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Classroom-Level Positive Behavior Supports in Schools Implementing SW-PBIS: Identifying Areas for Enhancement

Wendy M. Reinke, PhD¹, Keith C. Herman, PhD¹, and Melissa Stormont, PhD¹

Abstract

This study evaluated the use of classroom-level behavior management strategies that align with School-Wide Positive Behavioral Interventions and Supports (SW-PBIS). Direct observations of universal classroom management strategies were conducted across 33 elementary classrooms in elementary schools implementing SW-PBIS with high fidelity. Findings indicate that classrooms had posted positively stated classroom rules at high rates, whereas teacher use of specific praise and the ratio of positive to negative interactions were less than optimal. Furthermore, classroom teachers with higher rates of general praise were found to report being more efficacious with regard to classroom management. In turn, teachers in classrooms with higher rates of disruptive behavior reported feeling less efficacious. In addition, teachers with lower rates of positive to negative interaction, who used higher rates of harsh reprimands and had higher rates of disruptions, reported higher levels of emotional exhaustion. Implications for developing supports to assist teachers struggling with universal classroom management strategies are described.

Keywords

classroom behavior management, positive behavior interventions and supports, elementary school

Over the past decade, there has been an increasing trend for schools to implement school-wide discipline systems. Nearly 14,000 schools across the United States currently implement School-Wide Positive Behavioral Interventions and Supports (SW-PBIS; see www.pbis.org). The recent shift toward the use of universal systems to support prosocial student behaviors and decrease disruptive behaviors among students has been effective. Research has shown the impact of SW-PBIS in reducing problem behavior and increasing academic performance (Bradshaw, Mitchell, & Leaf, 2010; Horner et al., 2009).

Despite the increased implementation of SW-PBIS or other universal school-level behavior support systems, many teachers continue to struggle with managing student behavior in the classroom (Buell, Hallam, Gamel-McCormick, & Scheer, 1999; Pavri, 2004). For instance, teachers indicate that they consider classroom management to be the most challenging aspect of their job and one in which they receive the least amount of training (Barrett & Davis, 1993; Ingersoll, 2002; Reinke, Stormont, Herman, Puri, & Goel, 2011). School-wide prevention-based systems will not be as effective in supporting positive outcomes for students if ineffective management practices are present at the classroom level.

Ineffective classroom behavior management practices are associated with negative outcomes for students and teachers alike. Research indicates that students in classrooms where behavior is poorly managed receive less academic instruction (Weinstein, 2007) and are more likely to have long-term negative academic, behavioral, and social outcomes than students in well-managed classrooms (Ialongo, Poduska, Werthamer, & Kellam, 2001; Kellam, Ling, Merisca, Brown, & Ialongo, 1998; National Research Council, 2002). Furthermore, teachers find student discipline problems to be a leading source of stress (Supaporn, Dodds, & Griffin, 2003) and a contributor to teacher burnout (Kokkinos, Panayiotou, & Davazoglou, 2005). Furthermore, a recent study found that teachers who experienced higher levels of classroom

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stress from student misbehavior reported lower levels of self-efficacy in classroom management (Klassen & Chiu, 2010). Thus, lack of efficacy, or perceived inability to manage classroom behavior, may contribute to teacher attrition from the field. Nearly half of new teachers leave the profession within 5 years, many citing student misbehavior as a primary reason for leaving (Ingersoll, 2002).

Teachers' Self-Efficacy

General education teachers are expected to effectively manage classroom behaviors with varying levels of support for implementation while maintaining high levels of academic instruction. It is important to understand teacher characteristics that are associated with greater implementation of effective classroom management. Teacher self-efficacy in classroom management is an important area for future research, especially within the context of broader systems change efforts. Bandura (1977, 1982, 1989) suggested that self-efficacy is the mediating variable between knowledge and actual behavior. Thus, teachers who do not feel efficacious in their classroom management skills may be less likely to utilize effective strategies. Teachers' sense of efficacy has been found to be related to instructional practices (Allinder, 1994), proactive and positive classroom management (Woolfolk, 2007), and student achievement and motivation (Caprara, Barbaranelli, Steca, & Malone, 2006). Furthermore, teachers' beliefs about their efficacy have been identified as a factor that strongly influences their implementation of new interventions (Guskey, 1988; Han & Weiss, 2005; Stein & Wang, 1988). Teachers who feel more confident in their use of effective classroom management may indeed be implementing more effective practices (Han & Weiss, 2005). Therefore, information about teacher efficacy may help to identify teachers in need of coaching or additional training. Specifically, teachers who report low efficacy can be identified for more support, especially if low efficacy is associated with specific negative practices.

Teacher Burnout

Another important construct related to teacher implementation of classroom practices is professional burnout. Teacher burnout has been linked to teacher turnover intentions and job absenteeism (Belcastro & Gold, 1983), as well-diminished performance and irritability (Huberman, 1993). This construct contains three components that are related to implementation of classroom practices, including emotional exhaustion, depersonalization, and sense of personal accomplishments from the job (Maslach, Jackson, & Leiter, 1996). In particular, teacher report of emotional exhaustion, defined as the "tired and fatigued feelings that develop as emotional energies are drained" (Maslach et al., 1996, p. 28), is likely to interfere with a teacher's efforts to implement

effective instructional practices, and may influence the development of negative attitudes toward students, which can result in increased negative interactions with students (Lamude, Scudder, & Furno-Lamude, 1992). If emotional exhaustion can be readily assessed and is connected to low levels of teachers' use of effective classroom behavior management practices, teachers reporting high levels could be targeted for additional supports.

Research on classroom-level practices, teacher efficacy, and emotional exhaustion are important areas for exploration within schools implementing SW-PBIS. The majority of research on SW-PBIS has been at the school-wide level, and more research is needed to understand classroom-level characteristics associated with positive outcomes (Stichter et al., 2010). It is also important for teacher perceptions to be compared with direct observation of salient features of SW-PBIS. For instance, a teacher may have the skills and knowledge necessary to implement effective practices, but experiences of emotional exhaustion or lack of efficacy may interfere with the teacher's ability to do so; whereas, another teacher may exhibit low levels of effective practices primarily due to a lack of skills. The approach to supporting these teachers may look different based on the underlying challenge to implementation. Furthermore, past research has underscored the need for direct observation of teacher behavior in addition to teacher self-reports, as teachers often report higher fidelity of implementation related to using specific practices than is found through direct observation (e.g., Noell et al., 2005). Because classrooms within schools using SW-PBIS should be designed to support and extend the school-wide system, the salient features of SW-PBIS can be identified and explored at the classroom level (M. Stormont, Lewis, Beckner, & Johnson, 2008). These include having clear and positively stated classroom rules and expectations, using effective instructional management, effectively reinforcing appropriate behavior, and effectively responding to behavioral violations (see Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008, for a review). The following section provides a description of these classroom-level strategies and the research to support their use.

Effective Classroom Management

Clear and Positively Stated

Classroom Rules and Expectations

One of the fundamental classroom management practices is to first develop a set of classroom rules and expectations. These rules need to be developmentally appropriate, stated positively, and systematically taught. Within the context of SW-PBIS, classrooms develop rules that are aligned with the school-wide expectations (e.g., Be Kind, Be Safe, Be Responsible). This common language supports generalization across school settings. Most classrooms can function

well with three to five rules. Effective rules are (a) age appropriate (in terms of language and expectations); (b) specific and observable; (c) stated positively, indicating what students should be doing rather than what they should not be doing (e.g., keep hands, feet, and objects to yourself; listen when others are talking); (d) easy to understand; and (e) enforceable (Burden, 2006; Grossman, 2004; Scheuermann & Hall, 2008; Sprick, 2006). Research has supported the need for positively stated rules that are then taught systematically (Simonsen et al., 2008).

Effective Instruction

It is also important for teachers to use the time they have with students by maximizing instruction. Not surprisingly, teachers who spend more time teaching have students who learn more. By definition, students who are engaged in instruction (e.g., listening to the teacher, writing, answering a question) are not displaying disruptive or off-task behaviors (e.g., getting out of seat, talking when inappropriate). When students are engaged in academic instruction, they have higher levels of achievement (Greenwood, Terry, & Walker, 1994). Therefore, finding ways to improve engagement in instruction can prevent problem behaviors in the classroom and increase academic achievement. Research indicates that instruction that is rigorous, relevant, and delivered at a pace appropriate to the content is likely to keep students engaged in learning and decrease disruptive behavior (see Simonsen et al., 2008). One way to increase engagement is to provide students with opportunities to respond to academic questions at a pace that maximizes learning and engagement. For instance, increasing the rate at which students were asked to academically respond resulted in improved academic performance in reading (Carnine, 1976; Skinner, Smith, & McLean, 1994) and math (Skinner, Belfiore, Mace, Williams-Wilson, & Johns, 1997). In addition, positive effects have been noted for academic engagement and decreased disruptive behavior (Carnine, 1976; Sutherland, Alder, & Gunter, 2003). An opportunity to respond (OTR) is a teacher behavior that solicits a student response. The Council for Exceptional Children (CEC, 1987) has provided guidelines for the optimal student response rate. These guidelines state that four to six responses (minimum of 3.1) should be elicited from students per minute of instruction on new material (CEC, 1987; Gunter, Hummel, & Conroy, 1998).

Reinforce Student Appropriate Behavior

Research has documented that teachers who interact more positively with students have students who do better academically and socially. Teachers who deliver a high amount of praise typically experience lower off-task or

disruptive behaviors from their students (Espin & Yell, 1994). Praise has shown to increase appropriate behavior of disruptive students (Reinke, Lewis-Palmer, & Martin, 2007) and academic engagement of students (Hall, Lund, & Jackson, 1968). Increasing academic engagement and decreasing disruptive behaviors allow more time for instruction. In addition, praise has been shown to increase the intrinsic motivation of students and help the learner feel more competent (Brophy, 1983; Cameron & Pierce, 1994).

Accordingly, researchers have recommended setting a standard of interacting with students at a ratio of 4 positive interactions to 1 negative interaction (Kalis, Vannest, & Parker, 2007). Even the most challenging students engage in more positive, compliant behavior, on average, than negative behavior. Thus, teachers should attend to students when they are engaging in appropriate behavior and specifically acknowledge their behavior (M. Stormont & Reinke, 2009). In particular, the use of specific praise or praise that includes a description of the behavior being praised (e.g., "Great job working on your math sheet") is effective in decreasing disruptive behaviors in the classroom (Good & Brophy, 2003). However, research has found that teachers do not use behavior-specific praise at high rates (Brophy, 1983; Reinke, Lewis-Palmer, & Merrell, 2008). Low rates of specific praise at the classroom level have also been documented within programs that have participated in professional in-service trainings on SW-PBIS (M. Stormont, Covington, & Lewis, 2006).

Responding to Behavioral Violations

Historically, the traditional response to students' problem behavior in schools was to only implement increasingly aversive consequences, which was ineffective in reducing problem behavior and in many cases exacerbated existing problems (Sugai, Sprague, Horner, & Walker, 2000). When rule violations occur, it is important to have planned, consistent, and explicit responses that direct student attention to the specific rule they violated and direct professionals to needs for environmental changes and/or instruction (M. Stormont et al., 2008). When teachers revert to making harsh or critical comments, students may actually increase disruptive behaviors in their classrooms (Van Acker, Grant, & Henry, 1996). In contrast, the use of explicit reprimands or brief concise remarks that communicate to a student what to do instead, following an undesired behavior, decreases such behavior (Abramowitz, O'Leary, & Fattersak, 1988; McAllister, Stachowiak, Baer, & Conderman, 1969). Furthermore, effective classroom managers use a continuum of strategies for responding to inappropriate behavior, including planned ignoring and praising students exhibiting the appropriate behavior (Reinke, Herman, & Sprick, 2011).

Purpose

As previously stated, classrooms within schools utilizing SW-PBIS should be designed to support and extend the school-wide system; however, there is a dearth of research on whether this actually occurs. To this end, the purposes of this study were to examine teachers' use of specific classroom-level practices that align with SW-PBIS. In addition, we evaluated the relationship between teachers' reported self-efficacy with classroom management and emotional exhaustion, and observed classroom management practices and students' disruptive behavior. We expected to find that some SW-PBIS features that are easy to generalize to the classroom, such as posting of positively stated rules and expectations, would be utilized by a high number of teachers, whereas teacher practices, particularly having higher rates of praise to reprimands (4:1 ratio), would occur less frequently. Furthermore, while exploratory in nature, we hypothesized that teachers with a lower ratio of positive to negative interactions, higher use of harsh reprimands, and higher rates of student disruptive behavior would report lower self-efficacy and be more likely to score high on a measure of emotional exhaustion. We also expected that teachers who used higher rates of praise would score higher on self-efficacy and would be less likely to report feeling emotionally exhausted. However, in accordance with past research, we expected that teachers would use few specific praise statements.

Method

Participants and Setting

Participants were teachers recruited into a large group randomized trial evaluating the efficacy of the Incredible Years Teacher Classroom Management Program (Webster-Stratton, 1997). Only data collected prior to the implementation of the intervention are presented in this study. Participants included 33 elementary teachers (K to third grades) from three elementary schools in a large urban mid-western school district implementing SW-PBIS with high fidelity. Most participants were female (97%) and White (73%). A total of 27% of participants were African American. Participants' years of teaching experience ranged from 2 to 29 years, with an average of 12.71 years ($SD = 6.54$). Educators held a graduate-level degree (39%) or undergraduate degree (61%). Table 1 provides school demographic information, systematic evaluation tool (SET) scores broken down by domain, and the overall SET score for the three participating schools. The SET measures implementation of SW-PBIS at the school level. A score of 80% or higher for the overall score as well as 80% on the expectations taught subcategory indicates schools are implementing SW-PBIS with high fidelity (see Horner et al., 2004). SET data were

Table 1. Participating School Demographics and SW-PBIS Fidelity Indicators From the SET

Demographic/SET scores	School 1	School 2	School 3
2010–2011 enrollment	358	363	407
Free or reduced lunch (%)	68	43	63
Student racial composition (%)			
African American	98	37	97
White	2	60	3
Other	0	3	0
SET scores (%)			
Behavioral expectations defined	100	100	100
Behavioral expectations taught	100	100	100
Behavioral expectations rewarded	100	100	100
Response to rule violations	75	63	50
Data to monitor student behavior	100	100	100
Management support	81	67	88
District-level support	100	100	100
Overall score	94	90	91

Note. SW-PBIS = School-Wide Positive Behavioral Interventions and Supports; SET = systematic evaluation tool.

collected by evaluators independent of the school district in the spring of 2010. These evaluators are individuals employed by an outside agency that provides training and support to regional school districts in PBIS. These evaluators received training in administration of the SET by one of the authors of the SET.

Measures

Direct observation of student and teacher behavior. Independent observers conducted direct observations of student disruptive behavior as well as teachers' use of general praise, specific praise, explicit reprimands, harsh reprimands, and opportunities to respond using Multi-Option Observation System for Experimental Studies (MOOSES; Tapp, 2004). MOOSES is a computer-based observation system designed for use by independent observers using hand computers to record student–student and student–teacher interaction in the classroom. Prior to data collection, six observers were trained for 4 weeks using videos and practice sessions. Reliability checks were conducted on 30% of observations, and observers received continuing supervision to ensure against observer drift. The overall mean percentage agreement across raters was 82%, ranging from 50% to 100%. MOOSES utilizes second-by-second comparison of raters to determine reliability, and an overall reliability of 80% is considered acceptable (Tapp, 2004). The observers not only kept a frequency count of student and teacher behaviors

across all students in the classroom but also simultaneously collected data on teacher behaviors directed to a target student. Every 5 min, a different target student was observed in the classroom. All the 5-min observations within the classroom were aggregated, producing an overall total of teacher and student behaviors for that classroom. Therefore, if a classroom had fewer students, the duration of the aggregate classroom observation would be lower. However, all variables were converted to a common metric by dividing the number of behaviors observed by the total minutes observed, producing the rate of each behavior occurring in the classroom, allowing for comparison across classrooms. Classroom observations were each completed in a single day early in the school year (October) during either reading or math instruction. The length of direct observation per classroom ranged from 20 min to 80 min with a mean of 47 min across classrooms. The student and teacher behaviors were operationally defined as follows: Student disruptive behavior was defined as any behavior that interrupts instruction; general praise was defined as any verbal statement or gesture that indicates approval and does not name a specific behavior; specific praise was defined as any verbal statement or gesture that indicates approval and names a specific behavior; explicit reprimands were defined as verbal comments or gestures by the teacher that indicate disapproval of behavior, but were concise (brief) and issued in a normal speaking tone; and harsh reprimands were defined as verbal comments or gestures indicating disapproval of a behavior that is prolonged, uses excessive force, or uses a voice louder than typical for the setting or a harsh, critical, or sarcastic tone (e.g., teacher grabbing a student by the arm, reprimand that stops instruction and lasts for 30 s or more). Opportunities to respond were defined as an instructional prompt (statement, gesture, or visual cue) that requires an immediate academic response to the teacher. See Table 2 for operational definitions, examples, and nonexamples of targeted behaviors.

Classroom Ecology Checklist. Immediately following observations in the classroom, the independent observers completed a Classroom Ecology Checklist (Reinke & Lewis-Palmer, 2005). The Classroom Ecology Checklist is a 20-item questionnaire that assesses the classroom on the following dimensions: (a) classroom structure, (b) behavioral expectations, (c) instructional management, (d) interacting positively, (e) responding to appropriate behavior, and (f) responding to inappropriate behavior. Cronbach's alpha for the measure is .86. For the purpose of this study, we used specific items that were directly linked with effective rules and expectations, effective instructional practices, reinforcing appropriate behavior, and effective practices for discouraging inappropriate behavior that align with the salient SW-PBIS strategies identified for this study. These items include (a) rules and expectations were positively stated and visible in the classroom, (b) classroom expectations

were clear when observing the class, (c) teacher gained students' attention prior to instruction, (d) more than 70% of time was devoted to instruction, (e) teacher provided group and individual opportunities to respond, (f) a system for documenting appropriate behavior was used, (g) teacher used a continuum of consequences for responding to inappropriate behavior, and (h) a system for documenting inappropriate behavior was used. Raters provided a global rating of each item on the checklist following completion of no less than 20 min of direct observation during instructional time. Raters used tangible indicators (e.g., rules posted, schedule posted) as well as overall impression (e.g., students followed rules, majority of observation teacher provided instruction) when scoring each item.

Teaching efficacy. The *Teacher Sense of Self-Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001) is a 24-item adaptation of Gibson and Dembo's teacher efficacy scale. Factor analysis revealed three 8-item subscales reflecting (a) efficacy for instructional strategies, (b) efficacy for classroom behavior management, and (c) efficacy for student engagement. The 8-item efficacy for classroom management subscale was administered to teachers. Cronbach's alpha for the subscale is .92. The measure was completed by all participating teachers in October of the school year.

Emotional exhaustion. The teacher version of the Maslach Burnout Inventory (MBI; Maslach, Jackson, & Leiter, 1997) is a 22-item measure assessing how frequently teachers experience feelings of burnout. Each item (e.g., "Working with students all day really is a strain for me") is measured on a 7-point scale ranging from 1 = *never* to 7 = *every day*. The MBI also contains three subscales of burnout: Emotional Exhaustion (9 items), Depersonalization (5 items), and Personal Accomplishment (8 items). These subscales can be analyzed separately or as a whole. The alpha for the total burnout measure is .87. For the purposes of this study, emotional exhaustion was the only subscale used. Example items include "I feel emotionally drained from my work" and "I feel I am working too hard on my job." The alpha for the Emotional Exhaustion subscale is .90. The measure was completed by all participating teachers in October.

Procedures

Teachers from three elementary schools teaching in kindergarten, first, second, and third grade were eligible for participation in the study. The authors met with eligible teachers to explain the study and outline data collection procedures. Interested teachers then provided informed consent to participate in the study (100% eligible consented). Next, parent consent forms were sent home to all students in the participating teachers' classrooms. Parents returned forms indicating whether they gave permission for their child to be observed. A total of 83% of parents provided informed consent. Students for whom consent was not

Table 2. Operational Definitions of Direct Observation Variables

Teacher frequency code	Code T if directed to target student, code O if directed to anyone other than target student or by a group of students
Specific praise Spf-T Spf-O	Verbal statement or gesture that indicates approval and <i>names a specific behavior</i> . <i>Example:</i> "Thank you for raising your hand," "Everyone has their eyes on me. Good." <i>Nonexample:</i> "Nice work," "Good," "Eyes on me, please."
General praise Gen-T Gen-O	Verbal statement or gesture that indicates approval and <i>does not name a specific behavior</i> . <i>Example:</i> Thumbs up, high five, pat on the back, points, tokens, stickers; "Kennedy, thank you," "Super job," "Good work!" <i>Nonexample:</i> "Kennedy, thank you putting your things away quietly," "Super, you guys finished your work."
Explicit reprimand exRep-T exRep-O	Verbal comments or gestures by teacher to indicate disapproval of behavior; reprimand is concise (brief) in a normal speaking tone. <i>Example:</i> "China, please have a seat" (when China gets out of her seat), "I am talking, eyes on me" (when group of students are talking), use of proximity, finger to lips when students are talking. <i>Nonexample:</i> "Heads down on your desk when you are done." Teacher rolls eyes at students or uses a deep exhaustive sigh before or after a reprimand. "No, the answer is 12."
Harsh reprimand haRep-T haRep-O	Verbal comments or gestures indicate disapproval of behavior using a voice louder than typical for setting or harsh, critical, or sarcastic tone. <i>Example:</i> Teacher grabs student, using excessive physical control. Teacher says sarcastically, "What a surprise, you haven't finished your work" or "Shut-up." <i>Nonexample:</i> Teacher writes point on board toward loss of recess without stopping instruction. "Eyes on me, please."
Opportunity to respond oppResp	Instructional prompt (statement, gesture or visual cue) that requires immediate academic response to teacher. <i>Example:</i> "Who can tell me what 4 × 4 equals?" "Raise your hand if you hear the letter 'a' in <i>cat</i> ," "Roland, read the next question." <i>Nonexample:</i> "Please put your notebooks away," "How many people got all of the problems correct?" "Keegan, do you need help?" "Eyes on me."
Student frequency codes	Code T if behavior is demonstrated by target student, O if behavior is demonstrated by student other than the target student or group of students
Disruptive disrp-T disrp-O	Any statement or action by an individual student or group of students that interferes with ongoing classroom activities for the teacher and/or one or more peers. <i>Examples:</i> Out of seat without permission talking to peer, ripping or crumpling paper in a loud way, making covert noises, student calls out answers when expectation is to raise hand. <i>Nonexamples:</i> Student accidentally drops a book or other object, making a loud noise; appropriate coughing or sneezing noises.

received were not included as target students during classroom observations. Data collection occurred across the first 3 weeks of October with observations and teacher completion of self-report measures occurring simultaneously. Teachers received a small stipend for their time in completing the measures.

Analytic Plan

First, rates of observed behaviors and the ratio of positive to negative interactions were analyzed descriptively for the full sample. This information provided the range in use of behaviors among all teachers. Next, the mean rates and ranges of observed teacher and student behaviors in the classroom were reported by the school. In addition, the mean percentages on items from the Classroom Ecology Checklist that are well aligned with SW-PBIS for each

school were determined. This information allowed for some comparison, although not a direct comparison, with SET scores for each school. Finally, linear regression analyses with direct observation variables as dependent variables and teacher self-efficacy and emotional exhaustion as predictor variables were conducted.

Results

Overall, teachers' ratios of positive to negative interactions were less than optimal. Ideally, teachers will provide four positive interactions to every one negative interaction with students. In this sample, the mean rates indicated that teachers provided more reprimands than praise to students. Only one teacher in the sample met the criteria of four positives to one negative. This teacher actually had a 4.76:1 ratio. Two other teachers in the sample had higher rates of

Table 3. Mean Rates and Range of Observed Teacher and Student Behavior in the Classroom

Variable	Overall sample	School 1 (SET = 94%)	School 2 (SET = 90%)	School 3 (SET = 91%)
Total praise	0.56 (0.02–1.74)	0.53 (0.20–1.22)	0.54 (0.23–0.93)	0.60 (0.02–1.74)
General praise	0.43 (0.02–1.29)	0.38 (0.016–0.76)	0.42 (0.20–0.73)	0.47 (0.02–1.29)
Specific praise	0.13 (0.00–0.47)	0.14 (0.03–0.47)	0.13 (0.03–0.23)	0.13 (0.00–0.46)
Total reprimands	0.67 (0.20–1.34)	1.04 (0.69–1.34)	0.67 (0.32–1.05)	0.43 (0.20–0.69)
Reprimand	0.65 (0.20–1.30)	1.01 (0.67–1.30)	0.64 (0.28–1.00)	0.41 (0.20–0.58)
Harsh reprimand	0.02 (0.00–0.11)	0.03 (0.00–0.09)	0.03 (0.00–0.09)	0.01 (0.00–0.11)
Opportunities to respond	1.48 (0.00–7.03)	1.41 (0.00–5.80)	1.28 (0.03–3.25)	1.68 (0.00–7.03)
Student disruptions	0.72 (0.23–1.40)	1.07 (0.71–1.40)	0.69 (0.30–1.05)	0.50 (0.23–0.76)

Note. SET = systematic evaluation tool.

Table 4. Percentage of Classrooms Observed to Use Effective Behavioral and Instructional Practices

CEC item	School 1 (SET = 94%)	School 2 (SET = 90%)	School 3 (SET = 91%)
Classroom routines and expectations are clearly defined, stated in the positive, and visible.	100	73	100
It is easy to figure out the classroom expectations when observing the class.	89	100	92
The teacher gains the attention of all students at the beginning of a lesson or transition.	89	100	100
Based on review of the classroom schedule and observation, it appears that 70% or more of class time is allocated to academic instruction.	89	91	69
The teacher solicits group and individual responses to questions with an effort to provide the majority of students with individual opportunities to respond.	89	100	92
There is a system for documenting and rewarding appropriate student behavior.	22	18	31
There is a documentation system for managing specific behavioral violations.	33	9	39
The teacher uses a continuum of consequences to discourage rule violations.	89	73	77

Note. CEC = Classroom Ecology Checklist; SET = systematic evaluation tool.

positive to negative, with both having a 2:1 ratio. The overall range for the sample with regard to positive to negative ratio was 4.76:1 to 1:10. In reviewing the data from the full sample, teachers were more likely to provide general praise than specific praise. Only two teachers in the sample used specific praise more than general praise in the classroom. The use of harsh reprimands was very minimal across all schools. The rate of opportunities to respond was generally less than optimal. Research suggests that teachers provide at least three to five opportunities during teacher-led instruction (CEC, 1987). However, the rates varied. Kindergarten teachers were more likely to be observed providing three or more opportunities per minute, with four out of eight kindergarten teachers meeting this criterion. One second grade teacher also met this criterion, but most teachers provided one or fewer opportunities per minute. The mean rates of praise, reprimands, opportunities to respond, and student disruptions for the full sample and by school are provided in Table 3.

Observers completed the Classroom Ecology Checklist following classroom observations. The percentage of

classrooms within each school using the strategies is provided in Table 4. Classrooms typically had posted positively stated rules and expectations. School 2 had three classrooms in which this was not the case. However, observers indicated that classroom expectations were clear to someone coming into the classroom. Furthermore, two of the schools were rated as having considerable time devoted to instruction. Across the three schools, observers indicated that documentation systems for rewarding student behavior and for recording inappropriate behavior were not widely utilized.

In addition to reviewing the observed classroom practices of the teachers in the sample, we evaluated the relations between teacher practices with teacher's reports of efficacy in classroom management and emotional exhaustion. Table 5 provides a summary of the findings for teachers' use of general praise, specific praise, explicit reprimands, harsh reprimands, and positive to negative ratio with both outcomes. Results indicated a positive relation between teachers' use of general praise and self-efficacy with classroom management. Rate of student disruptions was negatively related to

Table 5. Results of Observed Variables Predicting Teacher-Reported Efficacy and Emotional Exhaustion

Observed variable	Teacher efficacy, β (SE)	Emotional exhaustion, β (SE)
Positive to negative ratio	.22 (0.34)	-.34* (0.25)
General praise	.38* (0.05)	-.25 (0.04)
Specific praise	.02 (0.02)	.19 (0.02)
Explicit reprimand	-.32 (0.06)	.29 (0.05)
Harsh reprimand	-.32 (0.01)	.36* (0.01)
Student disruptions	-.34* (0.06)	.36* (0.05)

* $p < .05$.

self-efficacy. Teachers' reports of emotional exhaustion were positively related to harsh reprimands and student disruptions. Emotional exhaustion was negatively related to the positive to negative ratio. Specifically, teachers with lower rates of positive than negative interactions with students reported feelings of emotional exhaustion. The relation between praise and emotional exhaustion was not statistically significant.

Discussion

The purpose of this study was to examine teachers' use of specific classroom-level practices that align with SW-PBIS and the association between these practices and teacher-reported self-efficacy in classroom management and emotional exhaustion. As expected, results indicated that some SW-PBIS features in the classroom were used by a high number of teachers. However, this study adds to the research in this area by documenting some potential disconnects between high implementation of SW-PBIS at the school level, according to the SET, and implementation of PBIS strategies in the classroom. These findings indicate that some dimensions of SW-PBIS may be more easily incorporated into the classroom without further training than others. In addition, teacher reports of efficacy and emotional exhaustion were related to behaviors observed in the classroom. This gives credence to teacher perceptions and their impact on classroom behaviors. The main findings and implications are discussed.

Observed Classroom Management Practices

Teacher use of specific praise was low, and higher rates of praise to reprimands (4:1 ratio) were less likely to be observed. In fact, only 1 out of 33 teachers was observed to have an optimal positive to negative ratio. When praise was observed in the classroom, it was much more likely to be general praise than specific praise. Specific praise is a higher quality of praise because it communicates teacher expectations to students while also promoting successful student

behaviors (Brophy, 1983). This simple effective classroom management strategy could be easily incorporated into the daily practice of teachers if the appropriate supports are in place (Reinke et al., 2007; Reinke et al., 2008). For example, school-based PBIS coaches or consultants could work with teachers in planning how and when to use specific praise (M. Stormont & Reinke, 2009). Teachers could use visual reminders to increase their use of praise, set a goal of 4:1 positive to negative interactions, and audio record themselves or have a coach come in to determine whether they are meeting the goal, or work to "double-up" on praise by providing multiple praise statements to students exhibiting a behavior the teacher would like to increase. Research has found that when teachers increase their use of praise, their use of reprimands decreases (e.g., Reinke et al., 2007; M. A. Stormont, Smith, & Lewis, 2007).

In addition, this study found that the rate of opportunities to respond varied and trended toward less than optimal rates. Developing strategies to support teachers in increasing their rate of opportunities to respond, such as breaking down academic problems into smaller steps and using flash cards, can support increases in student's engagement (Sutherland et al., 2003). Furthermore, each OTR also provides an opportunity for praise (Sutherland, Wehby, & Yoder, 2002). It is important that the use of simple strategies should be tried before the use of more intrusive strategies. Research has found that, even among children with high externalizing behaviors, teacher use of praise and precorrective statements was related to decreases in problem behavior (Smith, Lewis, & Stormont, 2010). Teachers may need data-based performance feedback on their use of these simple strategies to effectively and consistently increase them in the classroom (Reinke et al., 2008). When trying to increase the use of a strategy implemented with low rates, the need for feedback appears to be critical for sustaining the practice (Noell et al., 2005). Successful implementation of a new strategy, particularly if positive student behaviors are linked to this new practice, will increase the likelihood that teachers will use this strategy in the future (Han & Weiss, 2005).

This study found evidence that some effective classroom management variables were indeed in place at the classroom level. All three schools had high SET scores and moderately high Classroom Ecology Checklist scores on the following items: Rules and expectations were positively stated and visible, classroom expectations were clear, teacher gained attention of the students prior to instruction, more than 70% of time was devoted to instruction, teacher provided group and individual opportunities to respond, and teacher used a continuum of consequences for responding to inappropriate behavior. Although the schools scored above 80% on some of these items, some had scores in the 60% to 70% range, which indicates need for improvement. Having a system for reviewing whether these effective classroom management strategies are in place from which teachers receive feedback

and support toward implementing the practice could result in better student outcomes. For instance, the school administrator or PBIS coach could conduct a walkthrough of classrooms, using a measure similar to the Classroom Ecology Checklist to identify what practices are in place and those in which the teacher needs additional supports or coaching to implement. Use of these effective strategies will support positive student outcomes. When teachers provide clear expectations, students have fewer disruptive behaviors, allowing for more time spent in academic instruction (Grossman, 2004; Witt, VanDerHeyden, & Gilbertson, 2004).

The specific areas of need identified with the Classroom Ecology Checklist for schools with high overall scores on the SET include establishing systems for documenting and rewarding appropriate student behavior and having a documentation system for managing specific behavior violations. Within the context of tiered prevention models such as SW-PBIS and response to intervention, there is increased need for teachers to be skilled in the use of universal behavior and academic supports, and data collection to monitor student's progress. A recent study found that some teachers may need more support for establishing these systems and understanding how these systems provide data on effectiveness of strategies to support appropriate behavior and deter inappropriate behavior (M. Stormont, Reinke, & Herman, 2011). Behavior consultants, PBIS coaches, and school psychologists need to be prepared to support teachers in developing new skills and understanding the need for documentation systems.

Observed Practices, and Teacher Efficacy and Emotional Exhaustion

Main findings from this study related to teacher efficacy indicated that teachers with higher rates of general praise rated themselves as more efficacious with regard to classroom behavior management, whereas rates of general praise were negatively related to emotional exhaustion, although not statistically significant. Teachers' use of reprimands (explicit or harsh) was not predictive of low teacher self-efficacy. However, teachers using higher rates of harsh reprimands reported feeling higher levels of emotional exhaustion. Last, teachers in classrooms with higher rates of disruptions reported feeling less efficacious and had higher levels of emotional exhaustion.

These findings have important implications for supporting teachers in increasing their use of effective classroom management practices. Teaching is an incredibly challenging profession, and the need for qualified, effective teachers is imperative to student success. However, many teachers are not adequately prepared to manage behavior problems in the classroom; some even enter the workforce without having taken a single course on behavior management (Barrett & Davis, 1993; Evertson & Weinstein, 2006). In fact, half

of new teachers leave the profession within 5 years, many due to the difficulty of working with challenging student behaviors (Ingersoll, 2002). As a result, the cost of losing teachers significantly impacts students. Monies that could be directed to student programs must instead go toward the recruitment of new teachers. It has been estimated that the cost of teacher turnover in public schools is more than 7 billion dollars a year (National Commission on Teaching and America's Future, 2007). Teachers who leave the field report feeling isolated and having few supports. Therefore, providing teachers with the supports and tools they need for effective classroom management may reduce teacher turnover. Furthermore, providing teachers with access to a coach who can support implementation of new and effective classroom practices could lead to increased skills and confidence in the use of new practices. This in turn can lead to increased efficacy among teachers (Han & Weiss, 2005) and likely reductions in feelings of emotional exhaustion.

Limitations

Although the findings of this study have important implications for supporting the transfer of effective classroom management practices into real-world classrooms, there are a few limitations that must be considered. First, the sample for the study includes 33 elementary teachers from the same school district, limiting the generalizability of the findings. It is possible that, if a larger sample was used across different school districts or with schools from a different context (i.e., rural school), the findings may have been different. In addition, the direct observation data are taken from 1 day in the classroom. Data across a number of days are recommended to ensure that the data do not represent one particularly good or challenging day. Therefore, this study is providing only a glimpse into classrooms. In addition, reliability of an observation variable was occasionally lower than optimal; typically for low-occurring behaviors when one observer missed or coded the variable outside the allotted time period. Second, the study was limited to three schools implementing SW-PBIS with high fidelity according to the SET, according to the regional PBIS support agency. A sample of schools not implementing SW-PBIS was not accessed. Therefore, it would be interesting to compare the level of effective classroom management practices in place across schools that are implementing and are not implementing SW-PBIS. However, this study has value in identifying potential areas that SW-PBIS teams could target for support to general education classroom teachers. Last, the findings from this study are cross-sectional in nature. Thus, we can only conclude that observed practices and teacher report of efficacy and emotional burnout are associated with one another, but causality cannot be determined.

Future Directions

Future research that evaluates the practices of teachers across a larger sample in schools implementing SW-PBIS and a sample not implementing a school-wide discipline system could serve to better determine how SW-PBIS impacts the practices of teachers in their classrooms. Although it appears that SW-PBIS training and implementation have increased teachers' use of effective practices, this is difficult to evaluate without a comparison group. Additional research could also assess the impact of coaching toward increasing teacher implementation of effective classroom management practices. Furthermore, research that focuses on identifying teachers in need of additional supports, the use of a brief screening measure, or walkthrough assessments would greatly add to the literature.

Summary

Overall, given the need to support teacher retention in the field and protect children from negative teacher–student interactions, data from this study underscore the importance of assessing behavior and instructional management practices at the classroom level. Traditional professional development methods are not effective in changing teachers' classroom practices (see Fixen, Naom, Blase, Friedman, & Wallace, 2005), and teachers may need varying levels and different types of supports. Finding ways to identify teaching practices that are less likely to generalize from SW-PBIS trainings and in addition to providing additional training with ongoing systematic on-site supports to teachers could positively impact large numbers of students through an increase in effective teacher classroom management.

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References

- Abramowitz, A. J., O'Leary, S. G., & Futersak, M. (1988). The relative impact of long and short reprimands on children's off-task behavior in the classroom. *Behavior Therapy, 19*, 243–247. doi:10.1016/S0005-7894%2888%2980046-7
- Allinder, R. M. (1994). The relationship between efficacy and the instructional practices of special education teachers and consultants. *Teacher Education and Special Education, 17*, 86–95. doi:10.1177/088840649401700203
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191–215. doi:10.1037/0033-295X.84.2.191
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*, 122–147. doi:10.1037/0003-066X.37.2.122
- Bandura, A. (1989). Regulation of cognitive processes through perceived self-efficacy. *Developmental Psychology, 25*, 729–735. doi:10.1037/0012-1649.25.5.729
- Barrett, E. R., & Davis, S. (1993). Perceptions of beginning teachers' needs in classroom management. *Teacher Education and Practice, 11*, 22–27.
- Belcastro, P. A., & Gold, R. S. (1983). Teacher stress and burnout: Implications for school health personnel. *Journal of School Health, 53*, 404–407. doi:10.1111/j.1746-1561.1983.tb03148.x
- Bradshaw, C. R. S., Mitchell, M., & Leaf, P. (2010). Examining the effects of schoolwide positive behavior interventions and supports on student outcomes: Results from a randomized controlled effectiveness trial in elementary schools. *Journal of Positive Behavior Interventions, 12*, 133–148. doi:10.1177/1098300709334798
- Brophy, J. E. (1983). Classroom organization and management. *Elementary School Journal, 83*, 265–285. doi:10.1086/461318
- Buell, M., Hallam, R., Gamel-McCormick, M., & Scheer, S. (1999). A survey of general and special education teachers' perceptions and in-service training needs concerning inclusion. *International Journal of Disability, Development and Education, 46*, 143–156.
- Burden, P. (2006). *Classroom management: Creating a successful K-12 learning community*. Hoboken, NJ: Wiley.
- Cameron, J., & Pierce, W. (1994). Reinforcement, reward, and intrinsic motivation: A meta-analysis. *Review of Educational Research, 64*, 363–423. doi:10.2307/1170677
- Caprara, G., Barbaranelli, C., Steca, P., & Malone, P. (2006). Teachers' self-efficacy beliefs as determinants of job satisfaction and students' academic achievement: A study at the school level. *Journal of School Psychology, 44*, 473–490. doi:10.1016/j.jsp.2006.09.001
- Carnine, D. W. (1976). Effects of two teacher-presentation rates on off-task behavior, answering correctly, and participation. *Journal of Applied Behavior Analysis, 9*, 199–206. doi:10.1901/jaba.1976.9-199
- Council for Exceptional Children. (1987). *Academy for effective instruction: Working with mildly handicapped students*. Reston, VA: Author.
- Espin, C., & Yell, M. (1994). Critical indicator of effective teaching for preservice teachers: Relationships between teaching behaviors and ratings of effectiveness. *Teacher Education and Special Education, 17*, 154–169. doi:10.1177/088840649401700303
- Evertson, C. M., & Weinstein, C. S. (2006). Classroom management as a field of inquiry. In C. M. Evertson & C. S. Weinstein

- (Eds.), *Handbook of classroom management: Research, practice, and contemporary issues* (pp. 3–15). Mahwah, NJ: Lawrence Erlbaum.
- Fixen, D., Naoom, S., Blase, K., Friedman, R., & Wallace, F. (2005). *Implementation research: A synthesis of the literature* (FMHI Publication #231). The National Implementation Research Network, Louis de la Parte Florida Mental Health Institute, University of South Florida.
- Good, T., & Brophy, J. (2003). *Looking in classrooms* (9th ed.). Boston, MA: Allyn & Bacon.
- Greenwood, C. R., Terry, B., & Walker, H. (1994). Confirming a performance-based instructional model. *School Psychology Review, 23*, 652–668.
- Grossman, H. (2004). *Classroom behavior management for diverse and inclusive schools*. New York, NY: Rowman & Littlefield.
- Gunter, P. L., Hummel, J. H., & Conroy, M. A. (1998). Increasing correct academic responding: An effective intervention strategy to decrease behavior problems. *Effective School Practices, 17*, 55–62.
- Guskey, T. (1988). Teacher efficacy, self-concept, and attitudes towards the implementation of instructional innovation. *Teaching and Teacher Education, 4*, 63–69. doi:10.1016/0742-051X(88)90025-X
- Hall, R., Lund, D., & Jackson, D. (1968). Effects of teacher attention on study behavior. *Journal of Applied Behavior Analysis, 1*, 1–12. doi:10.1901/jaba.1968.1-1
- Han, S. S., & Weiss, B. (2005). Sustainability of teacher implementation of school-based mental health programs. *Journal of Abnormal Child Psychology, 33*, 665–679.
- Horner, R. H., Sugai, G., Smolkowski, K., Eber, L., Nakasato, J., Todd, A. W., & Esperanza, J. (2009). A randomized, wait-list controlled effectiveness trial assessing school-wide positive behavior support in elementary schools. *Journal of Positive Behavior Interventions, 11*, 133–144. doi:10.1177/1098300709332067
- Horner, R. H., Todd, A., Lewis-Palmer, T., Irvin, L., Sugai, G., & Boland, J. (2004). The School-Wide Evaluation Tool (SET): A research instrument for assessing school-wide positive behavior support. *Journal of Positive Behavior Interventions, 6*, 3–12.
- Huberman, M. (1993). Burnout in teaching careers. *European Education, 25*, 47–69.
- Ialongo, N., Poduska, J., Werthamer, L., & Kellam, S. (2001). The distal impact of two first-grade preventive interventions on conduct problems and disorder in early adolescence. *Journal of Emotional and Behavioral Disorders, 9*, 146–160. doi:10.1177/106342660100900301
- Ingersoll, R. M. (2002, August 15). High turnover plagues schools. *USA Today*, p. 13A.
- Kalis, T. M., Vannest, K. J., Parker, R. (2007). Praise counts: Using self-monitoring to increase effective teaching practices. *Preventing School Failure, 51*, 20–27. doi:10.3200/PSFL.51.3.20-27
- Kellam, S., Ling, X., Merisca, R., Brown, H., & Ialongo, N. (1998). The effect of the level of aggression in the first grade classroom on the course and malleability of aggressive behavior into middle school. *Development and Psychopathology, 10*, 165–185. doi:10.1017/S0954579498001564
- Klassen, R., & Chiu, M. (2010). Effects of teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology, 102*, 741–756. doi:10.1037/a0019237
- Kokkinos, C. M., Panayiotou, G., & Davazoglou, A. M. (2005). Correlates of teacher appraisals of student behaviors. *Psychology in the Schools, 42*, 79–89.
- Lamude, G. K. G., Scudder, J., & Furno-Lamude, D. (1992). The relationship between student resistance strategies in the classroom to teacher burnout and teacher type-A behavior. *Journal of Social Behavior and Personality, 7*, 597–610.
- Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach burnout inventory manual* (3rd ed.). Yalo Alte, CA: Consulting Psychologists Press.
- Maslach, C., Jackson, S. E., & Leiter, M. P. (1997). *Maslach Burnout Inventory*. In C. P. Zalaquett & R. J. Wood (Eds.), *Evaluating stress: A book of resources* (3rd ed., pp. 191–218). Lanham, MD: Scarecrow Education.
- McAllister, L. W., Stachowiak, J. G., Baer, D. M., & Conderman, L. (1969). The application of operant conditioning techniques in a secondary school classroom. *Journal of Applied Behavior Analysis, 2*, 277–285. doi:10.1901/jaba.1969.2-277
- National Commission on Teaching and America's Future. (2007). *Policy brief: The high cost of teacher turnover*. New York, NY: Author.
- National Research Council. (2002). *Minority students in special and gifted education* (Report to the Committee on Minority Representation in Special Education). Washington, DC: National Academy Press.
- Noell, G. H., Witt, J. C., Slider, N. J., Connell, J. E., Gatti, S. L., Williams, K. L., . . . Duhon, G. J. (2005). Treatment implementation following behavioral consultation in schools: A comparison of three follow-up strategies. *School Psychology Review, 34*, 87–106.
- Pavri, S. (2004). General and special education teacher's preparation needs in providing social support: A needs assessment. *Teacher Education and Special Education, 27*, 433–443. doi:org/10.1177/088840640402700410
- Reinke, W. M., Herman, K. C., & Sprick, R. (2011). *Motivational interviewing for effective classroom management: The classroom check-up*. New York, NY: Guilford.
- Reinke, W. M., & Lewis-Palmer, T. (2005). *Classroom Ecology Checklist*. Eugene: University of Oregon.
- Reinke, W. M., Lewis-Palmer, T., & Martin, E. (2007). The effect of visual performance feedback on teacher use of behavior-specific praise. *Behavior Modification, 31*, 247–263. doi:10.1177/0145445506288967
- Reinke, W. M., Lewis-Palmer, T., & Merrell, K. (2008). The classroom check-up: A class wide teacher consultation model for

- increasing praise and decreasing disruptive behavior. *School Psychology Review*, 37, 315–332.
- Reinke, W. M., Stormont, M., Herman, K. C., Puri, R., & Goel, N. (2011). Supporting children's mental health in schools: Teacher perceptions of needs, roles, and barriers. *School Psychology Quarterly*, 26, 1–13. doi:10.1037/a0022714
- Scheuermann, B. K., & Hall, J. A. (2008). *Positive behavioral supports for the classroom*. Upper Saddle River, NJ: Pearson.
- Simonsen, B., Fairbanks, S., Briesch, A., Myers, D., & Sugai, G. (2008). Evidence-based practices in classroom management: Considerations for research to practice. *Education & Treatment of Children*, 31, 351–380. doi:10.1353/etc.0.0007
- Skinner, C. H., Belfiore, P. J., Mace, H. W., Williams-Wilson, S., & Johns, G. A. (1997). Altering response topography to increase response efficiency and learning rates. *School Psychology Quarterly*, 12, 54–64. doi:10.1037/h0088947
- Skinner, C. H., Smith, E. S., & McLean, J. E. (1994). The effects of intertrial interval duration on sight-word learning rates in children with behavioral disorders. *Behavioral Disorders*, 19, 98–107.
- Smith, S. C., Lewis, T. J., & Stormont, M. (2010). An investigation of the use of two universal behavioral supports for children with externalizing behavior in Head Start classrooms. *Journal of Positive Behavior Interventions*, 13, 154–167. doi:10.1177/1098300710379053
- Sprick, R. (2006). *Discipline in the secondary classroom: A positive approach to behavior management* (2nd ed.). Eugene, OR: Pacific Northwest Publishing.
- Stein, M., & Wang, M. (1988). Teacher development and school improvement: The process of teacher change. *Teaching and Teacher Education*, 4, 171–187.
- Stichter, J. P., Herzog, M. J., Visovsky, K., Schmidt, C., Randolph, J., Schultz, T., & Gage, N. (2010). Social competence intervention for youth with Asperger syndrome and high-functioning autism: An initial investigation. *Journal of Autism and Developmental Disorders*, 40, 1067–1079.
- Stormont, M. A., Smith, S. C., & Lewis, T. J. (2007). Teacher implementation of precorrection and praise statements in Head Start classrooms as a component of a program-wide system of positive behavior support. *Journal of Behavioral Education*, 16, 280–290. doi:10.1007/s10864-007-9040-3
- Stormont, M., Covington, S., & Lewis, T. J. (2006). Using data to inform systems: Assessing teacher implementation of key features of positive behavior support. *Beyond Behavior*, 15, 10–14.
- Stormont, M., Lewis, T. J., Beckner, R., & Johnson, N. W. (2008). *Implementing positive behavior support systems in early childhood and elementary settings*. Thousand Oaks, CA: Corwin Press.
- Stormont, M., & Reinke, W. M. (2009). The importance of precorrection and behavior specific praise strategies. *Beyond Behavior*, 18, 26–32.
- Stormont, M., Reinke, W. M., & Herman, K. C. (2011). *General and special education teachers' knowledge of evidence-based mental health interventions*. Manuscript submitted for publication.
- Sugai, G., Sprague, J. R., Horner, R. H., & Walker, H. M. (2000). Preventing school violence: The use of office discipline referrals to assess and monitor school-wide discipline interventions. *Journal of Emotional and Behavioral Disorders*, 8, 94–101. doi:10.1177/10634266000800205
- Supaporn, S., Dodds, P., & Griffin, L. (2003). An ecological analysis of middle school misbehavior through student and teacher perspectives. *Journal of Teaching in Physical Education*, 22, 328–349.
- Sutherland, K. S., Alder, N., & Gunter, P. L. (2003). The effect of varying rates of opportunities to respond to academic requests on the classroom behavior of students with EBD. *Journal of Emotional and Behavioral Disorders*, 11, 239–248. doi:10.1177/10634266030110040501
- Sutherland, K. S., Wehby, J. H., & Yoder, P. (2002). Examination of the relationship between teacher praise and opportunities for students with EBD to respond to academic requests. *Journal of Emotional and Behavioral Disorders*, 10, 5–13.
- Tapp, J. (2004). *MOOSES (Multi-Option Observation System for Experimental Studies)*. Retrieved from <http://kc.vanderbilt.edu/mooses/mooses.html>
- Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17, 783–805.
- Van Acker, R., Grant, S. H., & Henry, D. (1996). Teacher and student behavior as a function of risk for aggression. *Education & Treatment of Children*, 19, 316–334.
- Webster-Stratton, C. (1997). *Incredible Years teacher training program*. Seattle, WA: Incredible Years.
- Weinstein, C. S. (2007). *Middle and secondary classroom management: Lessons from research and practice* (3rd ed.). New York, NY: McGraw-Hill.
- Witt, J. C., VanDerHeyden, A. M., & Gilbertson, D. (2004). Troubleshooting behavioral interventions: A systematic process for finding and eliminating problems. *School Psychology Review*, 33, 363–383.
- Woolfolk, A. (2007). *Educational psychology* (10th ed.). Boston, MA: Pearson Education.