Reinke et al., 2008), elementary classrooms with students identified with EBDs (Dufrene et al., 2014), and preschool settings (Stormont, Smith, & Lewis, 2007). More research has focused on examining the impact of increasing teacher praise with a few students targeted for intensive intervention (Tier 3) compared with increasing teacher praise and the impact on universal classroom behavior (Tier 1; Jenkins, Floress, & Reinke, 2015). Although a few studies (Floress & Jenkins, 2015; White, 1975) have examined teachers' natural use of praise, no study has examined whether teachers who naturally use higher rates of praise (in the absence of training) have fewer classroom behavior problems. When teachers are trained to increase their use of praise, inclusion criteria often require low baseline rates (e.g., less than one praise per minute; Simonsen et al., 2017). This requirement makes it difficult to estimate whether baseline rates from teacher training studies accurately reflect teachers' *natural* use of praise. The goal of this study was to examine general education teachers' natural use of praise in kindergarten through fifth-grade classrooms.

Why Study Praise?

Students who have behavior problems receive fewer teacher praise statements and more teacher reprimands compared with children without behavior problems (Sutherland et al., 2008; Sutherland & Oswald, 2005). When students are off-task or disruptive, they evoke few positive interactions from their teacher, which likely leads to more off-task and disruptive behavior. Because the classroom is a complex social system, it is important to consider the influential interaction between student and teacher behavior (Scott, Alter, & Hirn, 2011). It is also important to note that as teacher praise increases, reprimands decrease (Caldarella, Williams, Hansen, & Wills, 2015; Reinke et al., 2008; Wills, Iwaszuk, Kamps, & Shumate, 2014), and that this might happen because increasing praise requires teachers to focus their attention on identifying appropriate student behavior rather than criticizing inappropriate behavior (Reinke et al., 2008). To streamline data collection for this project and because studies have demonstrated that when teacher praise increases teacher reprimands decrease, measurement of praise (and not reprimands) was the focus in this study.

Teachers' Natural Praise Rates

Limited information exists regarding natural rates of praise in general education classrooms (see Jenkins et al., 2015, for review). Over 40 years ago, White (1975) examined teachers' natural use of total praise, and found that early elementary teachers praised at a higher rate (43.7 per hour) compared with middle school (17.1 per hour) and high school teachers (8.4 per hour). Only a few contemporary studies (Burnett & Mandel, 2010; Floress & Jenkins, 2015; Reinke, Herman, & Stormont, 2013; Scott et al., 2011) have examined natural rates of praise; however, with the exception of Floress and Jenkins (2015), rates of praise were compiled across multiple grades making grade-level comparisons impossible. Floress and Jenkins (2015) and White (1975) reported similar total praise rates among early elementary classrooms (47.3 and 43.7 per hour, respectively); however, further study is needed to determine whether White's findings are consistent with current rates among older grades. In addition, scholars (Gable, Hendrickson, Young, Shores, & Stowitscheck, 1983; Shores et al., 1993; Sutherland et al., 2000; Wehby, Symons, & Shores, 1995) have claimed that rates of teacher praise in special education classrooms are "too low"; however, this is difficult to determine without assessing comparative praise rates in general education classrooms.

Current Study

The current study examined general education teachers' natural use of praise in kindergarten through fifth-grade classrooms. To do this, we posed four research questions (with directional hypotheses for Research Question 2 and 3):

Research Question 1: What is the average rate of praise for teachers at each grade level?
Research Question 2: Do teachers at different grade levels praise at different frequencies? We hypothesized an inverse relation between grade level and praise (White, 1975).
Research Question 3: Do teachers use more BSP or GP when praising students in the classroom? We hypothesized that teachers would use more GP than BSP (Burnett & Mandel, 2010; Floress & Jenkins, 2015; Reinke et al., 2013).
Research Question 4: Is there a relation between teachers' natural use of praise and student disruptive or off-task behavior?

Method

Participants and Setting

Twenty-eight general education teachers (27 females and one male) from five districts and six schools in Central Illinois participated in the study. Round-trip drive time to each of the schools ranged from 10 to 60 min. Due to the nature of the study (i.e., undergraduate research students conducted direct observations within general education

Table 1. School Demographics.

Participating schools	Participating classrooms		School-wide positive behavior interventions and supports			
	Classes	Participation rate	Implemented	How many years	Tier 1 support?	Fidelity data collected?
School 1	6	18.8	Yes	3	Yes	No
School 2	8	25.0	Yes	3	Yes	No
School 3	4	66.7	No	—	—	—
School 4	1	16.7	No	—	—	—
School 5	2	9.1	Yes	2	Yes	No
School 6	7	43.8	Yes	6	No	No

classrooms), schools within a 1-hr round-trip drive time were recruited. Schools further away were excluded from recruitment, because student observers would be unable to collect data and attend their college classes. Six schools were approached regarding participation, and all six school administrators (100%) permitted the first author to recruit teacher participants and collect data within the schools. Across the six schools, approximately 25% of teachers agreed to participate. Four of the schools were reportedly implementing school-wide positive behavior intervention supports (SWPBIS) at the time this study was conducted, half of the schools reportedly provided Tier 1 SWPBIS support to their staff, and none of the schools reported to collect SWPBIS fidelity data (see Table 1).

Teacher demographics are reported in Table 2. Of the 28 teachers, 13 taught early elementary–age students (K–2) and 15 taught late elementary–age students (3–5). All teachers were Caucasian. Thirty-nine percent of teachers had 5 or fewer years of teaching experience. Education was equally distributed with half of the teachers holding a 4-year college degree and half having a master's degree. The majority of the teachers (75%) reported that their class included mostly students in general education and some students in special education, the other 25% reported that their class included only students in general education. Teachers were asked to rate the behavioral difficulty of their class (as a whole) compared with other classes they had taught in the past. Although this information is arguably subjective, it was used to assess whether teachers who perceived their classes as more challenging were less likely to participate. This did not appear to be the case. Thirty-nine percent reported that their class was of average difficulty, 32% of teachers rated their classrooms as somewhat more difficult or much more difficult, and 25% of teacher rated their classrooms as much less difficult or somewhat less difficult than previous classes.

Table 2. Teacher and Classroom Demographics.

Demographic characteristic	*n*	%
Teacher sex		
Male	1	4
Female	27	96
Teacher racial background		
Caucasian	28	100
Grade		
Kindergarten	2	7
First grade	6	21
Second grade	5	18
Third grade	9	32
Fourth grade	3	11
Fifth grade	3	11
Years of teaching experience		
1–5	11	39
6–10	5	18
11–15	6	22
16–20	2	7
20+	4	14
Highest educational degree obtained		
Four-year college degree	14	50
Master's degree	13	46
No response	1	4
Classroom makeup		
Only general education students	7	25
Mostly general education students	21	75
Classroom difficulty rating		
Much less difficult	3	11
Somewhat less difficult	4	14
Average difficulty	11	39
Somewhat more difficult	6	21
Much more difficult	3	11
No response	1	4

Student behavior data were collected anonymously; thus, individual student or classroom demographic data are unavailable. The majority of students who attended five of the six schools were Caucasian (ranging from 84.7% to 94.6%). Demographics at School 6 were more ethnically diverse and included 56.3% Caucasian students, 33.1% Hispanic, and 9.2% multiracial (Illinois Interactive Report Card). Participating schools were public elementary schools with the exception of one private parochial school (School 3). At the private school, the four participating classrooms

included a kindergarten, second-grade, third-grade, and fourth-grade class. On average, the 24 public school classrooms had 21.4 students (range = 16–27) in each class. The four private school classrooms had an average of 11.5 students (range = 10–13) in each class. Therefore, during a 10-min observation in the public school classrooms, about 50% of students in the class were observed, and in the private school classrooms, almost 100% of students in the class were observed. Both teacher and student observations took place in general education classrooms during teacher-led whole-class instruction. Whole-class instruction was defined as a time when the teacher was providing information on a core subject (e.g., math, reading, social studies), standing (or sitting) in front of the class, and expecting the students to face and actively listen or engage in the lesson.

Measures

Observers were trained to gather teacher praise and student disruptive and off-task behavior. Due to the time, labor, and logistical challenges (e.g., round-trip drive time ranged from 10 to 60 min) related to collecting over 140 hr of direct observation data, the majority of teacher and student data were collected nonconcurrently. Thirty percent of the total student observations were collected concurrently with teacher praise data, which were randomly determined based on transportation and observation needs. Most observations included a single observer who collected either student behavior or teacher praise. At least 30% of teacher and student observations for each classroom included two observers who both collected either teacher or student data simultaneously, so that reliability between observers could be calculated. Each week, the first author monitored teacher praise and student observation minute totals for each classroom. Observation assignments were made randomly based on how many observation minutes (i.e., 200 teacher minutes; 100 class-wide minutes) or reliability minutes (i.e., at least 30% for teacher and 30% for class wide) were needed for each classroom.

Teacher praise. The frequency (i.e., rate per minute) of teacher praise was collected via direct observations during whole-class teacher instruction using praise definitions. BSP was defined as any specific verbalization or gesture that expresses a favorable judgment on an activity, product, or attribute of the student(s), for example, "Terrific job coloring your project," or "Thank you for sitting so nicely." Reinforcing gestures paired with a description of the student's behavior were also defined as BSP. For instance, if a teacher stated "You are helping your neighbor" and then handed the student a "PBIS ticket," BSP was identified. GP was defined as any nonspecific verbalization or gesture that expresses a favorable judgment on an activity, product, or attribute of the student. For example, "Excellent," "Terrific," "Good job," thumbs-up gesture, or PBIS ticket (without a description of the appropriate behavior) would be identified as GP.

A teacher was observed the entire time he or she was conducting whole-class instruction. The aim was for observers to obtain 30 min of observation during each classroom visit; however, the exact number of minutes per observation varied because some teachers taught for shorter periods (e.g., kindergarten teachers), some teachers changed their daily schedule leaving less time to observe, and some teachers taught, then broke students up into small groups, then came back to lead whole-group instruction. After each observation, the number of minutes observed and the number of GP and BSP instances observed were entered into an Excel file. As observations were completed for each teacher (i.e., approximately 200 min), the GP and BSP totals were divided by the total number of minutes observed to obtain a rate per minute. This rate was then multiplied by 60 to obtain a rate of praise per hour. To answer some of the research questions about grade-level praise rates, a grade-level mean was an average of each classroom within the respective grade level.

Student behavior. Off-task and disruptive student behavior were obtained through 10-min, partial-interval, direct observations during whole-class instruction. This approach for assessing classroom-level behavior has been validated in the literature (see Briesch, Hemphill, Volpe, & Daniels, 2015; Dart, Radley, Briesch, Furlow, & Cavell, 2016). Ten students in the classroom were randomly selected for each 10-min observation. Starting with the child sitting closest to the door, the observer counted the students off by a random number (i.e., one to five) and made a note (e.g., "orange shirt") on the observation sheet under each interval to remind them of what child to observe. Therefore, class-wide behavior was a sample of classroom behavior because each observation (generally) did not represent all of the students in the classroom. The class-wide observation form was divided into 60, 10-s intervals and one student was observed for an entire minute before a second student was observed. After a minute of observation, there was a 10-s break where no observation took place. Observers used an ear bud to listen to a prerecorded tone, which prompted each 10-s interval. If the target behavior was observed during any part of the interval, that interval was marked.

Off-task behavior was defined as "child is looking away from desk work or looking away from the teacher at the front of the class, or looking away from teacher instruction (e.g., smart board) for more than 3 seconds." Examples included "staring at the ceiling or looking at a visitor in the class, or staring off where the student's eye gaze is not directed towards their work, the teacher, or instruction." Off-task and disruptive behaviors were coded simultaneously if appropriate (e.g., the child was engaging in inappropriate behavior

and was also off-task). The number of off-task intervals observed per hour was calculated by totaling the number of off-task intervals observed, dividing by the total number of minutes observed, and multiplying by 60.

Disruptive behavior included noncompliance and 12 inappropriate behaviors identified on the *Revised Edition of the School Observation Coding System* (REDSOCS; Jacobs et al., 2000). Bagner, Boggs, and Eyberg (2010) reported interobserver reliability on REDSOCS categories as moderate to high. Percent agreement ranged from 47% to 90% (M = 67%) and Cohen's kappa coefficients ranged from 0.69 to 0.95 (M = 0.82; Bagner et al., 2010). In addition, convergent validity was supported by significant correlations with the *Sutter-Eyberg Student Behavior Inventory–Revised* (Eyberg & Pincus, 1999) and the *Conners' Teacher Rating Scale–Revised: Long Version* (CTRS-RL; Conners, 1997). Noncompliance was defined as "any refusal by a child to comply with a request made by a teacher or adult." Noncompliance was also identified "if the child does not attempt to perform or stops attempting to perform the requested behavior within 5-seconds following the request, shaking head 'no,' verbal refusal [or] touching something the child was told not to touch." Inappropriate behavior included whining, crying, yelling, destructive behavior, aggressive behavior, negativism, self-stimulation, demanding attention, disruptive behavior, talking out of order, being out of area, and cheating (see Jacobs et al., 2000, for exact definitions for inappropriate behaviors). The number of disruptive behavior intervals observed per hour was calculated by totaling the number of disruptive behavior intervals observed, dividing by the total number of minutes observed, and multiplying by 60.

Observation Training

Twelve research assistants (three graduate students, nine undergraduate students) were trained in total. The study took place over three academic semesters so training was ongoing. Five assistants were involved in the first semester (two were previously involved in data collection from a pilot study; Floress & Jenkins, 2015). The following semester six assistants were involved (five from the previous semester). The final semester, eight assistants were involved (three from the previous semester).

At the beginning of each semester, the first author trained all the assistants even if they had been involved in the project (or a similar project) the previous semester. Training lasted 2 to 4 weeks. During the first 2 weeks, the first author provided students an overview of the project, reviewed operational definitions for coding teacher praise and student behavior, and discussed examples and nonexamples. Previously involved assistants were encouraged to give examples and tips from their previous experience. Next, assistants were taught how to collect frequency and partial-interval observation data, data collection forms were introduced and reviewed, and assistants were given a cued audio recording to use for partial-interval student data collection. The assistants then practiced coding, first teacher behavior and then student behavior, while watching a video (created for training purposes) of a teacher leading whole-class instruction within an elementary classroom. When coding student behavior, a cued audio recording was used. Short, 5- to 10-min video segments were used to practice coding to encourage frequent discussion and questions regarding the coding process. During the last 2 weeks of training, students were required to accompany an assistant, who collected data the previous semester, to the schools to collect direct observation data in the classroom. The assistant needed to obtain at least 80% interobserver agreement (IOA) on three observations prior to collecting data independently.

After training was complete (and to combat observer drift over time), assistants attended weekly research meetings led by the first author. These meetings gave assistants the opportunity to discuss various coding issues, discrepancies, and questions that came up during the classroom observations. It also ensured that all assistants were continuing to code similarly. In addition, immediately after reliability data were collected, the assistants examined the data for discrepancies, discussed the discrepancies, together decided on the correct codes, and finally calculated IOA. Observers reported IOA at the weekly meetings and if IOA fell below 80%, it was discussed with the first author and additional training (e.g., reviewing examples and nonexamples) occurred to ensure that the coding definitions were understood.

Procedures

After securing internal review board and school administrator approval, teacher participants were recruited by sending a flyer advertising the study via email to all teachers employed at each of the schools. Then, individual follow-up emails were sent to general education teachers at each of the schools. The first author also asked to advertise the study in person at each school (e.g., during the first 5 min of a faculty meeting). Five of the school administrators denied this request citing lack of time. The first author provided a 5-min, in-person recruitment talk to teachers at School 2. All forms of recruitment (including sitting down with the teacher to obtain informed consent) relayed that the goal of the study was to examine "behavioral skills" used among elementary teachers during classroom instruction and the relation between behavioral skills and student classroom behavior. The teachers were never told that the purpose of the study was to measure teacher praise. To participate, teachers needed to teach a general education (kindergarten to fifth grade) class. Teachers who taught specials (e.g., art, music) and special education teachers were not invited to participate.

Interested teachers contacted the first author and a face-to-face meeting was set up to answer questions regarding the study, collect informed consent, and obtain daily schedules for when whole-class instruction typically took place. All observations took place during teacher whole-group instruction so that the teacher observations were uniform across all classrooms. In addition, data were collected during whole-class instruction because this ensured that observers could hear the teacher clearly. Prior to collecting observations for the pilot study (Floress & Jenkins, 2015), it was determined that conducting observations during small group or individual seatwork time was not possible because on many occasions, the observer could not hear what the teacher said to individual or small groups of students. The first author coordinated observation times by matching research assistants' schedules to when teachers were providing whole-class instruction. Data collection took place during three academic semesters. Eight classrooms were collected during fall 2013; 10 classrooms were collected during the spring 2014 semester; and 10 classrooms were collected during the fall 2014 semester. Data collection in each classroom took place over 1 to 2 months.

Multiple steps were taken to reduce the likelihood of student and teacher reactivity. First, as mentioned above, teachers were never told that the goal of the study was to measure teacher praise. Second, approximately 300 observation minutes (200 min observing teacher praise) and (100 min observing class-wide behavior) were collected in each of the 28 classrooms during whole-class instruction. Having observers in each classroom for approximately 5 hr (in total) increased the likelihood that teachers and students habituated to their presence. Also, because 300 observation minutes were collected in each classroom, observers needed to return to classrooms multiple times. On average there were 11 teacher praise (range = 7–18) observations per classroom and 11 classroom behavior (range = 9–14) observations per classroom. This also increased the likelihood that teachers and students habituated to the observers. During observations, research assistants were trained to sit in a location that was unobtrusive and not draw attention to themselves. Observers were also explicitly trained to ignore students' bids for attention, even if a young child asked for assistance (e.g., help tying a shoe).

Observers were trained to collect both teacher and student data only when the teacher was leading whole-class instruction. Therefore, observers started observing when the teacher was at the front of the class and students were expected to be looking at and listening to the teacher. Similarly, observers stopped observing when students were transitioning to a new activity or during individual or small group activities. Observations were tailored to what teachers did naturally (i.e., teachers were not prompted to teach for a set amount of time or at a certain time during the day). Observing teacher whole-class instruction without telling teachers how long they needed to teach or at what time they needed to teach helped ensure that observations closely represented what teachers would have done naturally; however, not all teachers teach the same way, which is why observation lengths varied. For example, kindergarten teachers tended to only teach for 5 to10 min before having students return to their desks. However, fourth- and fifth-grade teachers tended to teach for 20 to 30 min. Other teachers, regardless of grade, moved back and forth between whole-class instruction and small group or individual activities. A minimum observation time of 2 min was used.

Analytic Plan

Four separate analyses were conducted to answer the four research questions. First, the mean rate of praise for each grade level was calculated to answer the first research question (What is the average rate of praise for teachers at each grade level?). Second, an ANOVA with post hoc analyses was used to determine whether there were significant differences between frequencies of praise between teachers at different grade levels (Research Question 2: Do teachers at different grade levels praise at different frequencies?) where the rate of praise per hour served as the dependent variable. To answer the third research question (Do teachers use more BSP or GP when praising students in the classroom?), the overall average rate of BSP was compared with the overall average rate of GP using a paired-samples t test. Cohen's d was utilized to calculate effect sizes. Effect sizes are considered small in magnitude for $d = 0.20$, medium for $d = 0.50$, and large for $d \geq 0.80$ (Cohen, 1988). Finally, to examine the association between praise and different types of classroom behavior (i.e., off-task and disruptive behavior), four separate Pearson product–moment correlations were calculated to answer the fourth research question (Is there a relation between teachers' natural use of praise and student disruptive or off-task behavior?). A correlation coefficient of .10 is considered a small association, a correlation coefficient of .30 is considered a medium association, and a correlation coefficient of .50 is considered a large association (Cohen, 1988).

Results

A total of 314 praise observations and 329 student behavior observations were completed in 28 classrooms totaling 5,721 min or 95.35 hr of praise observation (average observation length 18.2 min, range = 2–58 min) and 2,824.29 min or 47.07 hr of class-wide behavior observations (average observation length 9.58 min, range = 1–10 min). The mean number of observation minutes for each grade level was 203.5 (kindergarten), 207.3 (first), 203.4 (second), 200.9 (third), 210.7 (fourth), and 191.0 (fifth). There was

Table 3. IOA per Grade per Category.

		Private school classrooms	Teacher praise		Student behavior	
Grade	*n*	*n*	BSP	GP	Off-task	Disruptive
K	2	1	95%	88%	99%	99%
1	6	0	92%	84%	94%	98%
2	5	1	97%	91%	98%	99%
3	9	1	97%	96%	96%	99%
4	3	1	93%	94%	97%	98%
5	3	0	90%	94%	97%	97%

Note. IOA = interobserver agreement; BSP = behavior-specific praise; GP = general praise.

Table 4. Teachers' Mean and Range of Observed Rate of Praise Statements per Hour.

		Total praise		Behavior-specific praise		General praise	
Grade	*n*	*M*	Range	*M*	Range	*M*	Range
K	2	45.1 (0.75)	32.1–58.1 (0.54–0.97)	10.3 (0.17)	8.7–11.8 (0.15–0.20)	34.9 (0.58)	20.3–49.5 (0.34–0.83)
1	6	33.5 (0.56)	25.1–40.9 (0.42–0.68)	7.2 (0.12)	3.1–13.1 (0.05–0.22)	26.3 (0.44)	16.6–36.1 (0.28–0.60)
2	5	34.4 (0.57)	18.8–55.7 (0.31–0.93)	6.0 (0.10)	2.30–11.6 (0.04–0.19)	28.4 (0.47)	12.5–53.5 (0.21–0.89)
3	9	38.9 (0.65)	7.9–78.4 (0.13–1.31)	7.1 (0.12)	0.9–16.0 (0.02–0.27)	31.8 (0.53)	7.0–62.4 (0.12–1.04)
4	3	22.5 (0.38)	6.3–37.2 (0.11–0.62)	1.5 (0.03)	0.3–2.7 (0.10–0.05)	21.0 (0.35)	4.7–36.9 (0.08–0.62)
5	3	30.9 (0.52)	9.1–70.3 (0.15–1.17)	1.1 (0.02)	0.4–1.7 (0.01–0.03)	29.8 (0.50)	8.7–68.6 (0.15–1.14)
Total	28	34.8 (0.58)	6.3–78.4 (0.11–1.31)	5.9 (0.10)	0.30–16.0 (0.01–0.27)	28.9 (0.48)	4.7–68.6 (0.08–1.14)

Note. Rate per minute is provided in parentheses.

not a significant difference in the number of observation minutes across the grade levels, $F(5, 27) = 0.535$, $p = .747$.

Across classrooms, IOA was collected during 42% of the praise observation minutes (range = 22%–77%). For praise, IOA was calculated by comparing each praise category and dividing the smaller number of praise by the larger number of praise to obtain a percentage of discrepancy between observers (Cooper, Heron, & Heward, 2007). Across all classrooms, IOA for BSP was 94% and GP was 91%. IOA for BSP and GP by grade is illustrated in Table 3.

We collected IOA during 38% of the student behavior observation minutes across classrooms (range = 25%–53%). IOA for off-task and disruptive behavior was calculated by comparing each interval (i.e., interval-by-interval agreement) and dividing the number of interval-by-interval agreements by the number of interval-by-interval agreements plus disagreements and multiplying by 100. IOA was 99% (86%–100%) for off-task and 96% (77%–100%) for disruptive behavior across all classrooms. IOA for off-task and disruptive behavior by grade is illustrated in Table 3.

To answer the first research question (What is the average rate of praise for teachers at each grade level?), we computed the mean rate of praise at each grade level. Table 4 presents the average rate of BSP and GP for each grade level. Kindergarten teachers had the highest rate of total praise, whereas fourth-grade teachers had the lowest rate of total praise. The overall range in averages for total praise across grades was 22.5 to 45.1 praises per hour (or 0.38–0.75 per minute).

To answer the second research question (Do teachers at different grade levels praise at different frequencies?), the mean rates of praise at each grade level were compared. Results indicate that there were not significant differences between grade levels for either GP, $F(5, 22) = 0.22$, $p = .95$, or BSP, $F(5, 22) = 2.41$, $p = .07$. Table 5 reports effect size calculations for differences between grade levels. BSP effect sizes ranged from 0.02 (first grade and third grade) to

Table 5. Behavior-Specific and General Praise Effect Sizes.

		Specific praise		General praise	
Grade	Grade	Cohen's *d*	Description	Cohen's *d*	Description
K	1	0.95	Large	0.60	Medium
K	2	1.48	Large	0.33	Small
K	3	0.79	Medium	0.16	-
K	4	4.94	Large	0.75	Medium
K	5	5.66	Large	0.18	-
1	2	0.33	Small	0.15	-
1	3	0.02	-	0.38	Small
1	4	1.92	Large	0.43	Small
1	5	2.15	Large	0.14	-
2	3	0.26	Small	0.18	-
2	4	1.71	Large	0.43	Small
2	5	1.95	Large	0.05	-
3	4	1.51	Large	0.61	Medium
3	5	1.65	Large	0.07	-
4	5	0.44	Small	0.33	Small

Note. Cohen's *d* effect size descriptions for small: 0.2, medium: 0.5, and large: 0.8 (Cohen, 1988). Values represented by a dash were below Cohen's effect size interpretation guidelines.

5.66 (kindergarten and fifth grade) and GP effect sizes ranged from 0.05 (second grade and fifth grade; fourth grade and fifth grade) to 0.75 (kindergarten and fourth grade).

We examined the third research question (Do teachers use more BSP or GP when praising students in the classroom?) by conducting a correlated sample *t* test. Teachers used more GP (28.9 praises per hour or 0.48 per minute) than specific praise (5.9 praises per hour or 0.10 per minute), which was a statistically significant difference, $t(27) = -7.64$, $p < .001$, Cohen's $d = 1.82$.

To answer the fourth research question (Is there a relation between teachers' natural use of praise and student disruptive or off-task behavior?), we first computed the mean rate of disruptive and off-task behavior intervals observed classroom wide at each grade level. Table 6 presents the average number of disruptive behavior and off-task behavior intervals identified per hour for each grade level. Second-grade classrooms had the lowest rate of disruptive behavior intervals, and fourth-grade classrooms had the highest rate of disruptive behavior intervals. The overall range in averages for disruptive behavior intervals across grades was 12.2 disruptive behavior intervals per hour to 24.0 disruptive behavior intervals per hour. Kindergarten classrooms had the lowest rate of off-task behavior intervals and first-grade classrooms had the highest rate of off-task behavior intervals. The overall range in averages for off-task behavior intervals across grades was 22.6 off-task behavior intervals per hour to 46.5 off-task behavior intervals per hour.

Table 6. Classroom Mean Disruptive and Off-Task Behavior Intervals per Hour.

		Disruptive behavior			Off-task behavior		
Grade	*n*	*M*	Minimum	Maximum	*M*	Minimum	Maximum
K	2	13.5	8.0	19.0	22.6	20.6	24.6
1	6	22.7	6.0	46.0	46.5	12.1	88.5
2	5	12.2	4.0	25.0	23.4	15.0	34.9
3	9	13.1	2.0	27.0	25.8	5.7	58.8
4	3	24.0	16.0	28.0	26.6	20.0	31.2
5	3	19.7	4.0	30.0	38.1	25.8	57.0
Total	28	16.9	2.0	46.0	31.0	5.7	88.5

Next, correlational analyses were conducted. Pearson product correlations were calculated for specific and general rates of praise with both off-task and disruptive behavior intervals per hour. There was a moderate, significant, and negative correlation between rates of BSP and off-task behavior intervals, $r = -.37$, $p = .05$, indicating higher rates of BSP was significantly related to lower rates of off-task behavior intervals. Small correlations between BSP and disruptive behavior intervals ($r = -.24$, $p = .21$), GP and off-task behavior intervals ($r = -.20$, $p = .30$), and GP and disruptive behavior intervals ($r = .23$, $p = .25$) were not significant.

Discussion

This study examined rates of praise in elementary school classrooms and the relation between teacher praise and student off-task and disruptive behavior. Because a large body of evidence supports that praise can help prevent and ameliorate the effects of EBDs (e.g., Sutherland et al., 2008; Sutherland & Oswald, 2005), it is important to investigate the rates at which general education teachers typically praise students—as students with EBD are commonly placed in inclusive classes for substantial parts of the school day. For example, according to the 38th Annual Report to Congress on Implementation of IDEA (2016), 46.2% of students identified under the federal category of emotional disturbance were included at least 80% of the day, and 63.8% were included at least 40% of the day. Findings indicated that teachers on average across grade levels provided 34.2 total praise statements per hour or approximately one praise statement every 2 min. Kindergarten teachers praised more than other grade-level teachers and a decreasing trend in BSP was observed as grade levels increased. Finally, higher rates of BSP were significantly correlated with lower levels of off-task behavior.

These findings provide important information that could be used when evaluating a teacher's use of classroom praise or training teachers to increase their use of praise as a universal classroom management strategy. First, this study provided naturalistic praise rates for a group of elementary

teachers. The average total rate of praise ranged from 22.5 to 45.1 per hour and the overall levels of disruptive behavior and off-task behavior were generally low. Across the observations, on average 5% of the intervals were identified as disruptive and 9% of the intervals were identified as off-task. In other words, the teachers in the classrooms who were observed did not appear to need support for high levels of classroom misbehavior. Therefore, these results provide a general metric for what might be expected in a classroom where a teacher is not seeking intervention to reduce problem behaviors.

Natural rates of praise reported in this study (average rate of GP ranged from 22.5 to 45.1 per hour) appear low, especially specific praise (average rate of BSP ranged from 1.10 to 10.25 per hour). After reviewing Tier 3 praise intervention studies, Floress and Jenkins (2015) hypothesized that BSP needs to be delivered 18 to 30 times per hour to effectively decrease student misbehavior. In the current study, kindergarten teachers used the most BSP (10.25 times per hour) and although this rate is well below 18 to 30 praises per hour, it is higher than what has been reported previously (8.8 BSP per hour, Floress & Jenkins, 2015; 7.8 BSP per hour, Reinke et al., 2013; 5.2 BSP per hour, Sutherland et al., 2000; 1.75 BSP per hour, Burnett & Mandel, 2010). Considering these studies, it is possible that most teachers may naturally have low rates of BSP and, therefore, are likely to benefit from BSP training.

Second, although there were no statistically significant differences in use of praise among the different grade levels, the majority of effect size calculations for BSP were large or medium suggesting that nonsignificant results may be due to the relatively small sample size. In reviewing the descriptive statistics, there is a clear decline in the mean rates of BSP as grade level increases. In kindergarten, teachers used 10.25 BSP statements per hour (range = 8.7–11.8 per hour), whereas fifth-grade teachers used 1.1 BSP statements per hour (range = 0.40–1.70 per hour). There was not a statistically significant difference in BSP between kindergarten and fifth grade, but there was a large effect size. This suggests that differences between frequency of praise and different grade levels would be found in a larger sample and, therefore, future research is needed to further examine this trend.

Perhaps teachers in early elementary naturally use more BSP because the students are still relatively new to school and benefit from explicit and specific attention toward learning new behaviors needed to be successful in the classroom. This is consistent with White (1975), who found that early elementary teachers used more praise than later elementary teachers. In the current study, GP remained fairly stable on average for teachers across all grade levels and teachers were significantly more likely to use GP over BSP. Previous studies have found that GP is used more often than BSP (Floress, Berlinghof, Rader, & Riedesel, 2017; Floress & Jenkins, 2015; Reinke et al., 2013). The use of GP over BSP is likely an indication that BSP is more effortful or purposeful, whereas GP may be more automatic. Furthermore, given that BSP was significantly negatively correlated with off-task behavior, it appears that supporting teachers in using BSP more systematically in the classroom as a universal strategy for promoting positive classroom behavior among students may be more impactful than increasing a teacher's use of GP beyond the rates observed in this study.

A significant relation was found between off-task behavior and BSP, indicating that higher rates of BSP were associated with lower off-task behavior. Interestingly, no other statistically significant correlations between praise and measures of student behavior were found, even though disruptive behavior and off-task behavior were significantly correlated, $r = .683$, $p < .001$. Prior research, which demonstrates the functional relationship between disruptive behavior and BSP, has targeted classrooms or children in need of intervention and implemented BSP to demonstrate that as BSP increases, disruptive behavior decreases (Gable et al., 2009; Lampi, Fenty, & Beaunane, 2005). Classrooms in this study may not have had enough disruptive behavior (5% of intervals) to demonstrate a correlation between BSP and disruptive behavior. In addition, only 30% of the observations collected teacher praise and student behavior concurrently. Thus, the reciprocal nature of teacher use of praise and student behavior was not directly assessed, lessening the potential to find significant associations. Although challenging, future research could implement an observational code that simultaneously gathers teacher use of praise and classroom student behaviors (see Reinke et al., 2015).

Limitations

This study holds promise as an indication of typical rates of praise that occur in elementary classrooms; however, there are additional limitations and subsequently implications for future research to note. First, the current sample only included 28 Caucasian teachers and students were predominately Caucasian in schools where there were low base rates of disruptive and off-task behavior. Many schools throughout the United States have increasingly diverse student populations, and further research should strive to obtain larger teacher samples with diverse student and teacher demographics as this would allow exploration of variations across classrooms and increase in the generalizability of the findings. Second, it is important to note that the student behavior data in this study were sampled (i.e., 10 randomly selected students per observation session) and do not represent the rate of behavior of all of the students in the classroom. Similarly, observations of teacher praise took place during whole-class instruction

and excluded transition times, small group work, and individual support given to students during seatwork. Thus, rates of teacher praise may be higher or lower if other instructional arrangements are included in the observation and readers should be cautious when comparing base rates of teacher praise from this study to other studies that may not use the same measurement procedures.

Additional limitations to consider include self-selection of participants, the time of year in which observations took place, the possibility of reactivity, and the inclusion of classrooms with a small number of students (i.e., private school classrooms ranged from 11 to 13). Approximately 25% of invited teachers participated in the study. It is possible that teachers with better behaved classrooms were more likely to participate, though 32% of participants rated their classroom as somewhat or much more difficult than usual and only 25% indicated that their class was somewhat or much easier than usual. Another limitation is the timing of observations. Data collection for this study was time intensive and occurred over three academic semesters. It is possible that teacher praise and/or student behavior was influenced based on the time in which observations took place.

Another limitation is that four classrooms had a small number of students, and within each grade level, there were sometimes a small number of teachers (e.g., only two teachers in kindergarten and three in fourth grade and fifth grade). Results of the grade-level comparisons should be interpreted with caution due to these small numbers. Additional research should seek out larger samples to make more robust conclusions.

A final limitation is that teacher reprimand rates were not captured in the observations. Reprimand statements could have influenced student responding and this could account for some of the variability of student data in the current study. Future research could gather the ratio of teacher praise to reprimand statements. There is some recent evidence that providing more praise to reprimands in the classroom positively affects student behavior. Reinke, Herman, and Newcomer (2016) found that students who received more positive than negative attention from teachers demonstrated improvements in prosocial behavior over the course of the school year, whereas, students who received more negative to positive teacher attention demonstrated poorer emotional regulation and were observed to display more disruptive behaviors at the end of the year. Finally, the current study included more than 90 hr of observation to assess teacher praise; however, it is unclear how many hours of observation are needed to determine the most accurate assessment of teacher praise. Future research may use generalizability theory (Cronbach, Nageswari, & Gleser, 1963) to determine the total number of hours or observations required to reliably measure teachers' natural use of praise.

Implications for Practice and Research

Our findings have several implications for practice and future research. First, many teachers delivered low rates of praise. This suggests that teachers may be unaware of how to effectively use this easy-to-implement, cost-effective classroom strategy. However, it is our experience that many teachers claim to "know what praise is" or "know how to praise students." Therefore, during training, it should be made clear how effective praise is different from a lay understanding of praise. To do this, trainers could directly demonstrate effective praise and its relation to improved student behavior. One way to do this is through direct training, where teachers are coached in situ to increase their use of praise (Dufrene et al., 2014). Providing direct support in the classroom may increase the integrity with which teachers implement BSP and also increase its positive impact on student behavior.

A second implication is that praise should be specific. Previous research demonstrates that when teachers are taught to use BSP, student disruptive and off-task behavior improves (Ferguson & Houghton, 1992; Gable et al., 2009; Kalis, Vannest, & Parker, 2007). In the current study, an inverse relation was found between teacher BSP and classwide student off-task behavior. When teachers explicitly state which student behavior is being praised, it appears that children are more likely to identify the specific behavior that led to teacher approval and repeat that behavior in the future. One approach for increasing teachers' BSP is to train teachers to self-monitor. Teachers who self-monitor their use of praise are more likely to praise students purposefully and strategically (Haydon & Musti-Rao, 2011; Moore Partin, Robertson, Maggin, Oliver, & Wehby, 2010) and have a better understanding for how their praise directly affects student behavior (Floress & Jenkins, 2015).

Finally, future researchers might replicate the current study with a larger, representative sample to establish benchmarks for effective praise rates. For example, establishing benchmarks for praise that predict positive classroom behavior have the potential to greatly influence prevention programs such as SWPBIS. Although praise is commonly used within the SWPBIS framework to strengthen appropriate student behavior, empirically validated guidelines do not currently exist. Therefore, future research might examine a praise rate or guideline that predicts an acceptably low rate of classroom disruptive behavior, which could be easily incorporated into the SWPBIS framework (Floress & Jenkins, 2015). Benchmarks for teacher praise could be developed and used similarly to academic performance benchmarks provided by curriculum-based measurement systems (e.g., Dynamic Indicators of Basic Early Literacy Skills and AIMSweb). Having a standard would provide an objective measure to assess fidelity of praise within the SWPBIS framework.

In conclusion, although teachers in this study used GP fairly consistently across grade levels, overall teachers could benefit from training and support in systematically integrating BSP into daily practice. Given the connection between BSP and lower off-task behavior in this study and the impact of BSP on student disruptive behavior established in the research literature, increasing teacher use of BSP as a preventive mechanism and possible intervention toward supporting student behaviors can enhance outcomes for all students, including students at risk for school failure.

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