

EFFECTS OF CLASS-WIDE FUNCTION-RELATED INTERVENTION TEAMS (CW-FIT)
ON MIDDLE SCHOOL TEACHERS' PRAISE AND REPRIMAND FREQUENCY

by

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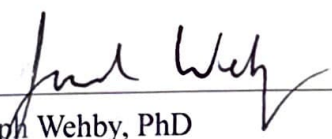
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TABLE OF CONTENTS

Chapter		Page
I.	INTRODUCTION	1
	Purpose of the Study.....	9
II.	METHOD	11
	Setting and Participants	11
	Dependent Measures	13
	Data Analyses	15
	Experimental Procedures.....	16
III.	RESULTS	20
IV.	DISCUSSION.....	21
	Limitations.....	23
	Future Research	25
	REFERENCES	26

LIST OF TABLES

Table		Page
1.	Means, Standard Deviations, and Ranges of Praise and Reprimand Rates	15
2.	Frequency of Praise and Frequency of Reprimands Predicted by CW-FIT Intervention	20

CHAPTER I

INTRODUCTION

Over the past 60 years, research has documented the importance of teacher praise for students with and without disabilities (Becker et al., 1967; Brophy, 1981; Floress et al., 2018; Gable et al., 2009; Hall et al., 1968; White, 1975; Zoder-Martell et al., 2019). Studies dating back to the 1960s have examined the effectiveness of teacher attention and praise to develop desirable classroom behavior. In fact, some of the earliest research in teacher praise from over 50 years ago, Hall et al. (1968), went as far as to say that effective teachers have “long known” that casually praising desired behaviors and ignoring disruptive ones can maintain good classroom discipline. There is a large body of research supporting the use of teacher praise as a naturalistic, nonintrusive, and cost-free intervention that increases student on-task behavior and decreases disruptive behavior (Dufrene et al., 2014; Sutherland et al., 2000; White et al., 2022). Despite the evidence for teacher praise, few studies have examined the use of teacher praise in the absence of training (Floress et al., 2018). Within the research that has been done, we see teachers’ frequency of praise decrease as student age increases (Markelz et al., 2022; White, 1975).

Teacher praise has been described and examined in two forms: general praise (GP) and behavior-specific praise (BSP). Both general and behavior-specific praise statements express positive teacher affect and can provide academic, behavioral, and social feedback (Brophy, 1981). General praise is defined as a broad and somewhat generic verbal statement of approval that goes above acknowledgement of a correct academic or behavioral response. Examples of general praise statements include “*Good job,*” “*Nice,*” and “*Fantastic.*” They do not specifically describe the behavior or response being approved. BSP is defined as verbal statements that

explicitly describe the student's behavior and the teacher's approval of the behavior (Brophy, 1981; Zoder-Martell et al., 2019). To illustrate, a teacher saying, "*You did a great job raising your hand quietly,*" is an example of BSP because the target behavior is both specified (i.e., raising your hand quietly) and approved/praised by the teacher (i.e., great job). Although both types of praise are examined in the literature, BSP is considered to be a more effective form of praise since it explicitly connects student behavior to teacher approval (Hawkins & Heflin, 2011).

Alongside the use of praise, researchers have also examined the optimal praise-to-reprimand ratio (PRR) for managing classroom behavior. Prior studies have shown teachers who use high levels of praise and low levels of reprimands have classrooms with increased levels of on-task behavior and decreased levels of noncompliance and student disruptions (Leff et al., 2011). Unfortunately, teachers find it difficult to maintain high rates of praise, so it is common for rates of reprimands to be higher than rates of praise in natural classroom settings (Floress et al., 2018; Reinke et al., 2013). Suggestions for a target PRR have ranged from 3:1 (Shores et al., 1993), 4:1 (Trussell, 2008), 5:1 (Flora, 2000), and most recently, 9:1 (Caldarella et al., 2019). The ratios suggested vary based on different factors, including classroom setting (e.g., general education versus special education classrooms) and if students with or at-risk for Emotional and Behavioral Disorders (EBD) are present. Prior research has documented that students with EBD may need a higher PRR to improve their behavior (Caldarella et al., 2019; Downs et al., 2019; Rathel et al., 2014).

Despite the debate on what ideal the praise to reprimand ratio should be, studies have shown that praise does not naturally occur at high rates in classroom settings (Landrum et al., 2003; Reinke et al., 2008; Reynolds et al., 2020). One hypothesis as to why teachers are not

frequently using praise is that they do not know how to effectively use it. Although many teachers claim they “know how to use praise,” direct training is one method frequently used to support teachers’ enhanced use of BSP and GP (Floress et al., 2018). To increase levels of praise in the classroom, many researchers have attempted to modify teacher behavior to increase rates of praise. Indeed, preliminary research in the 1960s acknowledge the fact that teachers need support to effectively implement praise. To date, there are several strategies that have been empirically studied to support teachers’ efforts to increase levels of praise.

Prompting was one of the first strategies used by researchers attempting to increase levels of teacher praise. Hall and colleagues (1968) cued teachers to praise students by discretely holding up small pieces of colored paper during instruction. In more recent years, newer adaptations of prompting systems have involved small, battery-powered electronic devices such as the MotivAider (Austin & Soeda, 2008) and tactile prompting devices or smart watches, such as an Apple Watch (Markelz et al., 2019; White et al., 2022) to more discretely cue teachers. These studies showed a positive effect for increasing levels of teacher praise in the classroom. Although the use of smart watches drastically increases the practicality of teachers using the intervention, there are other limitations to the intervention, including long-term feasibility.

Another common intervention strategy to increase rates of teacher praise is teacher self-monitoring, which involves observing and recording the target behavior over the course of several sessions. The first step is to identify and describe the target behavior, then record data on the occurrence of the behavior (Kalis et al., 2007). Several studies have examined specific self-monitoring systems to increase teacher use of praise statements, including moving pennies or paper clips from one pocket to another, using a handheld counter (Kalis et al., 2007), or simply tallying praise statements using a pencil and paper data sheet (Maki et al., 2008). Similarly,

teacher self-evaluation has been examined as a method of monitoring and increasing praise statements. The self-evaluation procedure includes the teacher writing a prediction of the number of praise statements they will use and then selecting a 15-minute time period to evaluate their prediction. During the 15-minute time period, teachers self-record their praise statements and compare them to their initial prediction (Sutherland & Wehby, 2001). Results from a study of 20 teachers by Sutherland and Wehby (2001) showed that self-evaluation had a positive short-term impact, increasing teacher praise and decreasing number of reprimands. However, the effects of the intervention did not maintain treatment phase levels one month later, questioning the feasibility of self-evaluation for a long-term solution.

A more time and resource-intensive intervention is peer coaching, where a teacher invites a colleague to observe part of a lesson in their classroom. The coach evaluates teacher praise and provides feedback and suggestions to improve their practice (Gable et al., 2009; Sutherland, 2000). Typically, the peer will observe the number of opportunities students have to respond and the number of times teachers deliver praise. This method requires the time of a colleague over the course of several days or weeks, which may not be feasible for all teachers. To provide teachers a method to overcome this constraint, Gunter and Reed (1996) developed a protocol for teachers to conduct a functional assessment of their own teaching behavior. Teachers videotape their instruction, then watch and self-evaluate seven operationally defined behaviors that are crucial for instructional interactions, including praise. The results found that teachers could reliably self-evaluate critical instructional behaviors, modify their behaviors, and made adjustments leading to positive changes in their teaching behavior.

There are other teacher intervention procedures that have been explored by researchers, including posting a graph of teacher praise rates in the classroom (Gross & Ekstrand, 1983). In a

single case research design procedure, Gross & Ekstrand (1983) posted a chart in the back of the classroom and graphed the teacher's percentage of intervals with praise on a daily basis. Results showed teacher praise increased during the intervention and was maintained during feedback fading and at a follow-up 2 months later. Similarly, the use of visual performance feedback (VPF) has been investigated in several studies. Reinke et al (2007) provided teachers with a daily graph of their rates of behavior-specific praise without providing any additional coaching or feedback. The intervention showed an increase in the use of BSP during the intervention phase, but it was not maintained once the VPF was removed. A variation of VPF intervention is an observation–feedback intervention, as studied by Sutherland et al. (2000). In an ABAB withdrawal design, researchers examined the effects of performance feedback on rates of praise when feedback is delivered immediately after the observed lesson. Results showed that there was a slight increase in number of BSP and GP statements during intervention, but the evidence supporting it was weak and limited to one participant. The findings of this study were replicated by Hawkins & Heflin (2011) in a multiple baseline across participants with embedded withdrawal design. The three participants in this study showed similar changes of increased praise, but only one teacher displayed BSP when the intervention was withdrawn. In a similar method, Rathel et al. (2014) investigated the effects of emailing specific performance-feedback to induction-level teachers designed to improve the positive-to-negative communication ratio and increase use of BSP. Results showed that two out of three teachers improved their positive-to-negative communication ratios and maintained these behaviors across fading and maintenance phases. Additionally, levels of student task engagement increased and were more stable when rates of teacher praise were higher. The research is clear that performance feedback shows promise for teacher intervention. However, there are numerous limitations surrounding the

practicality and feasibility of performance feedback as a durable solution to increase levels of praise.

Bringing a unique lens on teacher professional development, training, and intervention, several studies have examined the effects of a tiered or response-to-intervention (RTI) professional development system on teacher praise. Myers and colleagues (2011) attempted to use an RTI framework to support four teacher participants. The continuum of supports provided included training on schoolwide positive behavior support at the primary level. If teachers did not achieve a 4:1 positive-to-negative interaction ratio and provide at least six specific praise statements within a designated number of observations, they moved into a tier 2 level of support, which consisted of consultation, weekly meetings to discuss data of the teachers' interaction ratio, and praise from the researcher contingent on the teacher improving rates of BSP. Teachers who did not meet the performance criteria were moved into tier 3, in which teachers received in-person and emailed feedback after each observation session. Results showed that performance feedback improved rates of teacher praise and that tier 1 procedures alone were not enough for teachers to meet the performance criteria. Individually, one teacher met the performance criteria after receiving the tier 2 intervention, two teachers required tier 3 intervention to meet criteria, and one teacher stayed in tier 2 for the entirety of the study. These results suggest that just as students need tiered systems of supports for academic and behavioral needs, teachers may also benefit from a tiered system of professional development. A similar study was conducted by Gage et al. (2017) and found comparable results. Results indicated that a universal, tier 1 professional development session, that included a 30-min direct instruction session and provided self-monitoring tools, did not have any meaningful effect on teachers' rates of BSP. Participants who did not meet the a priori goal of BSP statements were moved to tier 2 and received a review

of the BSP definition and weekly coaching sessions with visual performance feedback delivered via email. Results showed that tier 2 professional development improved rates of BSP for each teacher. Encouragingly, a follow-up probe 3 months after intervention showed that all three participants sustained their increase of BSP. Although a tiered system of professional development shows promise in sustainable increases of teacher praise, more research is needed to examine the practicality and long-term effects.

These intervention methods have been achieved by both direct and indirect training measures. Indirect training measures generally include providing background knowledge and content about an intervention and using descriptive examples, while direct training includes additional supports that ensure accurate and reliable implementation (Zoder-Martell et al., 2019). No matter which training method is used, many of the described interventions require extensive resources, such as time and professional consultants, which significantly limits the practicality for practitioners (Riley-Tillman & Chafouleas, 2003). Considering the importance of practical, feasible interventions for teachers, it is critical that researchers examine other methods to improve teacher praise rates. One such intervention that has been shown to improve student behavior and has the potential for increasing teacher praise is Class-Wide Function-Related Intervention Teams (CW-FIT).

Class-Wide Function-Related Intervention Teams

In the past few decades, one aspect of school-based behavior support that has caught the attention of both researchers and practitioners is school-wide behavioral management systems. One of the most popular systems is Positive Behavioral Intervention and Supports (PBIS) framework (Eber et al., 2002). The PBIS framework is an approach that is both proactive and

adaptive to students' behavioral needs and includes universal and individual supports to meet student needs. The framework relies heavily on tier 1 or universal supports that are meant to prevent persistent challenging behavior for 80-90% of students (Horner & Sugai, 2015). If students demonstrate additional support needs, they receive more individualized supports at the tier 2 and, if needed, tier 3 levels.

There are many evidence-based classwide interventions teachers can implement, including CW-FIT (Wills et al., 2010). The CW-FIT intervention relies on interdependent group contingencies to address common classroom-level challenging behavior. Key components of CW-FIT include explicit teaching, extinction, and reward (Wills et al., 2010). Teachers implement CW-FIT by first explaining the "game" to students and explicitly teaching behavioral expectations, typically done over two or three lessons. On a daily basis, teachers implement CW-FIT by first pre-correcting behavior, dividing the class into teams, setting a point goal, and identifying a reward. Teachers use an interval timer, set for 4 to 7 minute intervals, to prompt them to provide behavior-specific feedback and award points to teams in which all members are meeting the expectations set at the beginning of class. At the end of the game, the teacher totals the points and provides the reward to the team(s) who met the daily point goal. The CW-FIT game is intended to be played during times when teachers anticipate challenging behavior but can last for a short portion of class or the entire day (Wills et al., 2010).

CW-FIT is a low-effort, high-return intervention that is a Tier 1 support within the PBIS framework and is versatile enough to be implemented across subjects, grade levels, and instructional activities. The literature base of both single case and group design studies suggests CW-FIT to be an effective behavior intervention for educators (Kamps et al., 2015; Orr et al., 2019; Speight et al., 2020, 2022; Wills et al., 2018). CW-FIT has been shown to improve class-

wide levels of on-task behavior and levels of on-task behavior for individual target students deemed at-risk for emotional and behavioral disorders (Kamps et al., 2015; Speight et al., 2020; Wills et al., 2018). The positive effects of CW-FIT have been demonstrated in both general and special education classrooms (Orr et al., 2019; Speight et al., 2020).

Although the focus of CW-FIT is to improve class-wide student behavior, studies have documented significant changes in teacher behavior while using the program. Past research has shown that teachers' use of CW-FIT leads to an increased frequency and regularity of praise statements (Kamps et al., 2015; Wills et al., 2014; Wills et al., 2023). Moreover, teachers using CW-FIT have been documented using a lower number of reprimands (Kamps et al., 2015; Wills et al., 2014; Wills et al., 2018). These effects on teacher behavior have been seen across grade levels and classroom environments (Kamps et al., 2015; Orr et al., 2019). Although CW-FIT has been shown to positively influence teacher behavior, the studies demonstrating these effects examine teacher behavior as a secondary research question and outcome measure.

Considering the long history of teacher praise demonstrating positive effects on student behavior, many researchers recommend implementing high rates of teacher praise as a universal classroom management practice (Ennis et al., 2020; Gable et al., 2009; Hester et al., 2009; Myers et al., 2011; Sutherland et al., 2000). However, given the lack of feasible interventions focused on increasing teacher praise, researchers should further investigate the possibility of tier 1 classroom management systems such as CW-FIT as a method for promoting teacher praise.

Purpose of the Study

The purpose of the current study is to examine the effects that CW-FIT has on teacher praise and reprimands. This study is among the first to examine the effects that class-wide, tier 1

behavior management systems, such as CW-FIT, have on teacher behavior as the primary outcome. The following research questions were investigated: 1) What is the effect of CW-FIT on frequency of teacher praise statements? 2) What is the effect of CW-FIT on frequency of teacher reprimand statements?

CHAPTER II

METHOD

Setting and Participants

Over a two-year period, data were gathered from participants in Tennessee, Kansas, and Utah as part of a multisite randomized control trial of CW-FIT. The data presented in this study represent only participants from the Tennessee site. Participants included teachers and students from three urban middle schools located in the same large, urban school district in the southeastern United States. All three schools were moderately sized, with enrollment numbers at 266, 421, and 509 students, and were relatively balanced by gender (50% female, 47% female, and 45% female). The school populations were racially diverse, with enrollment of Black/African American students (39%, 38%, and 25%), white students (19%, 48%, and 29%), and Hispanic students (37%, 15%, and 28%). Two of the schools had a relatively high number of students receiving free or reduced-price lunch (70% and 73%) while one school only had 46% of students receiving free or reduced-price lunch.

Teachers

To recruit teacher participants, researchers requested and received district approval to meet with any middle school principal interested in learning more about the study. Contingent on principal permission, researchers met with all 6th-8th grade core content area teachers to share information about the study. Interested teachers were asked to nominate up to six target students who displayed externalizing challenging behaviors during their class. Informed consent materials were sent home to all nominated students and if returned, student assent was obtained. Teachers

who had one or more target student(s) receive parent consent and student assent participated in the study.

Over the course of three years, 15 teachers participated in this study, with 7 randomly assigned to CW-FIT intervention condition and 8 randomly assigned to the business-as-usual (BAU) condition. Inclusion criteria for teacher participants included: (a) taught a 6th, 7th, or 8th grade core content area class (i.e., Science, Math, Social Studies, English Language Arts), (b) had one or more target student(s) who obtained parent consent and student assent to participate, and (c) consented to participate in the study. The 15 participating teachers were mostly female (73%), white (93%), and had obtained education at the Master's level or higher (67%). Teachers ranged from 27 to 62 years old ($M = 37.66$, $SD = 9.37$), with teaching experience ranging from 1 to 38 years ($M = 8.96$, $SD = 9.70$). Teachers taught 6th grade (33%), 7th grade (47%), or 8th grade (20%), and subjects taught included math (40%), ELA (34%), History (20%), and Science (6%). Two regression models showed no statistically significant differences between teachers who were randomized to control and teachers who were randomized to treatment on baseline use of praise ($B = .43$, $p = .51$) or reprimands ($B = -.19$, $p = .97$).

Students

Student participants included all present students in the teacher participant classrooms. A total of 354 students were involved in this study at the class-wide level. Class sizes ranged from 17 to 30 students ($M = 23.6$, $SD = 4.04$). Within each classroom, one to four target students were identified, and researchers collected supplemental data collection on engagement and disruptions for them individually. A total of 28 target students across 15 classrooms participated in this study,

who were confirmed to display externalizing challenging behavior with a series of systematic, standardized assessments and direct systematic observations.

Dependent Measures and Data Collection

Researchers collected data on teacher behavior, target student behavior, and class-wide behavior during each systematic direct observation. Data collection procedures included momentary time sampling and frequency count systems. The present study focuses on teacher-level data, which was collected using frequency counts. Teacher behaviors included individual praise, group praise, individual reprimands, group reprimands, and points awarded (an aspect of the CW-FIT intervention). Praise and reprimands were collected using a frequency count, which occurred simultaneous to the momentary time sampling procedure during the same 20-minute observation.

Researchers operationally defined *praise* as a verbal statement that indicates approval of behavior above an evaluation of adequacy or acknowledgement of a correct response to a question. Examples include “*Great job, Andrew,*” “*Everyone is doing a nice job working quietly,*” and request for students to give themselves a pat, high five, etc. Nonexamples include “*Thank you*” and “*That’s correct.*” Long and detailed praise statements count as one episode unless at least 3 seconds have passed between the end of one statement and the beginning of the next, or whenever the context changes. Teacher praise to group includes all praise given to either a small group of students or the whole class. Teacher praise to an individual includes all praise given to an individual student.

Researchers operationally defined *reprimand* as a verbal statement that the teacher uses to scold student(s) or negatively comment about a student’s behavior—often with the intent to

stop the student from misbehaving. Although tone will likely be stern or punitive, reprimands may be delivered in a pleasant voice. Statements of negative consequences, threats, and sarcastic statements used with the intent to punish behavior also count as reprimands. Statements are coded as reprimands when they are intended to correct behavior either as the behavior occurs or after it has occurred. Examples of reprimands include “*Quit wasting time,*” “*Stop talking to Heather,*” or “*You’re disrupting the class.*” Nonexamples include “*That’s incorrect*” or “*Everyone give me your attention and put eyes on me.*” Reprimands are coded separately if at least 3 seconds have passed between the end of one reprimand and the beginning of the next, or whenever the content changes. Group reprimands are given to a small group of students or to the whole class. Individual reprimands are given to an individual student.

Each teacher had a total of three observations for the baseline condition, which occurred on separate days. There were a total of six observations for each teacher during the intervention/Time 2 condition. During the intervention/Time 2 condition, no more than two observations were completed each week. All teachers had the same number of observations and data collection points from start to finish, which lasted approximately 8 weeks. For this study, the frequency of all (i.e., individual and group) praise and reprimands were averaged across the baseline and intervention observations, as shown in table 1.

A 9-item procedural fidelity checklist was used to determine the use of CW-FIT intervention components during every direct observation session in all conditions and in all classrooms. Although teachers in the control condition did not attend CW-FIT training and had no knowledge of the procedures, the checklist was used to confirm no significant treatment procedures were used in their classrooms. Teachers in the control group had low fidelity at baseline ($M = 5.1\%$, range 0%–14.8%) and during Time 2 observations ($M = 6.55\%$, range 0%–

22.2%). Considering the fidelity checklist includes items that might be present in any classroom (e.g., classroom expectations clearly posted, praise and reprimands are behavior/skill specific), researchers were not concerned about some control teachers having fidelity slightly above 0% throughout the study. Teachers in the CW-FIT condition implemented the intervention with high fidelity, averaging 93.75% (range = 70.4%–100%), compared with a baseline average of 7.93% (range = 0%–25.9%). Low fidelity of less than 80% occurred for 2.38% of intervention sessions in the intervention group.

Table 1

Means, Standard Deviations, and Ranges of Praise and Reprimand Rates

	BAU		CW-FIT	
	Baseline	Time 2	Baseline	Time 2 (Intervention)
	M (SD) Range	M (SD) Range	M (SD) Range	M (SD) Range
Praise	1.64 (1.46) 0–4	2.84 (3.02) 0.3–10	1.68 (0.94) 0.3–3.3	16.3 (4.17) 13.3–26.3
Reprimands	10.75 (11.01) 2.6–38.3	10.79 (10.39) 2–33.8	11.3 (7.53) 0–26.6	6.8 (3.12) 2.8–11.3

Data Analyses

To test whether CW-FIT influenced change in teachers' use of praise and reprimands, two regression models were conducted in which teacher's baseline praise or reprimand score and condition (scored as 0 = BAU classrooms, and 1 = CW-FIT classrooms) were regressed on each of the intervention/Time 2 dependent variables (i.e., praise, reprimands). Direct effects are

interpreted as the extent to which CW-FIT predicted change in teacher praise and reprimands at intervention. Analyses were conducted using Mplus Version 8.0 (Muthén & Muthén, 1998–2017).

Design and Experimental Procedures

This study was part of a randomized control trial, with teachers being randomly assigned to either CW-FIT intervention condition or business-as-usual (BAU) condition. CW-FIT was developed and first used as a multi-tiered intervention for elementary classrooms (Wills et al., 2010). The tier 1 or classroom-level component consists of several evidence-based classroom management strategies including explicitly teaching classroom rules, pre-correction of skills, behavior-specific praise, and differential reinforcement of alternative behaviors (Wills et al., 2010). Since 2010, the efficacy of CW-FIT has been verified in single case research design studies (Orr et al., 2019; Speight et al., 2020; Wills et al., 2019), randomized control trials (Kamps et al., 2015; Wills et al., 2018), and promising results within middle schools (Wills et al., 2023). The components of CW-FIT at the middle school level are the same as CW-FIT in elementary schools with minor modifications to reflect a more natural level of school resources, which included a shorter length of time for training and coaching teachers. Readers can refer to Wills et al. (2023) for additional details about the modifications and procedures of CW-FIT in the middle school setting.

CW-FIT Condition

Following the completion of baseline data collection, teachers who were randomly assigned to the CW-FIT intervention condition were trained by research staff on CW-FIT MS

during one 60-min session. During the 1-hour training session, researchers shared a PowerPoint presentation that detailed all intervention components and video clips of CW-FIT implementation. The training discussed how to teach classroom behavior expectations, pre-correct skills at the beginning of class, and details of the group contingency aspect (e.g., using the timer, assigning teams, giving points, and rewards). Training also emphasized collaborating with students when creating classroom expectations and using behavior-specific praise when awarding points to teams. Although teachers were trained to give targeted praise statements, data on teacher praise statements were not collected on behavior specific versus general praise.

Teachers completed two kick-off lessons where they collaborated with students to define and describe classroom expectations (e.g., being respectful). Researchers observed this lesson and offered modeling and coaching to the teachers throughout the lesson if needed. After the kick-off lessons, teachers began implementing CW-FIT. After each of the first two observations in the intervention condition, teachers were given a procedural fidelity sheet that detailed their fidelity on each component of the intervention. Alongside the procedural fidelity sheet, observers provided general feedback on specific intervention aspects if needed (e.g., improving behavior-specific praise, using the timer correctly). Suggestions were provided verbally and based on the items on the fidelity checklist that had low scores. After the first two intervention observations, observers did not provide any more feedback, even if the fidelity score was low.

Ongoing CW-FIT procedures included pre-correcting skills at the beginning of the lesson, assigning groups for the interdependent group contingency, using a timer in 4-to-7-minute intervals during sessions, setting a point goal and designating an award for meeting the goal, awarding points to groups based on using skills and meeting expectations, and providing the identified reward for teams who met the point goal.

In the intervention classrooms, researchers asked teachers to “play” CW-FIT for at least 20 minutes during an activity or time that was behaviorally challenging, yet many teachers implemented the game throughout the entire duration of the class period (e.g., 45 minutes, 50 minutes). However, direct observations lasted for 20 minutes. There were six observations for each teacher during the intervention condition.

BAU Condition

Teachers who were randomly assigned to the control condition were not provided training or coaching on CW-FIT. To protect internal validity of the study, researchers used the same treatment fidelity form in treatment and control classrooms and instructed teachers in both conditions to refrain from speaking with other participants about the intervention and procedures. Control classrooms were instructed to continue their classroom in a “business as usual” approach, implementing their typical classroom management procedures and strategies. Fidelity checklists revealed that control teachers were not using elements of the CW-FIT intervention in their classrooms during baseline or Time 2 observations.

Interobserver Agreement

Observers consisted of graduate students in a special education master’s program. All observers were trained to mastery on the observational tool by studying the operational definitions of each student and teacher behavior and scoring an 85% or higher on a quiz about operational definitions and data collection procedures. Once observers reached mastery on the quiz, they watched and coded a 20-min classroom video that was previously scored by researchers. Observers were deemed reliable and ready to observe once their interobserver

agreement (IOA) was above an 80% for each measure of data collection on the 20-minute practice video.

IOA was collected for 35.56% of observations across classrooms and conditions by a second trained observer. The IOA averaged 95.54% ($SD = 10.97$) for individual praise, 94.96% ($SD = 15.89$) for group praise, 92.27% ($SD = 14.99$) for individual reprimand, and 92.66% ($SD = 21.59$) for group reprimand. Considering the nature of frequency count data collection measures, there were times when IOA was low due to a low frequency behavior (e.g., 0% IOA for group praise because observer one counted 0 instances and observer two counted 1 instance).

CHAPTER III

RESULTS

In this study, we examined whether CW-FIT increased teachers' use of praise and reprimand statements. The first research question examined the effect of CW-FIT on teacher praise statements. As shown in Table 2, results revealed that, compared with the BAU condition, CW-FIT significantly influenced teachers' frequency of praise statements ($B = 12.59, p < .001$). The second research question examined the effect of CW-FIT on teacher reprimands. Results revealed that, compared with the BAU condition, there was no statistically significant effect in teachers use of reprimands from baseline to intervention ($B = -2.81, p = .29$). Said another way, CW-FIT was not associated with using reprimands at a different rate than teachers in the BAU condition. However, baseline reprimands were a significant predictor of intervention reprimands regardless of treatment group.

Table 2

Frequency of Praise and Frequency of Reprimands Predicted by CW-FIT Intervention

	<i>B</i>	<i>SE</i>
Model 1		
Intervention/Time 2 Praise		
Baseline Praise	0.52	0.90
Condition	12.59***	2.29
Model 2		
Intervention/Time 2 Reprimands		
Baseline Reprimands	0.65***	0.14
Condition	-2.81	2.65

Note: Condition is scored as 0 = BAU and 1 = CW-FIT.

* $p < .05$. ** $p < .01$. *** $p < .001$.

CHAPTER IV

DISCUSSION

The purpose of this study was to examine the effects of CW-FIT, a tier 1 behavior management intervention, on rates of teacher praise and reprimands in middle school classrooms. Prior research on CW-FIT in both elementary (Kamps et al., 2015; Wills et al., 2018) and middle school classrooms (Wills et al., 2023) indicate promising outcomes for increasing levels of teacher praise. Although prior research has examined teacher behavior as a secondary outcome of the intervention, this study examined teacher behavior as the primary research question.

The first research question of the current study examined the effects of CW-FIT on frequency of teacher praise when compared to frequency of teacher praise in control classrooms. Baseline levels of praise in control and intervention groups were low and mirrored levels found in other studies (Caldarella et al., 2019; Reinke et al., 2008, 2013; Sutherland et al., 2000). Results indicated that during the intervention/Time 2 period, teachers in the CW-FIT condition used higher levels of praise than teachers in the BAU condition. Additionally, teachers use of praise in baseline was not related to their use of praise in intervention/Time 2. This finding is in line with our hypothesis, considering the natural opportunities for teacher praise during the CW-FIT intervention.

The second research question examined how CW-FIT is related to teacher use of reprimands when compared to teacher reprimands in control classrooms. Results of the regression model show there was no treatment effect on teachers' use of reprimands. Being in the CW-FIT group was not associated with using reprimands at a different rate than teachers in the BAU condition. However, baseline reprimands were a significant predictor of intervention

reprimands, regardless of treatment group. This finding emphasizes the persistence of teacher behavior without intervention. This result was not unexpected, considering CW-FIT does directly train or coach decreasing reprimands as part of the intervention. However, CW-FIT is a class-wide intervention that is focused on positive behavior supports. Although this is not an unexpected result, future research should target both increasing the level of praise and decreasing the number reprimands to directly influence the praise-to-reprimand ratio.

While the target of this study was not teachers' PRR, it is worth noting how results compare to similar studies in the literature. At baseline, both groups had a PRR of approximately 1.5:11. During intervention, the PRR for the CW-FIT group was approximately 8:3. For the control group, the Time 2 PRR was approximately 3:11. Although the intervention group did not reach the Trussell et al. (2008) recommendation of a 4:1 PRR, teachers were much closer to this goal. As pointed out by Caldarella et al. (2019), students at risk for Emotional and Behavioral Disorders appear to benefit from any increase to the PRR.

It is also worth noting that although CW-FIT does train teachers to use behavior-specific praise, this is only one aspect of the training. In a one-hour training session, teachers learn all components of the CW-FIT intervention, which includes delivering behavior-specific praise to students and teams meeting the established classroom expectations. Finally, results suggest that teachers can implement CW-FIT procedures without persistent feedback and coaching. During intervention implementation, teachers received only two sessions of feedback, which included a scored fidelity sheet and verbal feedback for fidelity items that were scored low. As compared to prior CW-FIT studies in elementary schools (Kamps et al., 2015; Wills et al., 2010; Wills et al., 2018), the CW-FIT intervention in middle schools provides significantly less coaching and

feedback to intervention teachers. Even with limited coaching and feedback, teachers still implemented the intervention with high levels of fidelity.

Limitations

There are several limitations of the current study that readers should be aware of while interpreting results. First, the average number of praise and reprimands for each teacher included a combination of the individual and group praise and reprimands. During CW-FIT, observers collected data on individual praise, group praise, individual reprimands, and group reprimands. For this study, researchers totaled individual and group praise statements and reprimands. If individual and group praise and reprimand statements were tested individually, we would have seen more detailed results and may have experienced different conclusions. For example, we may have seen a lower frequency of individual praise counts and a higher frequency of group praise.

Additionally, researchers did not distinguish behavior-specific praise statements and group praise statements in our data collection. Considering that teachers in the CW-FIT condition are trained to give BSP, having more detailed information about the types of praise being given by teachers would provide additional information about effectiveness of teacher training and add to the literature base on BSP. Prior research tells us that BSP is the favored method of praise in comparison to general praise, so future research should consider this limitation and consider collecting data on types of praise given.

A third limitation is that CW-FIT was implemented for a brief time in each class, three to five times weekly for 30–60 minutes. These data reflect only nine points in time for each teacher. It is unknown what the rates of teacher praise and reprimands were outside of the direct

observations conducted. Similarly, we are unsure if teachers' praise generalized to their other classes not implementing the CW-FIT intervention. Likewise, the sustainability and maintenance of this intervention without supports is unknown. Although teachers implemented CW-FIT at high fidelity levels with scarce coaching and feedback, we do not know how fidelity would look in follow-up probes after the initial intervention ends. For example, would we still see high levels of teacher praise in a one, two, or three year follow up? Future research should expand this limited coaching and feedback model back into elementary schools to see if the results generalize.

Another limitation readers should keep in mind is that observers were not blind to intervention condition, which increases the chance for observer bias. Given the distinct components of the intervention (i.e., CW-FIT poster, timer intervals, awarding points), it is nearly impossible to keep observers blind to the condition. In addition, this study represents a small sample size of 15 teachers. Considering this, we did not control for other possible moderators, such as years of teaching experience, level of education, or number of years at their current school. These elements are important and should be examined in future, larger-scale studies.

Implications and Future Research

The current study provides an extension of the literature supporting CW-FIT as an effective tier 1 behavior management strategy that increases levels of teacher praise with limited direct training. Future research should examine other tier 1 behavior management systems that are commonly used to see their effects on teacher behavior. Additionally, future studies should examine possible training solutions to attempt lowering the number of teacher reprimands. As

noted, there is a wide range of suggested praise-to-reprimand ratios from the literature base. Since we know PRR might be important, especially for students with or at-risk for emotional and behavioral disorders, future research should examine effects of the PRR and possible solutions to lowering the number of teacher reprimands.

An additional area of focus for future research is the generalization of teacher praise into other class periods or times of day when CW-FIT is not being implemented. Similarly, researchers should examine the sustainability and maintenance of teacher praise over longer periods of time. Since we are unsure of the quality and type of these praise statements (i.e., BSP or GP), future studies should consider separating behavior-specific praise and general praise statements to see what type/what quality of praise is being implemented. Future work would also benefit from examining how many teacher praise statements are directed at the target students versus the whole class or small groups.

The results of this study suggest that CW-FIT, a universal behavior management system to support student behavior, is also effective for increasing levels of teacher praise. Teachers can use these results to inform their own classroom management practices. Researchers can use these results as a starting point for reframing the way we train teachers to implement praise in the classroom. While study results are promising, additional research is needed to examine the effects of CW-FIT on teacher praise and reprimands.

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