Dissertation

The Effects of Class-Wide Function-related Intervention Teams (CW-FIT)

on Students' Prosocial Classroom Behaviors

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Abstract

Students with challenging, disruptive behavior have difficulty learning in school and their behavior adversely impacts the learning of other students and the classroom teacher. Class-Wide Function-related Intervention Teams (CW-FIT) is a promising approach that teachers can use to prevent and reduce problem behavior and increase prosocial classroom behaviors. Previous studies have demonstrated that CW-FIT produced improvements in student appropriate classroom behaviors which led to increased available instruction time.

The purpose of this investigation was to systematically replicate CW-FIT adding to the empirical research base supporting it. A novel aspect compared to prior studies was measurement of the behaviors actually reduced and increased by CW-FIT, providing a new contribution to the literature. Students in four classes and their teachers participated in this study. An ABAB reversal design combined with a multiple baseline design was used to demonstrate intervention effectiveness and experimental control. Implications for research and practice are discussed.

The Effects of Class-Wide Function-related Intervention Teams (CW-FIT) on

Students' Prosocial Classroom Behaviors

The Problem

In this era of No Child Left Behind, American schools are engaged in a

struggle to close the achievement gap between diverse groups of students. This

struggle can be seen in urban schools that serve a high percentage of non-English

speaking, poor, minority students, and students with special needs (Lannie &

McCurdy, 2007). For these schools, progress closing the gap has come only with

great effort and sacrifice from administrators, teachers, as well as students and their

families. Just two of these efforts are: (a) increased school time devoted to testing and

(b) after school tutoring programs (Lannie & McCurdy). However, most urban

schools are struggling to achieve socially significant outcomes. The National

Assessment of Educational Progress (NAEP) reports that: first, students from low-

income families, those who qualify for free or reduced lunch, score lower on reading

than their counterparts that do not qualify for free or reduced lunch. Second, the gap

between these two groups has remained consistent across the ten years of testing --

from 1998 to 2007. Third, a similar gap is seen when comparing scores for academic

content (i.e., history) of these two groups (i.e., free and reduced lunch vs. non free

lunch). Fourth, similar gaps are seen in science scores when viewing the data

comparing whites and Hispanics and those data comparing whites and blacks. Finally,

these score gaps between those students who qualify and do not qualify for free or

reduced lunches, and minority and White students still persist (The Nation's Report Card, 2005; http://nces.ed.gov/nationsreportcard/pdf/main2005/2006466.pdf).

Research suggests that behavior problems and, by extension, discipline problems are more frequent in urban, central city, public schools where the majority of low income and ethnic/minority students are educated (Greenwood, Horner, & Kratochwill, 2008). Additionally, Lewis, Powers, Kelk, & Newcomb (2002, p. 181) stated that, "One of the greatest challenges [for teachers] is managing student behavior" which takes precious teaching and learning time. Conversely, reducing problem behavior by creating a positive learning environment increases academic learning time and greater opportunities for academic and social success (Nelson, Martella, & Marchand-Martella, 2002). Given the preceding, it is evident that teachers who choose to work in the urban school environment need a well-developed repertoire of teaching and behavior management skills (Lannie & McCurdy, 2007; Lippman et al., 1996). In response to these concerns, a body of research addressing classroom management has suggested that strategies focusing on increasing student on-task can result in substantially diminishing problem behaviors (e.g., Hawken & Horner, 2003; McComas, Googard, & Hoch, 2002; Olley, 1999; Peterson et al., 2005; Seybert, Dunlap, & Ferro, 1996; Todd, Horner, & Sugai, 1999).

However, effective management of the urban classroom is a skill in which teachers are often ill prepared (Graziano, 2005). Additionally, when these skills are taught, repeated follow-up is often required for improvement (Sutherland, Wehby, & Copeland, 2000). Therefore, it is critical to provide teachers with classroom

management strategies that have not only demonstrated results but are also time efficient and easy to implement (Litow & Pomroy, 1975; Skinner, Cashwell, & Dunn, 1996).

One classroom management strategy with substantial evidence and replications supporting its effectiveness is group-oriented contingencies (Stage & Quiroz, 1997). Three types of group-oriented contingencies have been identified: (a) independent, (b) dependent, and (c) interdependent. In the independent group contingency, only those students whose behavior meets a set criterion receive reinforcement. In the dependent group contingency, all of the students in the classroom receive reinforcement contingent upon one student's behavior or a select group of students' behavior meeting the criterion. In the interdependent group contingency, everyone in the class receives reinforcement contingent upon the whole class meeting a criterion (e.g., a class average of 80% on the weekly quiz; Campbell & Skinner, 2004; for a detailed description of group-oriented contingencies, see Litow & Pumroy, 1975).

Findings of Previous Research

Although evidence for the effectiveness of group-oriented contingencies has been widely demonstrated (Embry, 2002; Stage & Quiroz, 1997), the majority of this evidence has been in support of the effects of interdependent group-oriented contingencies on negative social behaviors (i.e., disruptive behavior). Perhaps the most widely examined educational interventions using this contingency is the Good Behavior Game (GBG; Barrish, Saunders, & Wolf, 1969). For example, Tingstrom,

Sterling-Turner, and Wilczynski, (2006) provided a review of the GBG that included 27 replications (i.e., variations and adaptations) conducted between the years of 1969 and 2002. Of the 28 total studies, 18 (64%) were implemented to diminish disruptive behavior (e.g., Davies & Witte, 2000; Gresham & Gresham, 1982), four (14%) to increase academic behavior and diminish disruptive behavior (Darveaux,1984; Robertshaw & Hiebert, 1973), four (14%) to increase academic behavior (e.g., Darch & Thorpe, 1977), one (4%) to increase prosocial behaviors (Patrick, Ward, & Crouch, 1998), and one (4%) to increase oral hygiene (Swain, Allard, & Holborn, 1982).

The GBG still provides the prototypical example of an interdependent group-oriented contingency intervention designed to diminish disruptive behavior. Barrish et al. (1969) divided a classroom of general education students into two teams. The researchers identified two disruptive behaviors (out-of-seat and talking out; notice the focus on negative behavior) for which a mark would be placed on the board against the offending team. The team with the least marks or both teams, if both had less than five marks, could win the game. The team that won the game could choose from rewards like being first in line for lunch, extra recess time, wearing "I'm a winner" ribbons, and other special treats. Barrish et al. reported a substantial reduction in student disruptive behavior.

Harris and Sherman (1973) replicated the GBG effectively diminishing disruptive behavior in a fifth and sixth grade classroom. The authors measured math scores during the game. Findings indicated that there was very little improvement in math scores as compared to baseline levels. However, math scores were not a

dependent variable in the intervention. Additionally, Harris and Sherman performed a component analysis to identify the critical components of the GBG. They found that there were three components essential for running the game: (a) assigning groups, (b) setting a criterion, and (c) designating reinforcement for the winning team(s).

Many other researchers have replicated the GBG in many variations and on many behaviors, but the majority of the investigations have been implemented to reduce disruptive student behavior (Tingstron et al., 2006) such as out-of-seat, talking out, aggression, cursing, name calling (e.g., Bostow & Geiger, 1976; Gresham & Gresham, 1982; Medland & Stachnic, 1972; Weber, 1989). Other researchers have used the game to increase academic performance (e.g., Darveaux, 1984; Maloney & Hopkins, 1973; Robertshaw & Hiebert, 1973). Darveaux (1984) added a merit component and produced increases in math assignment completion at the level of a 75% average for the entire class. Darveaux noted that, for two target students, increases were even greater after playing the game. Maloney and Hopkins (1973) increased the use of various parts of speech in addition to ratings on creative writing of stories using what they called the "Good Writing Game." Finally, as a result of their astronaut game, Robertshaw and Hiebert's study (1973) demonstrated increases in work completion.

The GBG was used as the primary component of a classroom intervention in a longitudinal group comparison study with first and second graders (Kellam et al., 2008). The study began in the 1985-1986 school year in 19 Baltimore City Public Schools. The intervention was directed at reducing disruptive and aggressive

behaviors, which are known to lead to later smoking, substance abuse, dependence disorder, antisocial personality disorder, school failure and dropout, and criminal behavior.

Kellam et al. (2008) reported on these young adults at 19 to 21 years-of-age. The general findings were that 12% of the young adults who were part of the GBG classrooms had an incidence of abuse/dependence disorder vs. 21% for those in the control classrooms. For those students who were originally rated as highly disruptive and aggressive in the original first grade GBG classroom, the incidence of abuse/dependence disorder was 29% compared to 83% for the controls. Additionally, 86% of those identified youths who participated in the GBG obtained high school diplomas, whereas merely 19% of those students who did not participate in the GBG finished high school (Kellam & Rebok, 1992). In the final analysis, the GBG had the strongest effects on those youths in the highest risk category (Kellam, 2008).

Although the GBG is a specific interdependent group-oriented contingency intervention, not all interdependent group-oriented contingency interventions are considered to be the GBG. Interdependent group-oriented contingency programs that were not called the GBG have also been implemented to diminish disruptive behavior (e.g., Axelrod, 1973; Dietz & Repp, 1973; Hall, Fox et al., 1971; Salend & Lamb, 1989; Thomas, Lee, & Silverman, 1987); increase academic performance (e.g., Bear & Richards, 1980; Lloyd et al., 1996; McLaughlin, 1981; Stewart & McLaughlin, 1986; Turco & Elliott, 1990); increase academic performance and diminish disruptive behavior (Wilson & Williams, 1973); increase prosocial behavior (Gamble & Strain,

1979); increase on-task behavior (Packard, 1970; Willis & Crowder, 1972); increase

on-task and diminish disruptive behavior (Crouch, Gresham, &Wright, 1985); and

increase academic performance and prosocial behavior (Lew, Mesch, Johnson, &

Johnson, 1986).

Salend and Lamb (1989) utilized an interdependent group contingency to

diminish the inappropriate verbalizations of learning disabled students. Baseline mean

inappropriate verbalizations was 29 (range 11 to 47) and dropped to a mean of 1.8

(range 0 to 4) during the last phase of an ABAB reversal design, thus demonstrating

significant decreases with the use of an interdependent group contingency program.

Similarly, Axelrod, (1973) diminished the disruptive behavior of 31 special education

students from two classrooms. Disruptions for one of the classes were as high 240

disruptions in one day during baseline and diminished to less than 40 during the

interdependent group contingency intervention demonstrating a significant drop in

disruptive behavior.

An interdependent group contingency program was implemented by Crouch et

al. (1985) to increase on-task behavior and diminish the disruptive behavior of

approximately 22 regular education students in a 45 minute art class. Although

disruptions were not very high during baseline with a mean of 12.15 they were

diminished to an intervention mean of 1.5. Additionally, on-task behavior increased

from a baseline mean of 62.29 percent to a mean percent of 84.48 during intervention.

In an earlier study by Packard (1970), on-task behavior was substantially

increased using an interdependent group contingency intervention across four general

education classrooms consisting of kindergarten, third, fifth, and sixth grades with 111 students. Briefly stated, these are just a small sample of the many positive results achieved in the early research on interdependent group-oriented contingencies (for a complete review of the previous group-oriented contingence research literature see Hayes, 1976; Litow & Pomroy, 1975; McLaughlin, 1974; Theodore et al., 2003; and Tingstrom et al., 2006).

Between the years of 1998 and 2007, 25 additional studies using interdependent group contingencies as a primary component of intervention were conducted in the school environment. Of these, 17 (68%) interventions were implemented to diminish disruptive behavior (e.g., Kelshaw-Levering, Sterling-Turner, Henry, & Skinner, 2000; Theodore, Bray, Kehle, & Jenson, 2001); five (20%) to increase academic behavior (e.g., Lannie & McCurdy, 2007; Popkin & Skinner, 2003); and three (20%) addressed prosocial classroom behavior (e.g., Babyak et al., 2000; Cashwell, Skinner, & Smith, 2001; for the comparative details of the 25 studies reviewed, see Appendix A; Conklin, Unpublished review, 2010). What follows is a review of the effects of these contingencies on behavior classes of interest to this investigation.

Effects of Interdependent Group Contingencies on Disruptive and Academic Behavior

A variation of the GBG was implemented by Lohrmann and Talerico (2004) to address three target behaviors: talking out, out-of-seat, and incomplete assignments. The researchers introduced their game, "Anchor the Boat," to the class and identified three rules for which the students could earn rewards: (a) Talk when it

is your turn, (b) Stay in your seat, and (c) Complete assignments. A multiple baseline design was used across reading, language arts, and math with ten 4th and 5th grade students in a self-contained special education classroom. The researchers used positive language to operationally define the behaviors, direct instruction and role play to teach the behaviors, and reinforced the behaviors when performed. The study produced mixed results, demonstrating that talking out was substantially reduced, while the results for out-of-seat behavior and incomplete assignments showed only modest effects. Finally, the study provided no measures of social validity or treatment fidelity, which may have contributed to the mixed findings.

Lannie and McCurdy (2007) also used a variation on the GBG to assess the on-task and disruptive behavior of twenty-two 1st grade students in an urban classroom. In contrast to the findings of Lohrmann and Talerico (2004), the Lannie and McCurdy study demonstrated that student on-task behavior increased by 49.6%, while disruptive behavior decreased by 31.5%. Their study also included the important components of social validity (positive for both students and teacher) and treatment fidelity (88%), which may have contributed to the positive results.

Effects of Interdependent Group Contingencies on Academic Performance

Interdependent group contingencies have proven effective in increasing scores on spelling, math, and English assignments (Popkin & Skinner, 2003), increasing the number of items learned (e.g., identifying the states that comprise the Northwest Region) in social studies (Dugan, Kamps, Leonard, Watkins, Rheinberger, & Stackhaus, 1995), increasing the use of components related to creative writing

(Maloney & Hopkins, 1973), increasing the number of correct Spanish word translations (Lloyd, Eberhardt, & Drake, 1996), increasing reading performance (Alric et al., 2007; Sharp & Skinner, 2004), and improving homework accuracy (Reinhardt, Theodore. Bray, & Kehle, 2009). These interventions were shown to be effective in special education as well as general education classrooms.

Popkin and Skinner (2003) provide an excellent example in which a multiple baseline design (Baer et al., 1968) across behaviors (i.e., academic performance) in spelling, math, and English within an interdependent group contingency game with randomly selected components was used in a classroom serving students with serious emotional disorders.

The intervention started with spelling immediately after the program was explained to the students and consisted of: (a) at the end of the school day the teacher told the students that it was time to draw for the spelling criterion for the day. She randomly selected a goal from the goal box, which contained index cards with percentages on them (e.g., 50%, 60%, 75%, 90% or 95%). She then announced the goal and whether the class had met the criterion, (b) if the class average grade met or exceeded the goal criterion, the teacher drew a reward from the reward box and announced the reward to the class, and (c) the teacher returned the cards to their respective boxes to be drawn the next day. The same procedures were also used with math and then English assignments within a multiple baseline design.

The students' quiz and test scores in spelling increased from a baseline mean of 62% to an intervention mean of 96%, math scores increased from a baseline mean

of 67% to an intervention mean of 87%, and English scores increased from a baseline mean of 88% to an intervention mean of 93%, thus, providing substantial increases across all three academic content areas. Additionally, the outcome data from a teacher self-recording daily checklist suggested that treatment fidelity was maintained at 100%. The dramatic changes in performance of these students suggest that they had the skills but chose not to engage in the tasks. This example serves to highlight the issue of students who "won't do" vs. "can't do" (Popkin & Skinner, 2003). Procedures such as group contingencies should only be used with students who have the ability to perform the required academic behaviors; increasing perceived reinforcement for a behavior that a student is not fluent will not produce effective intervention outcomes (Gickling & Thompson, 1985).

Effects of Interdependent Group Contingencies on Prosocial Classroom Behavior

A behavior that has a significant impact on academic success is prosocial classroom behavior (Rhodes, Jensen, & Rea, 1992). The lack of such skills can hinder both social and academic growth. For example, students who do not know how to request help or clarification may find it difficult to complete assignments (Rhodes et al.). Hence, the design of the educational environment must provide for more than preventing disruptive behaviors, it must also have systems for increasing prosocial behaviors (Winett & Winker, 1972). In regard to these concerns, a few researchers have used interdependent group contingencies to increase social skills (e.g., Lew et al., 1986; Mesch, Lew, Johnson, & Johnson, 1986; Winett, Battersby, & Edwards, 1975), increase appropriate classroom behavior (Babyak et al., 2000; Greenwood,

Hops, Delquadri, & Guild, 1974; Koch & Breyer, 1974), and increase students'

reports of their peers prosocial behaviors (Cashwell et al., 2001; Skinner, Cashwell, &

Skinner, 2000).

The Good Student Game (Babyak et al., 2000) was developed partially in

response to the disadvantages associated with the GBG and follows the procedures of

Landrum and Tankersley (1997), a class-wide student self-monitoring strategy with a

focus on prosocial classroom behavior. In the Good Student Game, students

monitored themselves and subsequently had the opportunity to assess their own

behavior. Specifically, students attended to and recorded incidents of rule following,

that is, appropriate classroom behavior. Three classes participated in this study. The

target behavior was students in their seat and quietly working independently. If all

students in the group were performing the target behavior, the group was scored as

yes; if even one student was not performing the target behavior, the group was scored

as no (i.e., an interdependent group-oriented contingency). Liberal use of praise was

used to encourage students to demonstrate good student behaviors. However, if a

student was not demonstrating good student behavior, the teacher would remind them

with a prompt. For example, "If the timer were to go off now, I'm afraid your group

would get a no." At the end of the game, the teacher collected the self-monitoring

sheets, announced whether the goal was met, and provided the designated

reinforcement. The results of the Good Student Game demonstrated that the game

sufficiently increased the targeted behaviors. During baseline, across all three classes,

student in seat and quiet behavior averaged 56%. When intervention was

implemented, student in seat and quiet behavior increased to 88%. Teachers agreed that the game was beneficial, adaptable to any classroom, and they enjoyed the program. Students reported that they enjoyed playing the game and it helped them get their work done. One hundred percent of the students agreed that they enjoyed earning rewards for showing good student behavior during the game.

Skinner et al. (2000) taught fourth grade students to report peers' prosocial or helping behaviors. The researchers referred to this reporting behavior as "tootling," derived from "tooting your own horn," as opposed to tattling, which is an undesirable classroom behavior. Tootling was defined as reporting helpful behaviors observed in their classmates (e.g., loaning another student a pencil, helping them with a math problem, or helping a student pick up her books). Through the use of an ABAB reversal design (Barlow & Hersen, 1984; Horner Carr, Halle, McGee, Odom, & Wolery, 2005), they demonstrated quite effective results, especially during the second AB portion of the intervention where tootles increased from only several during a three-session reversal to a mean of approximately 40 per session during the last intervention phase. The intervention was replicated the next year with a second grade class obtaining similar results (Cashwell et al., 2001), thus providing additional support for teaching prosocial classroom skill related behavior within an interdependent group-oriented contingency.

Advantages and Disadvantages of Group-Oriented Contingencies

There is one final point that needs to be included in even a short review of the group-oriented contingency literature. That is, the advantages and disadvantages of interdependent croup-oriented contingency interventions.

Advantages of group contingencies. Within the group contingency literature several positive features have been documented (e.g., McLaughlin, 1974; Skinner, Cashwell, & Dunn, 1996; Skinner, Skinner, Skinner, & Cashwell, 1999). Researchers have reported the procedures to be time-saving, inexpensive, effective, easy to learn and implement, and easy to manage in a classroom setting (e.g., Barrish et al., 1969; Grandy et al., 1973; Harris & Sherman, 1973; Packard, 1970). For example, one teacher involved in classroom research stated that initially the program took time from her teaching, however, once she adapted to the data recording and delivering consequences, the results were well worth the sacrifice (McAllister, Stachowiak, Baer, & Conderman, 1969). Drabman et al. (1974) reported that long after their research terminated, the teacher continued to use the experimental procedures. Packard (1970) reported that all of the intervention teachers finished the research project. Additionally, several of the teachers that were not involved in the research project later utilized variations of the procedures in their classrooms. Other positive features have been reported in the group contingency literature. For example, group contingencies promote the group members' increased positive social cooperation, peer influence, and spontaneous peer tutoring (e.g., Gresham & Gresham, 1982; Harris & Sherman, 1973; Hughs, 1992; Skinner et al., 1996). Finally, group

contingencies are considered to be acceptable and fair by teachers (Elliott, & Turko,

Gresham, 1987) and students (Goldberg & Shapiro, 1990).

  Disadvantages of group contingencies. Since early in the group contingency

literature several disadvantages (i.e., negative side effects) have been documented.

First, some students may refuse to participate or find it reinforcing to sabotage the

game (e.g., Barrish et al., 1969; Elliott et al., 1987). Additionally, researchers have

documented student harassment while implementing group contingency interventions

(e.g., Harris & Sherman, 1973). Skinner et al. (1996) has suggested that several

disadvantages accompany group contingency programs. First, students who follow

the rules and do their work find it punitive when other students loose points and

subsequently lose the group reinforcer. Second, when rewards that are not reinforcing

are offered to students, the desired behavior change will not occur; to the contrary, the

undesirable behavior may even accelerate. Additionally, while students may modify

the behavior(s) identified as a contingency for the designated reward, they may, at the

same time, exhibit other disruptive behaviors not identified for change (Kelshaw-

Levering et al., 2000). Finally, it may be unethical to exclude students with

disabilities (Skinner et al., 1996).

Class-Wide Function-related Intervention Teams (CW-FIT) and Preliminary

Findings

  Class-Wide Function-related Intervention Teams (CW-FIT) is a class-wide

intervention similar to the GBG (Barrish et al., 1969) in that it includes an

interdependent group-oriented contingency component. However, CW-FIT differs in

several important ways from the GBG. Whereas the GBG's primary focus has been

on disruptive, negative behaviors, CW-FIT's primary component is focused on

teaching student prosocial classroom behaviors. Additionally, teachers are taught to

reinforce these newly acquired behaviors with liberal specific praise. For example,

"Anthony, thank you for raising your hand and waiting for me to call on you."

Students are taught such skills as following directions the first time and how to get

the teacher's attention. Teaching these skills takes advantage of what is known about

the common behavior functions as they relate to promoting behavior problems in the

classroom (Mitchem, Young, & Benyo, 2001). CW-FIT strengthens prosocial

classroom behaviors and diminishes problem behaviors by directly teaching and

reinforcing the behavior of groups of students via the group contingency within the

classroom environment. These skills address attention -- "How to get the teacher's

attention," escape -- requesting assistance or a break, and recruiting reinforcement;

(see review of functional assessment in school settings by Ervin, Radford, Bertsch,

Piper, Ehrhardt, & Poling, 2001). Finally, the modification of the classroom

environment (e.g., creating working groups of students) and teaching and reinforcing

appropriate prosocial classroom behaviors are two components with the strongest

level of evidence for reducing problem behaviors in the classroom as recommended

by the Institute of Educational Science (Epstein, Atkins, Cullinan, Kutash, & Weave,

2008).

CW-FIT research has explored the effects on increasing student on-task

behavior, diminishing disruptive behavior, and increasing teacher praise in first, third,

fifth, sixth, seventh, and eighth grade classes (Conklin, et al., Unpublished manuscript; Kamps, 2009; Kamps et al., 2010). CW-FIT studies have reported reductions in disruptive behavior and increases in on-task behavior. Additionally, teachers' specific praise statements increased to higher rates (Kamps, 2009; Kamps et al., 2010). Kamps et al. (2010) reported that students' on-task behavior in six separate classes increased from a baseline mean of 43.6% occurrence to an intervention mean of 79.7%. Additionally, the disruptive behaviors of 8 target students decreased from a mean of 18.2 disruptive behaviors during baseline to 5.7 during CW-FIT intervention. These results are thought to have occurred because CW-FIT addresses the function of inappropriate behaviors at the class-wide level rather than individual student level. For example, when a number of students call out, they are taught at the class-wide level to raise their hands as an appropriate means of getting teacher attention.

This author conducted a previous study of CW-FIT in an elementary school kindergarten classroom in a mid-western metropolitan area (Conklin, unpublished manuscript, 2009). Participants were 20 students (12 boys and 8 girls) and one 32-year-old female teacher with seven years of experience. The teacher had requested classroom management assistance as part of a university supported School-Wide Positive Behavior Support Project. At a first meeting the teacher expressed concerns that her students were being out of their seats, talking loudly, not raising their hands before talking, general disruption in the classroom, (e.g., running, pushing, throwing things), and non-compliance. At a second meeting, the researcher offered to assist her in implementing CW-FIT as a class-wide behavior management intervention.

As part of the typical CW-FIT protocol, five prosocial classroom behaviors were taught to the students. These included: (a) How to get the teacher's attention, (b) Follow directions the first time, (c) Ignore inappropriate behavior, (d) Staying in our seat, and (e) Talk in a quiet voice. Additionally, the class was divided into five groups. The teacher was instructed to give specific praise to groups of students for the use of their newly learned skills. During the course of daily instruction (e.g., math), the teacher used a kitchen timer set to beep at random intervals (e.g., 1-5 min). At the beep of the timer, the teacher would scan the room for appropriate student behaviors, make specific praise statements for their appropriate behaviors, and assign points to groups of students. Points were earned by groups in which all of the students were emitting the appropriate behaviors. As part of this CW-FIT intervention, data were gathered on two teacher and two student behaviors. Teacher behaviors included verbal praise and reprimands and student behaviors included both on-task and compliance behaviors.

Student on-task increased from a baseline mean of 28% of intervals to an intervention mean of 86%. These results are similar to those obtained by other researchers using the CW-FIT intervention (e.g., Conklin et al., Unpublished manuscript, 2009; Kamps, 2009; Kamps et el., 2010). Although student compliance was relatively high at the beginning of baseline (68%), the mean baseline level was 54% of opportunities to comply and the intervention mean was 80%. These results are similar to previous findings with preschoolers using the GBG as reported by Swiezy, Matson, and Box (1993).

Teacher praise during baseline was at a mean of 1.33 per session and made a increased to a mean level of 23 per session during the CW-FIT intervention. Teacher reprimands during the original baseline condition and intervention were relatively unchanged, thus demonstrating a much higher ratio of praises to reprimands during intervention than the minimum of a 4 to 1 ratio recommended by previous researchers (e.g., Nafpaktitis, Mayer, & Butterworth, 1985; Rhode et al., 1992; Walker, Covin, & Ramsey, 1985; Walker, Ramsey, & Gresham, 2004).

While an interesting demonstration of CW-FIT in a Kindergarten classroom, this study was not a rigorous evaluation given that it was less than an ABAB design as recommended by Horner et al. (2005). However, the data obtained from this study did assist in demonstrating feasibility of CW-FIT sufficient for further investigation.

Purpose

The purpose of the current study was to systematically replicate the prior study of CW-FIT (Conklin, Unpublished manuscript, 2009), and address several novel components and new research questions using a more rigorous single subject design. The study adds to what is known about CW-FIT and also the literature reporting the effects of interdependent group-oriented contingencies (e.g., Cashwell et al., 2001; Conklin et al., 2010; Kamps, 2009; Kamps et al., 2010; Skinner et al., 2000). This replication study adds to the generalizability of the CW-FIT effects on a wider range of teachers, behaviors, and grade levels. The study replicates CW-FIT in a Kindergarten class and also examined the effects of CW-FIT in a 2nd and two 7th grade classrooms. A novel addition to the study design included measurement of the

behaviors being taught within the protocol of CW-FIT (e.g., hand-raising, out-of-seat, talking out, and compliance) and collateral effects of problem behavior reduction on improved academic behaviors (i.e., completed assignments and semester grades).

Specifically, the research questions guiding this study were:

1. To what extent will the CW-FIT intervention have an effect on increasing teacher praise statements as measured by direct observation?

2. To what extent will the CW-FIT intervention have an effect on increasing students' appropriate classroom behaviors (i.e., on-task, compliance, hand-raising, and staying in their seats) compared to baseline as measured by direct observation?

3. What collateral effects will increases in appropriate classroom behaviors have on the completion of class assignments and the grades received by students in the seventh grade classes compared to non-intervention as measured by permanent product and semester grades?

Methods

Participants and Settings

Teachers. All participating teachers had requested classroom management assistance as part of the protocol of a larger University research project investigating School-wide Positive Behavior Support. The teacher in the kindergarten classroom was a 36-year-old female with five years of teaching experience. The teacher in the 2nd grade classroom was a 28-year-old female with four years of teaching experience, and the teacher in the 7th grade classroom was a 28-year-old male with no previous

teaching experience. Additionally, when the 2nd grade teacher went on maternity leave, a 24-year-old female with merely student teaching experience took her place.

Students. All of the students in the four classes participated in the study. The kindergarten classroom served 22 students for the full day. The 2nd grade classroom served 20 students. The 7th grade a.m. classroom served 18 students and the 7th grade p.m. classroom served 20 students. Additionally, target students from these classes were nominated by the teachers (3 target students from the 2nd grade, 6 from kindergarten, 2 from 7th a.m., and 2 from 7th p.m. Finally, some of the students were receiving special education services. However, there were none from these classes.

Setting. All participating students attended classes on a parochial school campus that included elementary and junior high school buildings in a large Midwestern city. The school campus had a total population of 347 students: 87% received free or reduced lunch, 8% had Individual Education Programs (IEPs), 87% were minority, and 25% were English language learners. These classes were chosen because they were part of a university supported School-Wide Positive Behavior Support (SW-PBS) research project, and teachers requested assistance for classroom behavior problems.

Informed consent. Informed consent was obtained from all participants, teachers and target students, via the University of Kansas Institutional Review Board process. This study was approved by the University of Kansas Human Subjects Committee.

Dependent Variables

The dependent variables in the study consisted of two teacher behaviors: praise and reprimands; and five student behaviors: on-task, compliance, hand-raising, out-of-seat, and talking-out. Additionally, the collateral effects (Barlow & Herson, 1984) of the CW-FIT intervention on completed assignments and semester grades for the two 7th grade classes were assessed.

Teacher behaviors. Teacher behaviors included praise and reprimands (see Table 1 for operational definitions of teacher behaviors). Praise statements were defined as providing positive feedback to students on their behavioral or academic performance. Points on the point chart were not counted as praises. Examples include, "Thank you Sammy for staying in your seat," or "I like the way Lorie raised her hand to get my attention." Reprimands were defined as statements for students to stop inappropriate behaviors and/or to provide corrective feedback. Examples included, "I am only taking questions from those who raise their hands," or "It's getting loud in here."

Table 1.
Operational Definitions of Teacher Behaviors

Praise	Praise is defined as a specific positive comment made to a student or to the class as a whole that identifies what exactly the student or group has just done to warrant that positive feedback—also identified as social reinforcement.
Reprimand	A reprimand is defined as a specific negative comment made to a student or to the class as a whole that identifies what exactly the student or group has just done to warrant negative feedback.

Student behaviors. Student behaviors included: on-task, hand raising, out-of-seat, talking out, compliance (i.e., following directions), and assignment completion (see Table 2 for operational definitions of student behaviors). Additionally, first and second semester grades were compared for each of the two 7th grade classes.

Table 2.
Operational Definitions of Student Behavior

On-Task:	On-task was defined as attending to the lesson (e.g., watching the teacher or person talking, reading along silently or out loud, writing assignments, and answering/asking academic questions).
Out-of-Seat:	Out-of-seat was defined as being out of one's assigned seat without the teacher's permission. Conversely, in-seat is defined as: (a) Sit and stay seated in our chair (b) keep your feet underneath your desk, and the chair legs on the floor.
Talking Out:	Talking out was defined as talking in a voice loud enough to be heard at the next table. This was addressed with the classroom rule of "Talk with a quiet voice."
Hand Raising:	Hand raising was defined as raising one's hand and waiting to be called on before talking. Hand raising was addresses with the rule, "How to get the teacher's attention." For data collection purposes, hand raising was scored as occurring if at least one student in a group raised their hand during any 10-s interval.
Compliance: Following Directions	Follow directions the first time was defined as: (a) Look at the person and listen, (b) say OK, (c) do it, and (d) check back (if needed). For data collection, the individual must be in the process of following the direction given within 5 seconds after the direction was given.
Assignment Completion:	Assignment completion was defined as completing the assignment within the allocated time period (either in class or as a take-home assignment) and turning it in to the teacher at the time indicated.

Data collection. Data were collected by the researcher using paper and pencil data sheets (see Appendix B for samples). Four recording procedures were used: (a) frequency for teacher praise (only verbal praises were recorded) and reprimands, (b) momentary time sampling for on-task behavior, (c) partial interval recording for out-of-seat, talking out, and hand raising behavior, and (d) compliance was computed as percent of opportunities to comply.

Recording procedures for on-task consisted of momentary time sampling (Sulzer-Azaroff & Mayer, 1991). In momentary time sample, target behaviors were recorded at the end of each 30-sec interval, each group and each target student was observed as either engaged or not engaged at that moment. The observer looked at group one, scored; then looked at group two, scored; etc. On-task was scored as a plus (+); off-task scored as a minus (-) on the data sheet. Criteria for scoring a + for group on-task was that all students in the group had to be engaged at the 30-sec moment.

Recording procedures of for hand raising, out-of-seat, and talking out behaviors were recorded using partial interval recording procedures (Sulzer-Azaroff & Mayer, 1991) on separate data sheets. In partial interval recording, if the behavior occurred by any member in a group at any time during the 20-s interval, a plus (+) was recorded on the data sheet; a minus (-) recorded if the behavior did not occur. Recording procedures for compliance (i.e., following directions) were recorded as percent of opportunities to comply. For example, if 20 students were in the class and a direction was given (e.g., open your notebooks or move to the corner carpet) and 15 of the students responded within 5 sec, it was scored as percent of compliance (i.e.,

15 / 20, or 75%). Class-wide means consisted of the sum of group data divided by the number of groups in the class. For example, if there were 4 groups in the class, and their percent of intervals of on-task were 87%, 96%, 74%, and 92%, our computation was as follows: $(.87 + .96 + .74 + .92) = 3.49 / 4 = 87.25\%$ class-wide mean for that session.

These measures were taken in random order for all baseline and CW-FIT sessions although certain behavior data were gathered at the same time. For example: (a) During the same 15-minutes of 30-second intervals as on-task behavior, teacher praise and reprimands were tallied (points tallied on the point chart were not counted as praise) as were compliance data, (b) out-of-seat and talking out behaviors were gathered during the same 10-minutes of 20-second intervals, (c) hand raising behavior was gathered separately during 10-minutes of 20-second intervals. All observations during each session were completed in less than 40-minutes using five data sheets (one for on task, praise and reprimands, and four others for specific student behaviors). Observers used a small hand-held timer to track intervals (see Appendix B for sample data sheets).

Interobserver reliability. A graduate student was trained to perform reliability measures. Training was accomplished through verbal and written instructions and was continued until the reliability observer and the primary researcher obtained a reliability score of 85% or higher for at least three data sessions. In addition, the researcher and the reliability observer reviewed the operational definitions for the behaviors being measured before each reliability session. Reliability was computed

by using the "point by point" agreement method (Kennedy, 2005). Interobserver agreement was calculated by dividing the total number of agreements by the total number of agreements plus disagreements, then multiplying by 100 (Kennedy, 2005; Repp, Deitz, Boles, Deitz, & Repp, 1976). A reliability observer was available for approximately 26% of the data sessions.

Consumer Satisfaction. A consumer satisfaction survey was distributed to all teachers and students (see Appendix C, D, and E for teacher and student consumer satisfaction surveys) to assess social validity (Horner et al., 2005; Wolf, 1978).

The consumer satisfaction survey for the teachers consisted of 16 questions on a 5-point likert scale. These questions related to: (a) ease of use, (b) acceptability, (c) difficulty, (d) effectiveness, and (e) student responsiveness. The survey for the kindergarten and 2nd grade students consisted of 15 questions with three response choices: (a) Yes/a lot with a smiley face above, (b) Okay/All right with a straight face above, and (c) No/Not at all with a frowning face above. Questions related to (a) likeability, (b) easy to learn or do, and (c) ease of performance. The survey for the 7th graders was the same as for kindergarten and 2nd grade without the faces.

Experimental Design

Several issues were considered leading to the design selection. To improve on the prior study design, a goal was to demonstrate multiple replications of effects across teachers. Additionally, a robust methodology was desired particularly in the second half of the study in the two different science classes which had the same teacher serving as the implementer. Thus, combining the ABAB within a Multiple

Baseline design appeared to provide the desired level of control for the many threats

to internal and external validity (Kennedy, 2005). This combination design provided

analysis of functional relations across teachers and classes resulting in multiple points

at which a functional relation was confirmed (see Horner et al., 2005). In the design,

experimental conditions were manipulated as ABABABABAB in 2nd grade,

ABABAB in kindergarten, and ABAB in 7th grade a.m. and p.m. classes, where A =

Baseline and B = CW-FIT. The multiple baseline was non-concurrent with 2nd grade

and kindergarten concurrently and the two 7th grade classes concurrent.

Procedures

    Teacher preparation and student identification. A short initial conference with

each teacher was conducted (20-30 min). The intended outcome of the conference

was to obtain preliminary information about the classroom environment, the target

students, and to discuss the students' classroom behaviors. Following the conference,

classroom observations were conducted to obtain collaborative information on

student behaviors, as well as other variables that could be affecting the student

behaviors (e.g., student seating arrangements, access to materials).

    After the observations, a second teacher conference was conducted. In this

conference, the information from the initial conference and the information from the

observation of the classroom were discussed (e.g., identifying target students and

student seating arrangements for classroom groups). This meeting lasted

approximately 30 minutes. Target students were initially identified by the teachers as

students having difficulty staying engaged, and exhibiting out-of-seat, talking out,

talking to peers, or other disruptive behaviors (often referred to as "tough kids";

Rhode et al., 1992). A process similar to the *Systematic Screening for Behavior*

Disorders (SSBD) was used wherein the teacher rank ordered the target students. That

is, the highest risk student as number one, the next highest as number two, the next

highest as number three, until all students had been rank ordered. Two to six at risk

students from each classroom were selected as target students. Once selected, the

researcher observed the target students, gathering baseline data on them for the

purpose of identifying the effects of CW-FIT on the target students specifically.

   Baseline Procedures (A). During baseline conditions the classrooms were not

altered other than assigning groups, thus baseline was "business as usual." The

common procedure in the classrooms included reprimands and a behavior chart. The

behavior chart, which comes in several forms, consisted of a matrix of pockets

containing green, yellow, and red cards. Each student had their name on one of the

pockets. The card facing out of the pocket each morning is green. If a student disrupts

the class, he is asked to flip his card. This first occurrence usually indicates a yellow

card meaning the loss of recess. The next occurrence moves to a red card, which

precipitates a written report of the incident and a note home to the parent.

   Baseline data were collected during those times during the day when the most

challenging student behaviors occurred and designated for the CW-FIT intervention.

For example, the most challenging student behaviors occurred during morning

instructional floor time and reading for kindergarten, math for the 2nd grade, and

science for both 7th grade classes. Baseline data were collected at these times until the

data were stable or moving in the opposite direction of that expected from intervention, and a minimum of three data points were collected. Additionally, on-task behavior was the behavior chosen as the indicator for a change in conditions. The rational for this decision was that on-task is an indicator of both appropriate behavior and disruptive behavior as disruptive behaviors would be at lower levels as these behaviors are incompatible with on-task behavior. Reversals were data-based decisions: 5 to 6 on task data points at high, stable rates indicated readiness for reversal. Reversals were initiated by having a short teacher meeting (10 min) in which the teacher was asked to remove all CW-FIT stimuli from the classroom, discontinue use of the timer, and conduct class sessions "business as usual" for the next few days as reversal data were collected.

CW-FIT intervention (B). Intervention consisted of: (a) teacher training including written procedural descriptions, (b) explanation of CW-FIT materials, (c) student training on the CW-FIT skill components, and (d) the group contingency token economy (earning points and getting rewards).Teacher training in CW-FIT started with a discussion of the baseline data and the need for CW-FIT. Next, the teachers were provided with training material.

CW-FIT training materials consisted of: (a) a written description of CW- FIT, (b) teaching scripts for each skill, (c) brief written procedures for the group contingency game, and (d) procedures for assessing student reinforcer preferences (see Appendix F). Other classroom materials included: (a) five skill posters (11 x 17) that define the rules for the appropriate behaviors linked to the CW-FIT game (see

Appendix G for all skill posters) and (b) a point chart (11 x 17) for keeping track of group points (see Appendix H). A small timer was provided for the teacher to keep track of intervals for giving points on the point chart for group use of the target skills. Use of the teams and points in a game format and rewards for meeting point goals was intended to reinforce occurrences of the targeted student behaviors.

The day immediately after teacher training, the CW-FIT intervention was implemented in the classrooms and consisted of: (a) teaching students prosocial classroom behaviors, (b) teaching the teachers to reinforce the students' appropriate use of the behaviors (e.g., specific praise for use of skills), and (c) reinforcing teacher use of specific praise statements related to the students' use of the skills within the group contingency game format. CW-FIT intervention data were not collected for at least 3 days, and after intervention fidelity was at a minimum level of 80%. All of the classes met this requirement and data collection began on the fourth day after training.

The *first component of the CW-FIT* intervention is to teach the students replacement behaviors for the inappropriate behaviors that currently function to: (a) obtain attention (adult or peer); (b) escape demands; and (c) gain access to materials and activities. In this study, the following skills were taught to all classes: (a) How to get the teacher's attention, (b) Follow directions the first time, and (c) Ignore inappropriate behavior. These skills cover the range of behavior functions (i.e., attention, escape, and access; Kamps, Wendland, & Culpepper, 2006; Mitchem et al., 2000)**.** With these skills students are able to gain attention appropriately, request

assistance or a break, and recruit reinforcement (i.e., social or tangible). Two additional skills were taught: (d) Staying in our seat, and (e) Talk in a quiet voice. These additional student behaviors addressed two common disruptive classroom behaviors (talking out and out-of-seat) and assisted in maintaining a peaceful and quiet classroom environment that was conducive to teaching and learning.

Student training consisted of the researcher and the teacher using a direct instruction model for teaching skills to the students (i.e., defining the skill, modeling the skill, having students role-play examples and non-examples of the skills, and providing feedback on their performance). For the kindergarten and second grade classes, the skills were identified and demonstrated one at a time, every other school day, across a two-week period. This skill training was spread over a series of days because many of the younger students did not have the skills that are taught in the CW-FIT protocol or the skills were not a fluent component of their repertoire. For the two 7th grade classes, all of the skills were identified and demonstrated in one session.

The second component of CW-FIT is *extinction,* the process wherein reinforcement that has previously followed a behavior is withheld. Extinction was used to decrease the attention to inappropriate behavior. Teachers and students were given direct instruction and opportunities to practice ignoring those student behaviors targeted for elimination. This second component was addressed by teaching the skill, "Ignore other's inappropriate behavior." Through the process of teaching and reinforcing appropriate behaviors and ignoring inappropriate behaviors, the teachers and students developed a new repertoire of classroom behaviors.

The final component of CW-FIT is *differential reinforcement of alternative (DRA) or incompatible behaviors (DRI)*. Differential reinforcement is the liberal use of attention to appropriate behaviors, and rewards in the form of praise, and other reinforcer preferences. For example, students are praised when raising their hands to get the teacher's attention and not shouting out (DRA). Similarly, students are praised for staying seated as opposed to being out of their seats (DRI).

As stated earlier, CW-FIT functions within an interdependent group contingency game, token economy format. Each classroom was divided into 4 or 5 groups of 3 to 5 students per group. These groups were usually rows of students or groups of students' desks facing each other. During the game, the teacher set the timer to beep at 2-4 min intervals. After each timer beep, the teacher rewarded the teams exhibiting the appropriate behaviors with a point (the token economy aspect of the game). At the end of the game, for example, if the goal was 14 points, and 3 of 5 groups earned 14 or more points, they received the designated reward and the teams that earned less than 14 points did not receive the reward. (Conklin et al., Unpublished manuscript, 2010; Kamps, 2009; Kamps et al., 2010).

CW-FIT sessions started with teaching the aforementioned classroom skills (e.g., How to get the teacher's attention, etc.), presented in a token economy, game format (e.g., earning points to get a reward). Subsequent sessions, for 1-2 weeks, began with a series of precorrects. That is, defining and describing the skills the students had learned during the previous training sessions. These precorrects served as a prompt to remind the students that the game was going to start and what the

teacher would be looking for and rewarding in the form of student behavior. While teaching the skills to the students, this precorrect process lasted up to 5 or 10 minutes, but decreased in time as the students became more proficient at emitting the appropriate classroom behaviors. At this time, the teacher diminished precorrects to just naming the skills (e.g., "We will be following directions the first time and you all know how to get the teacher's attention!").

The length of CW-FIT sessions varied depending on the age of the students and the amount of class time available. In the kindergarten class, sessions were 45 minutes during centers or reading. In the 2nd grade math class, sessions were 50 minutes and in the two 7th grade science classes, sessions were 45 to 60 minutes. Observations and data collection occurred only during these designated class times.

The number of points earned during the CW-FIT game depended upon two factors: (a) the amount of class time available and (b) the time intervals set on the timer. When CW-FIT was first introduced into the classroom, timer intervals were short (1-2 min) and the point goal was large (e.g., 20 points). To insure that the game was highly reinforcing and all teams won, a maximum of 70 to 80% of the possible points was required as a point goal. For example, during a game scheduled to run for 40 minutes with average timer duration of two minutes, the possible points would be (40 / 2 = 20). A reasonable point goal would be (20 x .70 = 14 points). Each time the timer beeped, the teams were specifically praised for using their newly acquired skills and for their good behavior. As the students learned the skills and subsequently the rules of the game, the intervals became longer (3-5 min) while the number of points

required to win the game decreased. Lengthening the intervals, by its very nature, resulted in a thinning in the schedule of reinforcement for the students, as they were required to maintain the skills and behaviors for longer periods of time. At this stage of the game, students were required to earn a higher percentage of the possible points (85 to 90%) in order to win.

A booster session was necessary for the kindergarten teacher (see Figure 2, data point 11). The booster session was deemed necessary because data were declining and intervention fidelity had dropped below a level of 75%. This had to do with not assigning points, not tallying points at the end of the game, and not providing the reinforcer. The booster session took about 10 min and included sharing the data with the teacher, explaining the importance of praising the behaviors as part of the CW-FIT program, and providing preferred reinforcers as immediately as possible after each game.

Procedural fidelity. A 21-item checklist was used to measure (a) CW-FIT procedural fidelity (11 items), and (b) general classroom management (10 items). Measures were taken on the implementation of CW-FIT to identify the extent to which the intervention components were implemented as designed. The CW-FIT fidelity portion of the checklist contained items directly related to the CW-FIT intervention (e.g., pre-corrects of skills occur at beginning of session, skills are prominently displayed on posters, corrections for behavior match language of skills, point goal determined, team point chart displayed, points are awarded to individuals or teams for use of the skills at set intervals). These items were scored as "yes" or

"no." The procedural fidelity portion of the checklist was assigned a score by dividing the total number of "yes" items by the total number of items on the checklist. For example, 9 "yes" items divided by the total of 11 items equals a score of 81.8% (see Appendix I, the first 11 items on the checklist). The fidelity checklist indicated how well the independent variable was being implemented. If key components were not performed, the diminished dosage of treatment potentially affected the dependent variables. For example, if points were not awarded to groups, praise was not given for the use of skills, and reinforcers were not awarded in a timely manner, the intervention effects were lessened.

The checklist also contained items scored "yes" or "no" that related to general classroom management (e.g., materials for use are available and location noted for students, directions for class assignments are provided and clear, teacher ignores minor inappropriate behaviors, transitions are smooth with only minor disruptions). These items were not directly related to the implementation of CW-FIT, but were contributing variables to classroom behavior and were also assigned a percent score (e.g., 8 / 10 = 80%), which indicated the current level of general classroom management. Fidelity and general classroom management were conducted on approximately 36% of data sessions (see Appendix I, the bottom 10 items).

Results

Research Question One

To what extent did the CW-FIT intervention have an effect on increasing teacher praise statements? Results indicated that teacher praise statements increased substantially in frequency over baseline levels for all four classroom teachers. The pooled means of praise statements across all baseline conditions were very low at 1.6 (range 0-5), 3.1 (range, 0-8), 0.7 (range 0-2), and 1.7 (range 0-6) per 15-min session for the 2nd grade, kindergarten, 7th grade a.m., and 7th grade p.m. classes respectively. The frequency of praise statements during CW-FIT increased substantially to means of 36.3 (range 10-63), 32.3 (range 18-68), 36.4 (range 23-59), and 38.5 (range 26-49) for the 2nd grade, kindergarten, 7th grade a.m., and 7th grade p.m. classes, respectively, while reprimands remained relatively low and stable across all conditions (see Figure 1).

Figure 1. *Class-wide teacher praise and reprimands across 4 classes. * The shaded area idicates the ABAB portion for the substitute 2nd grade teacher.*

Research Question Two

To what extent did the CW-FIT intervention have an effect on increasing students' prosocial classroom behaviors? Results indicated that class-wide on-task behavior increased substantially over baseline levels in all classes (see Figure 2).
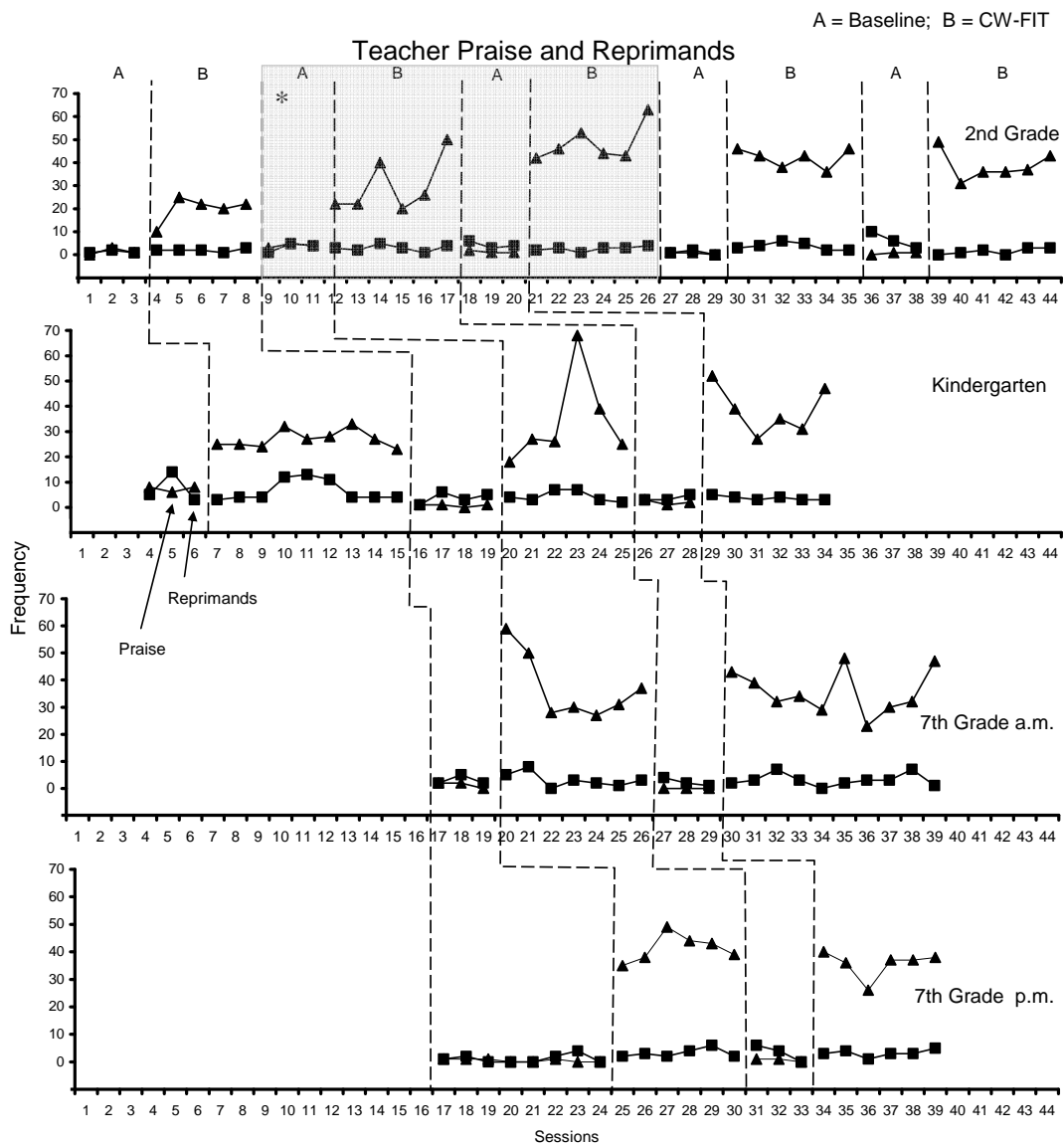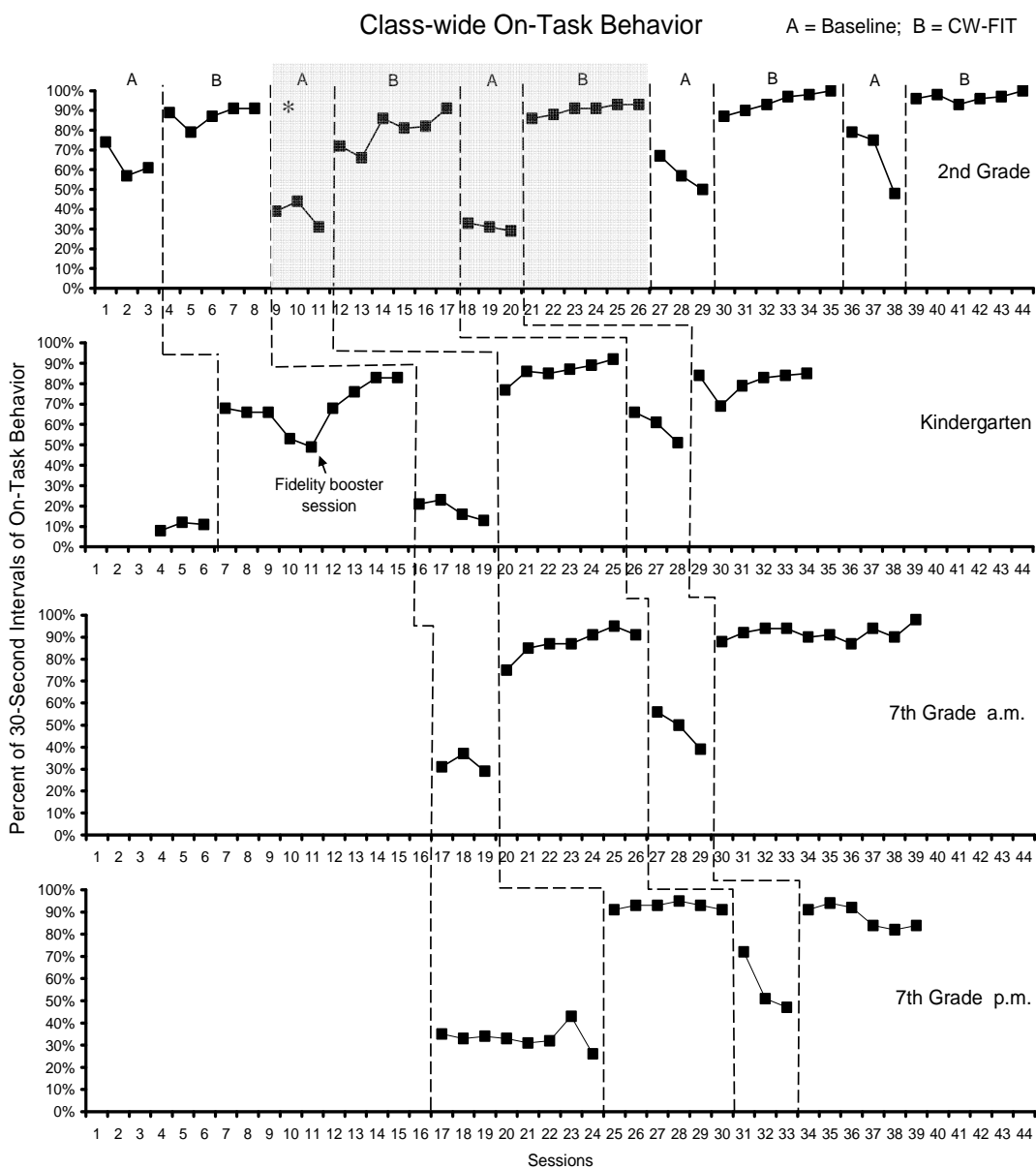
Figure 1. *Class-wide On-Task across 4 classes. * The shaded area idicates the ABAB portion for the substitute 2nd grade teacher.*

Baseline levels of class-wide on-task behavior pooled means across all baseline conditions ranged from moderate to low levels at 51.7% (range 29-79%), 28.2% (8-66%), 40.3% (range 29-56%), and 39.7% (26-72%) of intervals per session for the 2nd grade, kindergarten, 7th grade a.m., and 7th grade p.m. classes respectively. During CW-FIT the class-wide on-task behavior increased to much higher levels and with substantially less variability except for the fourth and fifth data points of the first CW-FIT intervention condition in the kindergarten classroom. At this time, a booster session was conducted. CW-FIT intervention pooled means increased to 89.7% (72-100%), 76.8% (49-92%), 89.9% (75-98%), and 90.3% (82-95%) of intervals for the 2nd grade, kindergarten, 7th grade a.m., and 7th grade p.m. classes respectively with less variability.

Effects of CW-FIT on Class-wide Behaviors Taught During the Intervention

As part of the CW-FIT intervention, several appropriate classroom behaviors were taught to the students in each classroom. These behaviors included: (a) How to get the teacher's attention, (b) Follow directions the first time, (c) Ignore other's inappropriate behavior, (d) Staying in our seat, and (e) Talk in a quiet voice. Data were gathered on four of these behaviors. That is, four of these behaviors were operationalized for direct observation and data collection.

The four behaviors that were operationalized and data were gathered on were: (a) compliance, (b) hand raising, (c) out-of-seat, and (d) talking out behaviors.

In Figure 3, class-wide compliance behavior pooled means across all baseline conditions ranged from moderate to low levels at 43.7% (range 21-72%), 24.2% (range 16-48%), 37% (range 21-69%), and 35.8% (range 14-70%) of intervals per session for the 2nd grade, kindergarten, 7th grade a.m., and 7th grade p.m. classes, respectively. CW-FIT intervention pooled means increased to 92.7% (range 82-100%), 92.1% (range 86-95%), 91.8% (range 83-100%), and 95.7% (range 91-100%) of intervals for the 2nd grade, kindergarten, 7th grade a.m., and 7th grade p.m. classes, respectively.

Figure 3. *Pooled means for baseline and CW-FIT class-wide compliance behavior across 4 classes.*

In Figure 4, class-wide hand raising behavior pooled means across all baseline conditions were at very low levels of 4.8% (range 0-11%), 8.2% (range 5-12%), 3.8% (range 0-10%), and 8.8% (range 5-13%) of intervals per session for the 2nd grade, kindergarten, 7th grade a.m., and 7th grade p.m. classes respectively. CW-FIT intervention pooled means increased to 45% (range 27-71%), 35.3% (range 26-51%), 30.2% (range 13-49%), and 40.3% (range 25-52%) of intervals per session for the 2nd grade, kindergarten, 7th grade a.m., and 7th grade p.m. classes, respectively.
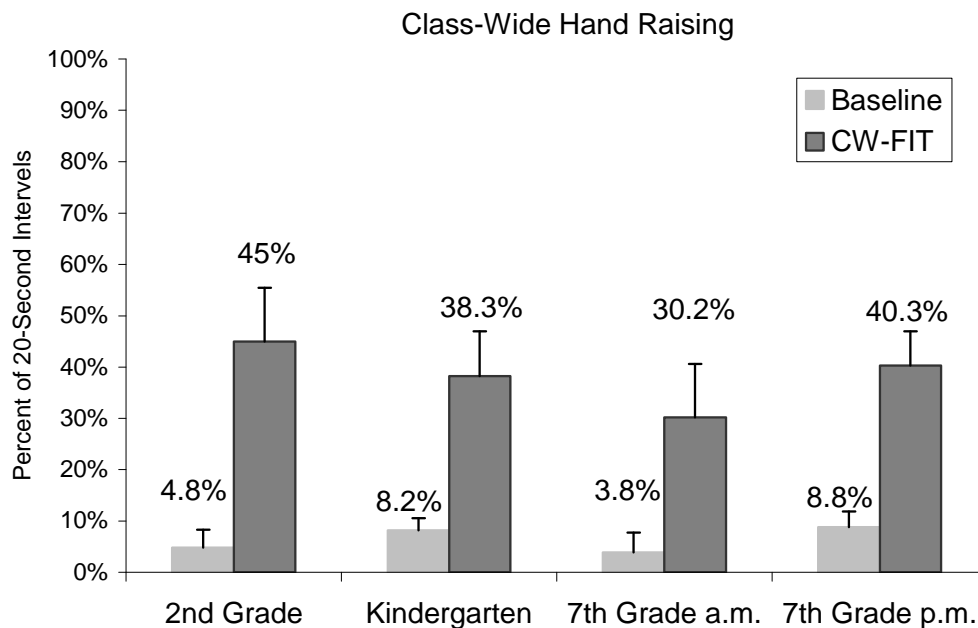
Figure 4. *Pooled means for baseline and CW-FIT class-wide hand raising behavior across 4 classes.*

In Figure 5, class-wide out-of-seat behavior pooled means across all baseline conditions were at moderate to high levels of 43% (range 5-85%), 58.5% (range 43-80%), 22% (range 13-30%), and 28.5% (range 20-37%) of intervals per session for the 2nd grade, kindergarten, 7th grade a.m., and 7th grade p.m. classes respectively with much variability. CW-FIT intervention pooled means decreased to 6.2% (range 0-33%), 9.5% (range 5-15%), 1.3% (range 0-4%), and 1.8% (range 0-3%) of intervals per session for the 2nd grade, kindergarten, 7th grade a.m., and 7th grade p.m. classes, respectively.
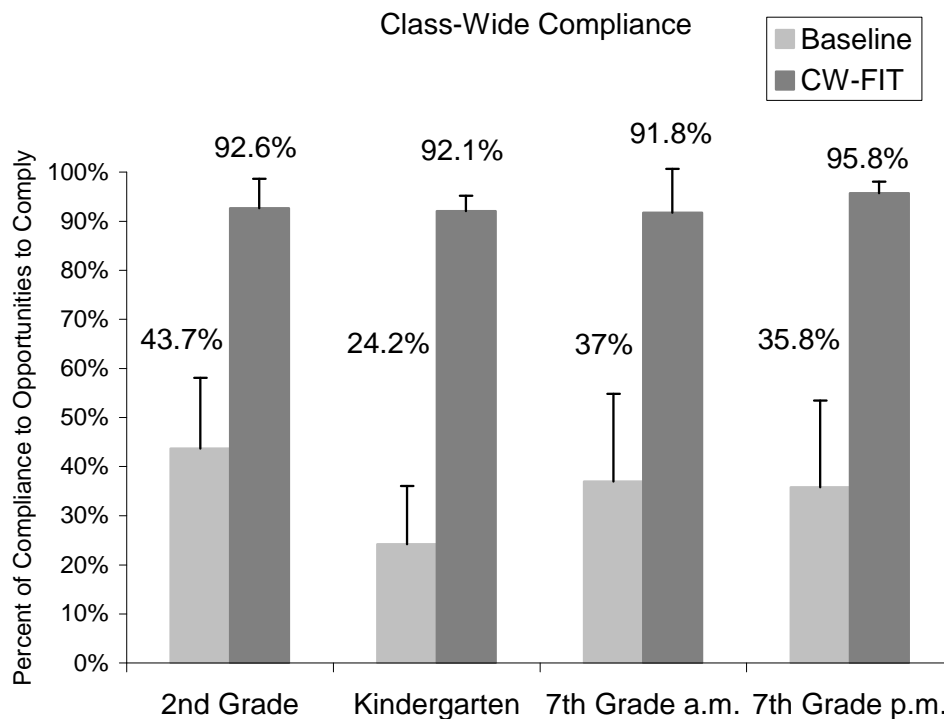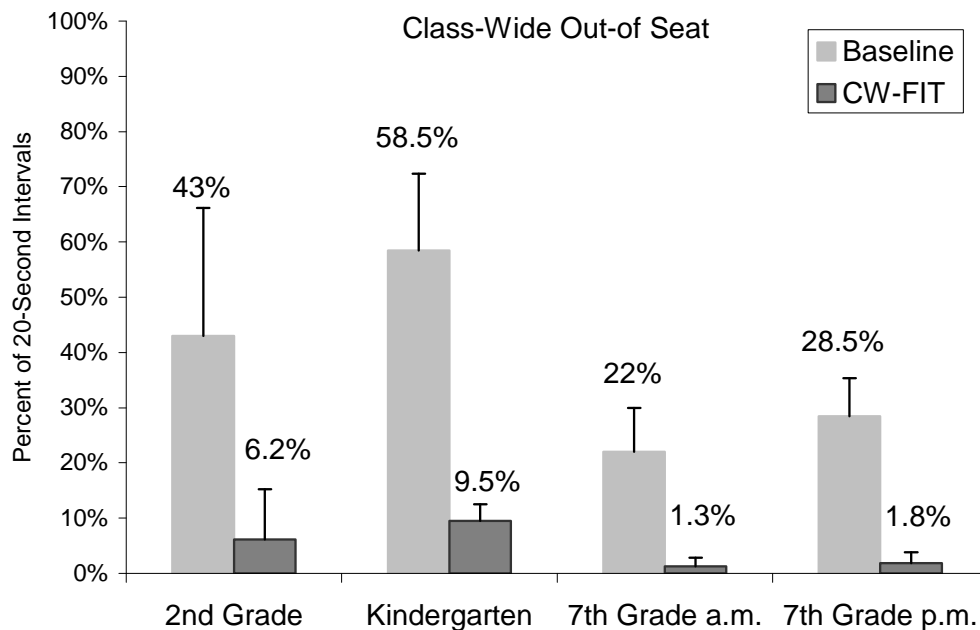

Figure 5. *Pooled means for baseline and CW-FIT class-wide out-of-seat behavioracross 4 classes.*

In Figure 6, class-wide talking out behavior pooled means across all baseline conditions were at high levels of 36.1% (range 16-59%), 59.3% (range 38-75%), 44% (range 33-69%), and 39.2% (range 23-58%) of intervals per session for the 2nd grade, kindergarten, 7th grade a.m., and 7th grade p.m. classes respectively. CW-FIT intervention pooled means decreased to much lower levels of 7.7% (range 0-30%), 10.3% (range 5-17%), 8.1% (range 4-11%), and 7.3% (range 3-15%) of intervals per session for the 2nd grade, kindergarten, 7th grade a.m., and 7th grade p.m. classes, respectively.
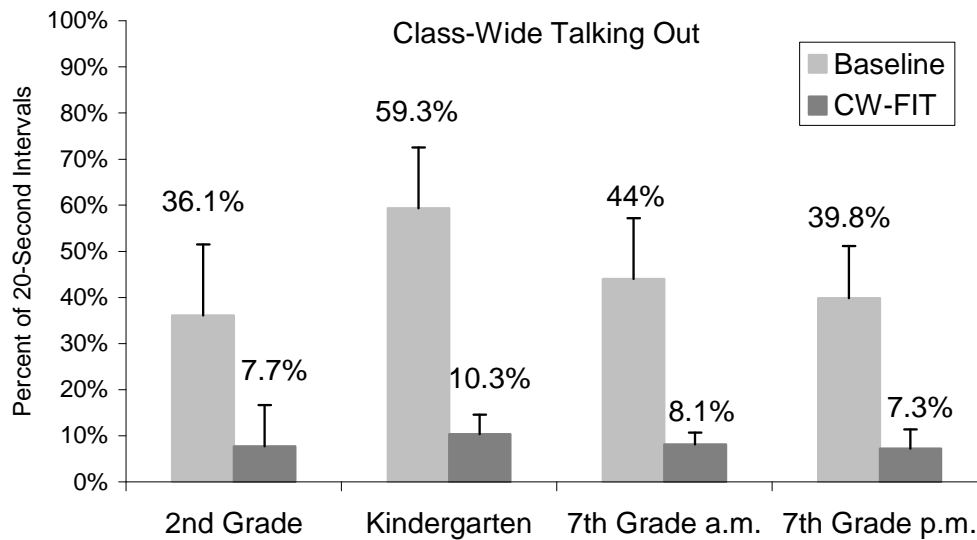
Figure 6. *Pooled means for baseline and CW-FIT*
class-wide talking out behavior across 4 classes.

Effects of CW-FIT on Individual Target Students Behaviors

During baseline and the CW-FIT intervention, data were gathered on 13 target students: (a) 3 students in the 2nd grade classroom, (b) 6 students in the kindergarten

classroom, (c) 2 students in the 7th grade a.m. classroom, and (d) 2 students in the 7th grade p.m. classroom (see Figure 7). The data gathered on the four behaviors included: (a) on-task, (b) hand raising, (c) out-of-seat, and (d) talking out.
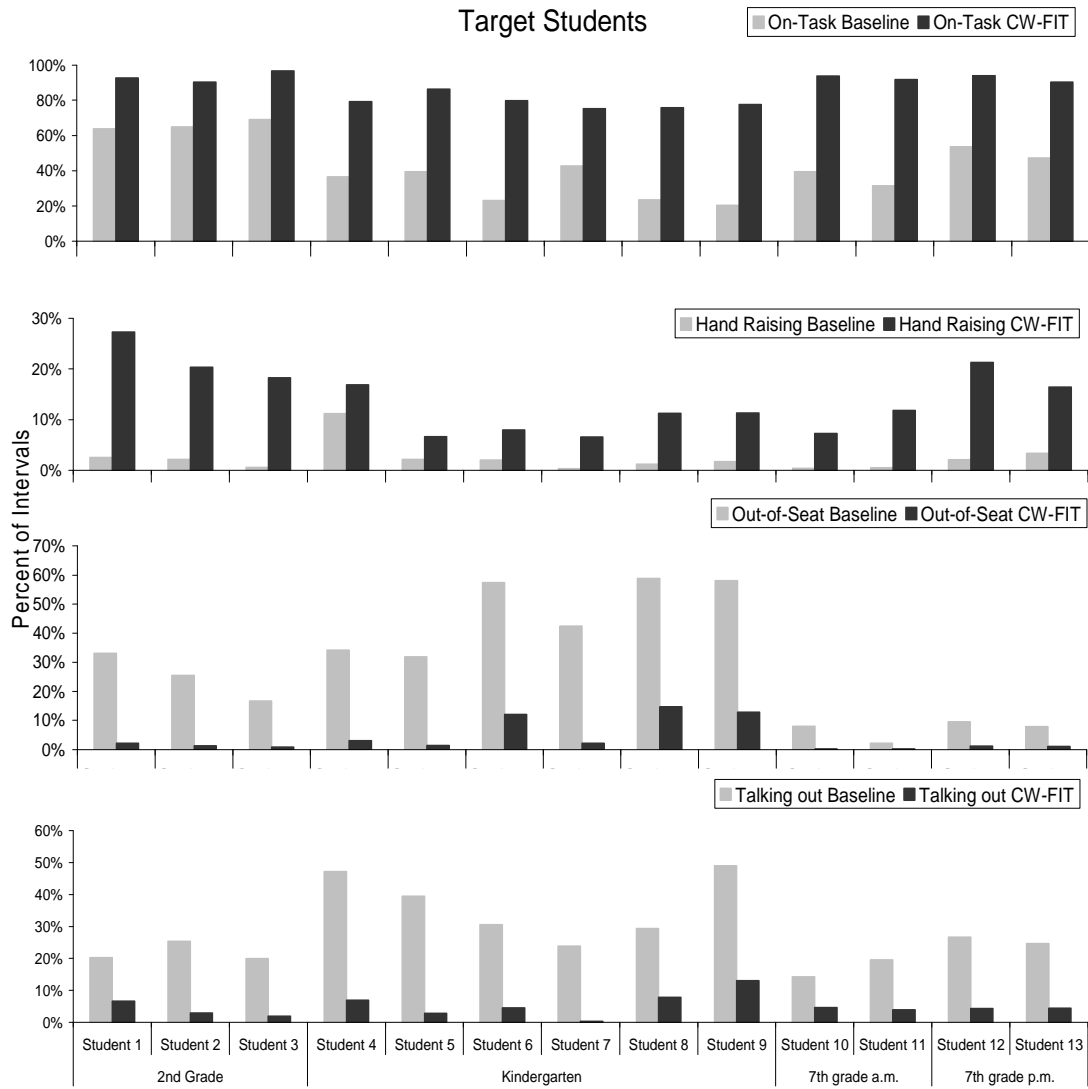
Figure 7. Pooled means for target students. Students *1-3 from 2nd grade, Students 4-9 from Kindergarten, Students 10-11 from 7th grade a.m. and Students 12-13 from 7th grade p.m.*

The objective was to increase two of the behaviors (on-task, hand raising) and decrease two of the behaviors (out-of-seat, talking out). As depicted in Figure 7, the mean baseline rate across the 13 students for on-task (tier 1) was 42.7% (range 20.3-69.1%) of intervals and the mean CW-FIT rate was 86.4% (range 75.2-96.7). The mean baseline rates for hand raising (tier 2) was 2.3% (range 0.3-11.2%) of intervals and the mean CW-FIT rates were 14.1% (range 6.6-27.3%). Mean baseline rates for out-of-seat behavior (tier 3) were 29.7% (range 2.17-58.8%) of intervals and the mean CW-FIT rates were 4.1% (range 0.2-14.7%). Finally, the mean baseline rates for talking out (tier 4) were 28.5% (range 14.2-49%) of intervals and the mean CW-FIT were 4.9% (range 0.3-13%).

Research Question Three

To what extent did the CW-FIT intervention have an effect on increasing students' completed assignments? Results indicate that during baseline, 71% of the 7th grade a.m. science class students' assignments were turned in to the classroom teacher. During CW-FIT, 73% of the students' assignments were turned in to the classroom teacher. Additionally, baseline completed assignments for the 7th grade p.m. science class were 74%. That is, 74% of the students' assignments were turned in to the classroom teacher. During CW-FIT, 76% of the students' assignments were turned in to the classroom teacher.

To what extent did the CW-FIT intervention have an effect on increasing students' semester grades? Results indicate that during the fall semester, that is, the semester before CW-FIT was implemented in the classroom, the baseline class mean

for the 7th grade a.m. science class was 89.7% for the entire class. Additionally, the

baseline class mean for the 7th grade p.m. science class was 88.4% for the entire class.

For the spring semester, that is, the semester in which CW-FIT was implemented, the

intervention mean for the 7th grade a.m. science class 90.7% for the entire class and

the intervention mean for the 7th grade p.m. science class 87.8% for the entire class.

Effect Sizes

Effect sizes were computed using the Standard Mean Difference (SMD_{ALL};

Olive & Smith. 2005). This effect size computation uses all baseline and all

intervention conditions and the computation is: (intervention mean – baseline mean) /

the standard deviation of baseline for each behavior. Table 1 contains 7 columns of

information: (a) the behavior (e.g., teacher praise), (b) the baseline mean, (c) the CW-

FIT intervention mean, (d) the standard deviation of baseline, (e) the standard

deviation of the CW-FIT intervention, (f) the effect (i.e., the difference between

baseline to intervention), and (g) the effect size. The effect sizes for all four classes

and all of the class-wide behaviors measured as part of the CW-FIT Intervention are

included. Effect sizes of greater than .70 are considered significant (Olive & Smith).

Effect sizes for (a) teacher praise were 23.13, 9.5, 34.7, and 17.5, across 2nd,

kindergarten, and 7th grade classes respectively. Effect sizes are also included for (b)

compliance, (c) hand raising, (d) on-task, (e) out-of-seat, and (f) talking out

behaviors. These are given separately because seven of the recent interdependent

group contingency studies have used similar effect sizes for several of these behaviors

and this gives the reader a basis of comparison among and between the different

studies (see Table 3). Additionally, the effect size averages for all behaviors

Table 3.
Effect sizes for all classes and all of the six behaviors measured during the CW-FIT intervention.

	Mean		Standard Deviation			
2nd Grade	Baseline	CW-FIT	Baseline	CW-FIT	Effect	*E.S.*
Teacher Praise	1.60	36.34	1.50	12.27	34.74	23.16
Class-Wide Compliance	43.67%	92.63%	14.44%	6.00%	48.96%	3.39
Class-Wide Hand Raising	4.75%	45.00%	3.52%	10.44%	40.25%	11.43
Class-Wide On-Task	51.67%	89.72%	17.16%	7.92%	38.06%	2.22
Class-Wide Out-of-Seat	43.00%	6.17%	23.16%	9.06%	-36.83%	-1.59
Class-Wide Talking Out	36.08%	7.71%	15.42%	8.95%	-28.38%	-1.84
Kindergarten						
Teacher Praise	3.10%	32.29%	3.07%	11.55%	29.19%	9.51
Class-Wide Compliance	24.17%	92.08%	11.87%	3.09%	67.92%	5.73
Class-Wide Hand Raising	8.17%	38.25%	2.40%	8.73%	30.08%	12.52
Class-Wide On-Task	28.20%	76.76%	22.24%	11.65%	48.56%	2.18
Class-Wide Out-of-Seat	58.50%	9.50%	13.87%	3.03%	-49.00%	-3.53
Class-Wide Talking Out	59.33%	10.33%	13.17%	4.25%	-49.00%	-3.72
7th Grade a.m.						
Teacher Praise	0.67	36.41	1.03	9.82	35.75	34.70
Class-Wide Compliance	37.00%	91.76%	17.83%	8.90%	54.76%	3.08
Class-Wide Hand Raising	3.83%	30.18%	3.87%	10.38%	26.34%	6.81
Class-Wide On-Task	40.33%	89.94%	10.65%	5.15%	49.61%	4.66
Class-Wide Out-of-Seat	22.00%	1.29%	8.00%	1.57%	-20.71%	-2.59
Class-Wide Talking Out	44.00%	8.12%	13.15%	2.57%	-35.88%	-2.73
7th Grade p.m.						
Teacher Praise	1.73	38.5	2.10	5.58	36.77	17.51
Class-Wide Compliance	35.82%	95.75%	17.66%	2.30%	59.93%	3.40
Class-Wide Hand Raising	8.82%	40.25%	3.06%	6.72%	31.43%	10.27
Class-Wide On-Task	39.73%	90.25%	13.05%	4.37%	50.52%	3.87
Class-Wide Out-of-Seat	28.45%	1.83%	6.90%	1.95%	-26.62%	-3.86
Class-Wide Talking Out	39.81%	7.25%	11.32%	4.16%	-31.93%	-2.82

across classes were 22.01 for teacher praise, 3.29 for compliance, 8.25 for hand raising, 2.37 for on-task, 1.65 for out-of-seat, and 2.27 for talking out.

Interobserver Reliability

An interobserver reliability graduate student was available for 26% of all baseline and CW-FIT intervention sessions. Reliability averaged 93% (range 89-100%) for on-task behavior, 98% (range 92-100%) for compliance, 92% (range 89 to 96%) hand raising, 94% (range 90-98%), for out-of seat, and 91% (85-96%) for talking out behavior.

Procedural Fidelity and General Classroom Management

Procedural Fidelity and general classroom management measures were taken on approximately 36% of all intervention sessions. Procedural Fidelity was at a mean level of 94% (range 45-100%) and classroom management at a mean level of 85% (range 50-100%).

Consumer Satisfaction

Consumer satisfaction surveys were distributed to all four teachers and all students that participated in the study. The teacher consumer satisfaction scores were 4.0 for the kindergarten teacher, 4.7 for the original 2nd grade teacher, 4.4 for the substitute 2nd grade teacher and 3.96 for the 7th grade science teacher. The overall mean for all four teachers was 4.3 out of a possible score of 5. Consumer satisfaction scores for the kindergarten student class averaged 2.8. Consumer satisfaction scores for the 2nd grade student class averaged 2.8. Consumer satisfaction scores for the 7th grade a.m. student class averaged 1.96. Consumer satisfaction scores for the 7th grade

p.m. student class averaged 2.4, which was a mean score of 2.5 out of 3 across all four classrooms.

Discussion

The purpose of this study was to perform a systematic replication of the previous study of CW-FIT (Conklin, Unpublished manuscript, 2009) and also to address novel components and new research questions. This replication adds to the generalizability of the effects of CW-FIT on a wider range of behaviors, students, teachers, classroom settings, and grade levels. Another novel addition was to measure the behaviors taught during the intervention and, additionally, address the question of collateral effects of problem behavior reduction on improved academic performance, i.e., completed assignments and semester grades. The study added to what is known about CW-FIT and also extended the literature reporting the effects of interdependent group-oriented contingencies as implemented in CW-FIT (e.g., Cashwell et al., 2001; Conklin et al., Unpublished manuscript, 2010; Kamps, 2009; Skinner et al., 2000).

The general findings of this study were that CW-FIT had a desirable effect on all of the dependent variables directly manipulated by the intervention package. Additionally, the findings suggest that, although there was variability between teachers' and students' behaviors, all of the dependent variables demonstrated increases in appropriate behaviors and decreases in disruptive behaviors at levels that produced a more positive teaching environment. Finally, with these increases in appropriate classroom behavior and decreases in disruptive behavior, more time was available for teaching and learning. These findings are similar to the findings of

previous CW-FIT research specifically, and interdependent group contingency research in general (e.g., Conklin et al., Unpublished manuscript, 2010; Crouch, Gresham, & Wright, 1985; Kamps, 2009; Kamps et al., 2010; Lannie & McCurdy, 2007), suggesting that when there are two or more disruptive students in a classroom a class-wide intervention is an appropriate means of recapturing the classroom environment and obtaining a quiet and peaceful teaching climate.

Teacher Behavior

Within the protocol of CW-FIT, three teacher behaviors are specific to successful intervention outcomes: (a) teachers' specific praise statements (i.e., social reinforcement) to groups and individual students that relate directly to the skills taught within the CW-FIT intervention, (b) teacher reprimands (specific or general), and (c) fidelity of implementation.

Teachers' specific praise statements. Teacher specific praise statements during baseline were most often at levels equal with teacher reprimands (see Figure 1). However, during the CW-FIT intervention, teacher praise levels often exceeded the ratio 4 to 1 as recommended by previous researchers (e.g., Nafpaktitis, Mayer, & Butterworth, 1985; Rhode et al., 1992; Walker, Colvin, & Ramsey, 1985; Walker, Ramsey, & Gresham, 2004); and were equal to those found in previous CW-FIT studies (e.g., Conklin et al., Unpublished manuscript, 2010; Kamps, 2009; Kamps et al., 2010). Previous researchers have demonstrated that teacher praise (i.e., social reinforcement and teacher attention to positive classroom behaviors) has been found

to be related to positive changes in student behaviors (e.g., Nafpaktitis et al., 1985; Rhode et al., 1992; Walker et al., Ramsey, & Gresham, 2004).

Teacher reprimands. Teacher reprimands did not show meaningful changes between baseline and during the CW-FIT intervention across classes. Second grade baseline reprimands were at a mean level of 3.27 and intervention 2.59, Kindergarten were at 4.8 and intervention were 5.1, 7th grade a.m. were at 2.67 and went up to 3.12, and finally, 7th grade p.m. were at 1.73 and went up to 3.17. However considering the large increases in praise statements during intervention, there was little change in reprimand statements (see Figure 1).

Teacher fidelity of implementation. Another teacher behavior related to the desired changes in student behavior is fidelity of implementation. That is, if fidelity of implementation drops below a level of 80%, it is highly probable that commensurate deterioration will be observed in student behavior. This was observed at data points 10 and 11 in the kindergarten class behavior when teacher praise statements declined and reprimands increased creating a less than the 4 to 1 ratio of praises to reprimands (see Figures 1 and 2). However, the fidelity checklist data for data point 11 also suggested that game points were not being recorded consistently, points were not tallied for the groups at the end of the game, and reinforcers were not immediately dispensed. A short meeting (10 min) to share the data and discuss the importance of specific praise related to the CW-FIT skills and treatment fidelity was sufficient to motivate the teacher to increase specific praise and intervention fidelity.

Class-wide Student Behaviors

This study demonstrated that while students' class-wide compliance and hand raising behaviors increased (see Figures 3 and 4), talking out and out-of-seat behaviors decreased and on-task behavior increased. These data suggest that as an intervention package, CW-FIT demonstrated substantial results in creating a peaceful and quiet classroom environment more conducive to teaching. These findings of decreases in out-of-seat and talking out and increases in on-task behavior are similar to previous CW-FIT and interdependent group contingency (e.g., Kamps et al., 2010; Lannie & McCurdy, 2007).

On-task behavior. On-task behavior increased for all four of the classes in this study (see Figure 2). The magnitude of increase across the four classes varied from 174% to 272%. A 174% increase was obtained in the 2nd grade on-task behavior, a 272% increase was obtained in the kindergarten, a 223% increase was obtained in the 7th grade a.m. classroom, and a 227% increase was obtained in the 7th grade p.m. classroom. Similar findings have been obtained by researchers using CW-FIT as well as interdependent group-oriented contingencies in general (Conklin et al., in revision; Crouch et al., 1985; Kamps et al., 2009; Kamps, 2010; Lannie & McCurdy, 2007; Phillips & Christie, 1986).

Compliance behavior. Compliance behavior, which was related to the skill, "Follow directions the first time," varied in magnitude across all four classes (see Figure 3). Increases in compliance for all four classes were well over 200%. A 212% increase was obtained in the 2nd grade compliance behavior, a 381% increase was

obtained in the kindergarten, a 248% increase was obtained in the 7th grade a.m.

classroom, and a 267% increase was obtained in the 7th grade p.m. classroom. These

findings are consistent with those demonstrated by Swiezy et al. (1992).

Hand raising behavior. Hand raising behavior, which was related to the skill,

"How to get the teacher's attention," also varied in magnitude across classes (see

Figure 4). Additionally, hand raising increased at a greater magnitude than any of the

other behaviors. A 947% increase was obtained in the 2nd grade hand raising

behavior, a 468% increase was obtained in the kindergarten, a 787% increase was

obtained in the 7th grade a.m. classroom, and a 456% increase was obtained in the 7th

grade p.m. classroom. No complaints from teachers of inappropriate or excessive

hand raising were reported and none were observed.

Out-of-seat behavior. Out-of-seat behavior, which was related to the skill,

"Staying in our seats," was diminished at substantial rates (see Figure 5). That is, out-

of-seat behavior was decreased across all four classes between 84% and 94%. Out-of-

seat behavior was decreased in the 2nd grade classroom by 86% from baseline rates,

the kindergarten by 84%, the 7th a.m. classroom by 94%, and the 7th p.m. classroom

by 94%, thus demonstrating substantial decreases in out-of-seat behavior. Many

studies with interdependent group contingencies have been reported to diminish

disruptive behavior, and often out-of-seat behavior is one of the behaviors in the pool

designated as disruptive (e.g., Coogan, Kehle, Bray, & Chafouleas, 2007; Lannie &

McCurdie, 2007).

Talking out behavior. Talking out behavior, which was related to the skill, "Talk in a quiet voice," was also decreased at substantial rates (see Figure 6). That is, talking out behavior was decreased across all four classes between 79% and 83%. Talking out behavior was decreased in the 2nd grade classroom by 79% from baseline rates, the kindergarten by 83%, the 7th a.m. classroom by 82%, and the 7th p.m. classroom by 80%, thus demonstrating substantial decreases in talking out behavior. These findings, decreases in talking inappropriately, have also been demonstrated by previous researchers using interdependent group contingencies (e.g., Davies & Witte, 2000; Lohrmann & Talerico, 2004; Theodore, Bray, Kehle, & Jenson, 2001).

Individual Target Student Behaviors

Individual target student data were gathered on 13 target students across the four classrooms on four behaviors: (a) on-task, (b) hand raising, (c) out-of-seat, and (d) talking out (see Figure 7). There was the same number of data points for the individual students as there were for the class-wide data.

Both behaviors intended to increase did so during intervention. Individual on-task behavior across the 13 target students during the CW-FIT intervention increased to a mean level of 86.42%. The 4 students with on-task behavior below the 80% level during the intervention phases were from the kindergarten classroom. However, none were below a mean intervention level of 75%. Across the 13 target students, CW-FIT produced a 102.5% mean increase in on-task behavior across the13 target students. These findings are consistent with previous CW-FIT studies (Kamps, 2009; Kamps 2010). Hand raising behavior increased for all 13 target students during the CW-FIT

producing a 508% mean increase in hand raising behavior. Both behaviors intended to decrease did so for the target students during intervention. Individual out-of-seat behavior across the 13 target students during the CW-FIT intervention decreased to a mean level of 4.1% producing an 86.3% mean decrease. This change made a substantial contribution to the management of the classroom environment. Individual talking out behavior across the 13 target students during the CW-FIT intervention decreased to a mean level of 4.9%, an 82.78% mean decrease, again making an additional contribution to the management of the classroom environment. These findings in decreasing disruptive behaviors are similar to past research reports using interdependent group-oriented contingencies (e.g., Davies & Witte, 2000; Lohrmann & Talerico, 2004; Theodore et al., 2001).

Academic Performance Effects

There were no meaningful changes in the collateral effects on student completed assignments or semester grades. A probable reason for this limited effect is that behaviors that are not reinforced as a component of an intervention (assignment completion) are not likely to be affected by such an intervention (e.g., Conklin & Mayer, 2010; Harris & Sherman, 1974; Lannie & McCurdy, 2007). However, even when there is an effect, it cannot be stated that there was a functional relationship. Student grades were high during baseline conditions, thus limiting the range for improvement during intervention.

Consumer Satisfaction

Consumer satisfaction surveys indicated that teacher satisfaction scores overall mean was 4.27 out of a possible score of 5 indicating a moderate to high degree of satisfaction. A feedback section at the end of the teacher survey contained several comments: "I really liked the support of the program." "Using the timer was annoying." "It was motivating for the students." "It's a great program." "A great intervention." More importantly, with regard to teacher satisfaction, the second grade teacher implemented CW-FIT in her classroom the following year. The mean consumer satisfaction scores across all four classrooms were 2.47 out of 3, indicating a moderate to high degree of satisfaction.

Limitations

Although this study produced important results in several areas, the following limitations should be considered. The study included a small number of classrooms and teachers (n = 4). While an experimental design was used and important findings produced, this study represents only one of several studies reporting the results of CW-FIT, and the external validity of the intervention remains weak (Horner et al., 2005). Specifically, this is merely the fourth study done at Juniper Gardens Children's Project. It has been suggested that for an intervention to demonstrate generalizability and achieve external validity, multiple replications across researchers, participants, and geographic locations must be performed (see Horner et al., 2005). Another limitation is that there were no control classes or students. Finally, this was a

convenience sample of teachers from an urban parochial school and all of the teachers in this sample had requested classroom management assistance.

Recommendations for Future Research

Future research on the CW-FIT intervention should include: (a) other researchers implementing the intervention in multiple schools, across multiple grade levels, and across multiple geographic locations, (b) control schools, control classes, and students, (c) use of a randomized control group design, and (d) include academic achievement measures as dependent variables (e.g., math, spelling, writing scores).

Implications for Research and Practice

The implications for research and practice are first that teacher and student behaviors, individually as well as class-wide, are amenable to change using the CW-FIT intervention. Additionally, it has been demonstrated that students from kindergarten through the eighth grade can and do learn appropriate classroom behaviors. With the learning of appropriate classroom behaviors, on-task and compliance behavior increases and disruptive behavior substantially decreases, which assists in creating a classroom environment conducive to teaching and learning. Findings suggest continued use of group contingency interventions in urban classroom settings, and particularly in classes with multiple students engaging in disruptive, off-task behaviors. Group contingencies such as the CW-FIT program reliably produce improved classroom behaviors.

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Appendix A

Comparative Details of the 25 Studies Reviewed

Author and Year of Publication	Participants (Age or Grade)	Behavior(s) Addressed	Setting	Additional Components	Experimental Design	Type of Measurement
Lewis, Sugai & Colvin (1998)	Grades one through five	Disruptive: (e.g., running, yelling, arguing)	Cafeteria, playground, transitions	Social skills training through direct instruction	Multiple baseline design	Rate of student problem behavior
Babyak, Luze, Kamps (2000)	Three classrooms	Prosocial behavior	Classrooms	Self-monitoring	AB and ABAB reversal design	Momentary time sampling
Kartub, Taylor-Greene, March, & Horner (2000)	Grades six through eight	Noise (i.e., disruptive behavior)	Hallway	Dimming the lights. A small blinking light	Pre-post non-experimental design	Decibel meter readings

Author and Year of Publication	Participants (Age or Grade)	Behavior(s) Addressed	Setting	Additional Components	Experimental Design	Type of Measurement
Kelshaw-Levering, Sterling-Turner, Henry, & Skinner (2000)	Grade two	Off-task, out-of-seat, inappropriate verbalizations, noncompliance	Classroom	Randomized intervention components	ABACBC	10s partial interval time sampling
Skinner, Cashwell, & Skinner (2000)	Grade four	Reports of peer prosocial behavior	Classroom	Peer-monitored, public posted feedback	ABAB reversal design	Permanent product (frequency)
Cashwell, Skinner, & Smith (2001)	Grade four	Reports of peer prosocial behavior	Classroom	Peer-monitored, public posted feedback	ABAB reversal design	Permanent product (frequency)

Author and Year of Publication	Participants (Age or Grade)	Behavior(s) Addressed	Setting	Additional Components	Experimental Design	Measurement
Theodore, Bray, Kehle, & Jensen (2001)	Information not provided	Disruptive behavior	Special education classroom	Randomized intervention components	ABAB reversal design	15s partial interval time sampling
Lewis, Powers, Kelk, & Newcomer (2002)	Kindergarten through sixth grade	Playground related behaviors	Playground	Teaching rules, routines, desired behaviors	Multiple baseline design	Frequency count (paper and pencil)
Upton & Skinner,(2002)	Grade one	Disruptive behavior	Grade one	Randomly drawn reinforcer	ABAB reversal design	Percent of intervals
Popkin, & Skinner (2003)	Grades six through eight	Academic performance	Special education class	Randomization of components	Multiple baseline design	Permanent product, quizzes

Author and Year of Publication	Participants (Age or Grade)	Behavior(s) Addressed	Setting	Additional Components	Experimental Design	Measurement
Campbell, & Skinner, (2004)	Grade six	Disruptive behavior during transitions	Transitions between classes	Explicit timing, Randomly selected criteria	Empirical case study	Total seconds for specific transitions
Lohrmann, & Talerico (2004)	Grades four and five	Out-of-seat, talking out	Multi learning support class	Public posting	Multiple baseline design	Frequency of occurrences
Sharp, & Skinner (2004)	Grade two	Reading performance	Second grade classroom	Randomly selected criteria	Empirical case study	Comprehensive quiz scores
Theodore, Bray, & Kehle (2004)	17 years-of-age	Disruptive behavior	Special education class	Randomized reinforcers	Alternating treatment	15 s partial interval
Yarbrough, Skinner, Lee, & Lemmons (2004)	Grade six	Disruptions entering classroom	Classroom	Explicit timing, Randomly selected criteria	ABABAB reversal design	Total seconds measured with a stopwatch

Author and Year of Publication	Participants (Age or Grade)	Behavior(s) Addressed	Setting	Additional Components	Experimental Design	Measurement
Christ & Christ (2006)	Grade nine and ten	Disruptive behavior	Classroom	Automated feedback device	ABAB reversal design	Partial interval, momentary time
Alric, Bray, Kehle, Chafouleas, & Theodore (2007)	Grade four	Academic behavior: Reading fluency	Classroom	Randomized reinforcers	Alternating treatment design	Curriculum-based measurement
Coogan, Kehle, Bray, & Chafouleas, 2007	Grade six	Disruptive behavior	Classroom	Randomized intervention components	ABAB reversal design	15s partial interval time sampling
Lannie & McCurdy (2007)	Grade one	Disruptive behavior	Classroom	Publicly posted feedback	ABAB reversal design	Partial interval and momentary

Author and Year of Publication	Participants (Age or Grade)	Behavior(s) Addressed	Setting	Additional Components	Experimental Design	Measurement
Murphy, Theodore, Aloiso, Alric-Edwards, & Hughes (2007)	Preschool	Disruptive behavior	Head Start classroom	Mystery Motivators	ABAB reversal design	15 s partial interval time sampling
Fabiano, Pelham, Karmazin, Kreher, Panahon, & Carlson (2008)	Kindergarten through grade five	Disruptive cafeteria behavior	Cafeteria	Rule definition	ABCD	Frequency count (paper and pencil)
Franzen & Kamps (2008)	Grades two, three, and four	Playground behaviors	Playground	Training and reteaching zones	Multiple baseline design	Frequency

Author and Year of Publication	Participants (Age or Grade)	Behavior(s) Addressed	Setting	Additional Components	Experimental Design	Measurement
McCurdy, Skinner, Watson, & Shriver (2008)	Grade nine	Writing performance	Three ninth grade resource classrooms	Comprehensive writing program, student feedback	Multiple baseline design	Percent of correct responses
McCurdy, Lannie, & Barnabas (2009)	Kindergarten through sixth grade	Disruptive behavior	Cafeteria	Rule definition -- student and staff training	Multiple baseline design	Frequency count (paper and pencil)
Reinhardt, Theodore, Bray & Kehle (2009)	Grade four	Homework performance	Classroom	Randomized intervention components	Multiple baseline design	Permanent product -- homework

Appendix B

Sample Data Sheets

Date: _____ Subject: _____ Teacher: _____ School: _____

Target Student: _____ Observer: _____ Rel. Obs. _____

On-Task	30 60	90 120	150 180	210 240	270 300	330 360	390 420	450 480	510 540	570 600	630 660	690 720	750 780	810 840	870 900
CA code→	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1															
2															
3															
4															
5															

Classroom Activity (CA) Codes
T: transition
NI: no instruction given
GA: group activity
IA: individual activity
Behavioral Activity Codes
TO: child from specified group in time-out
LG: left group
LR: child left room
RG: return to group

Classroom Arrangement

mark each occurrence with a hash mark

Praise   *Reprimand*

PreCorrects

Date: _____ Subject: _____ Observer: _____ Teacher: _____ School: _____

Target Student: _____ Rel. Obs. _____

Opportunities to Comply

Compliance

CA code→

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

Classroom Activity (CA) Codes
T: transition
NI: no instruction given
GA: group activity
IA: individual activity
    Behavioral Activity Codes
TO: child from specified group in time-out
LG: left group
LR: child left room
RG: return to group

Classroom Arrangement
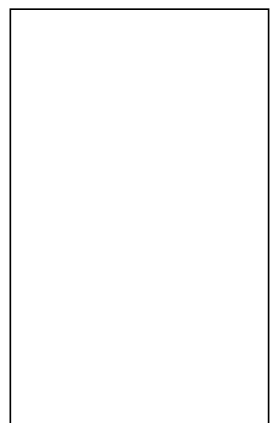
mark each occurrence with a hash mark

Praise   *Reprimand*

PreCorrects

Date: _____ Subject: _____ Observer: _____ Teacher: _____ School: _____

Target Student: _____ Rel. Obs. _____

10-Minutes of 20-Second Intervals

Hand Raising	Min	1			2			3			4			5			6			7			8			9			10
20-sec	40	60	20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	20	40	60
CA code→																													
1																													
2																													
3																													
4																													
5																													
6																													
7																													
8																													

Classroom Activity (CA) Codes
T: transition
NI: no instruction given
GA: group activity
IA: individual activity

Behavioral Activity Codes
TO: child from specified group in time-out
LG: left group
LR: child left room
RG: return to group

Classroom Arrangement

mark each occurrence with a hash mark

Praise | Reprimand

PreCorrects

Please enumerate your arrangement and mark target children. If a non-target child represents the majority of off-task marks, please note position on the Classroom Arrangement chart.
Please use the back of this form for additional information/comments

Date: _____ Subject: _____ Observer: _____ School: _____

Target Student: _____ Teacher: _____ Rel. Obs. _____

10-Minutes of 20-Second Intervals

Out-of-Seat	20-sec																													
CA code→	Min	20	40	60	1	20	40	60	2	20	40	60	3	20	40	60	4	20	40	60	5	20	40	60	6	20	40	60	7	40	8	20	40	60	9	20	40	60	10

(Columns header reads: Min 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 with 20/40/60 subintervals)

Rows: 1, 2, 3, 4, 5, 6, 7, 8

Classroom Arrangement

Classroom Activity (CA) Codes
T: transition
NI: no instruction given
GA: group activity
IA: individual activity

Behavioral Activity Codes
TO: child from specified group in time-out
LG: left group
LR: child left room
RG: return to group

mark each occurrence with a hash mark

Praise   *Reprimand*

PreCorrects

Please enumerate your arrangement and mark target children. If a non-target child represents the majority of off-task marks, please note position on the Classroom Arrangement chart.
Please use the back of this form for additional information/comments

Date: _____ Subject: _____ Observer: _____ Teacher: _____ School: _____

Target Student: _____ Rel. Obs. _____

10-Minutes of 20-Second Intervals

CA code→	Min 1 (20/40/60)	2	3	4	5	6	7	8	9	10 (20/40/60)
Talking Out 20-sec										
1										
2										
3										
4										
5										
6										
7										
8										

Classroom Activity (CA) Codes
T: transition
NI: no instruction given
GA: group activity
IA: individual activity

Behavioral Activity Codes
TO: child from specified group in time-out
LG: left group
LR: child left room
RG: return to group

Classroom Arrangement

mark each occurrence with a hash mark

Praise   *Reprimand*

PreCorrects

Please enumerate your arrangement and mark target children. If a non-target child represents the majority of off-task marks, please note position on the Classroom Arrangement chart.
Please use the back of this form for additional information/comments

Appendix C

Teacher Social Validity (consumer Satisfaction) Questionnaire

CW-FIT Consumer Satisfaction

School: _____ Teacher: _____

	No Familiarity			High Familiarity	
How familiar were you with the components of this intervention before using it in you classroom?	1	2	3	4	5
How familiar are you now with the components of this intervention?	1	2	3	4	5

	Unacceptable			Acceptable	
How satisfied are you with the training you received?	1	2	3	4	5
How satisfied are you with support you received from Juniper Gardens staff?	1	2	3	4	5

	Very Hard			Very Easy	
To what extent was this intervention easy to implement?	1	2	3	4	5
To what extent were the procedures for running CW-FIT easy to learn?	1	2	3	4	5

	A Lot of Time			Very Little Time

Amount of time required to use CW-FIT:

	A Lot of Time				Very Little Time
A.) Amount of preparation time:	1	2	3	4	5
B.) Amount of time during instruction:	1	2	3	4	5
C.) Amount of time delivering rewards:	1	2	3	4	5

	Not very effective				Very Effective
How effective do you feel the intervention was?	1	2	3	4	5

	Very Little				Very Frequently
To what extent did the students gain teacher attention appropriately during the game?	1	2	3	4	5
To what extent did the students ignore inappropriate behavior during the game?	1	2	3	4	5

	Very Little				Very Frequently
To what extent did the students follow directions during the game?	1	2	3	4	5

	Strongly Disliked			Liked Very Much	
To what extent did you like the intervention?	1	2	3	4	5

	Very Unlikely			Very Likely	
How likely are you use this intervention with future classes?	1	2	3	4	5
How likely are you to recommend This intervention to a colleague?	1	2	3	4	5

Feedback:

Please list what you liked about CW-FIT:

_____

_____

_____

Please list what you did not like about CW-FIT:

_____

_____

_____

Suggestions on how to improve CW-FIT or other comments:

_____

_____

_____

_____

Appendix D

Student Social Validity Questionnaire for Kindergarten and Second Grade Students

CW-FIT Student Satisfaction

Name _____ Teacher_____ Date _____

1. **I liked playing the game in my classroom.**

    ☺   😐   ☹

  Yes/ A lot   **Okay/Alright**   **No/ Not at all**

2. **It was easy to learn the rules in the game.**

    ☺   😐   ☹

  Yes/ A lot   **Okay/Alright**   **No/ Not at all**

3. **It was easy to play the game.**

    ☺   😐   ☹

  Yes/ A lot   **Okay/Alright**   **No/ Not at all**

4. **I liked earning points on a team.**

    ☺   😐   ☹

  Yes/ A lot   **Okay/Alright**   **No/ Not at all**

5. **I liked earning prizes.**

    ☺   😐   ☹

  Yes/ A lot   **Okay/Alright**   **No/ Not at all**

6. **I learned the right way to get the teacher's attention**

    ☺   😐   ☹

  Yes/ A lot   **Okay/Alright**   **No/ Not at all**

7. **I learned what to do when a classmate is acting inappropriately.**

    ☺   😐   ☹

  Yes/ A lot   **Okay/Alright**   **No/ Not at all**

8. **I learned how to follow directions.**

☺ ☐ ☹

Yes/ A lot   **Okay/Alright**   **No/ Not at all**

9. **I learned to stay in my seat.**

☺ ☐ ☹

Yes/ A lot   **Okay/Alright**   **No/ Not at all**

10. **I learned how to talk in a quiet voice**

☺ ☐ ☹

Yes/ A lot   **Okay/Alright**   **No/ Not at all**

11. **I followed directions more during the game.**

☺ ☐ ☹

Yes/ A lot   **Okay/Alright**   **No/ Not at all**

12. **I raised my hand more during the game.**

☺ ☐ ☹

Yes/ A lot   **Okay/Alright**   **No/ Not at all**

13. **I talked quietly more during the game.**

☺ ☐ ☹

Yes/ A lot   **Okay/Alright**   **No/ Not at all**

14. **I ignored my classmates when they were acting inappropriately more during the game.**

☺ ☐ ☹

Yes/ A lot   **Okay/Alright**   **No/ Not at all**

15. **I stayed in my seat more during the game.**

☺ ☐ ☹

Yes/ A lot   **Okay/Alright**   **No/ Not at all**

Appendix E

Student Social Validity Questionnaire for the Seventh Grade Students

CW-FIT Student Satisfaction

Name _____ **Teacher**_____ **Date** _____

1. **I liked playing the game in my classroom.**

> **Yes/ A lot**   **Okay/Alright**   **No/ Not at all**

2. **It was easy to learn the rules in the game.**

> **Yes/ A lot**   **Okay/Alright**   **No/ Not at all**

3. **It was easy to play the game.**

> **Yes/ A lot**   **Okay/Alright**   **No/ Not at all**

4. **I liked earning points on a team.**

> **Yes/ A lot**   **Okay/Alright**   **No/ Not at all**

5. **I liked earning prizes.**

> **Yes/ A lot**   **Okay/Alright**   **No/ Not at all**

6. **I learned the right way to get the teacher's attention.**

> **Yes/ A lot**   **Okay/Alright**   **No/ Not at all**

7. **I learned what to do when a classmate is acting inappropriately.**

> **Yes/ A lot**   **Okay/Alright**   **No/ Not at all**

8. **I learned how to follow directions.**

> **Yes/ A lot**   **Okay/Alright**   **No/ Not at all**

9. **I learned to stay in my seat.**

        Yes/ A lot   **Okay/Alright**   **No/ Not at all**

10. **I learned how to talk in a quiet voice.**

        Yes/ A lot   **Okay/Alright**   **No/ Not at all**

11. **I followed directions more during the game.**

        Yes/ A lot   **Okay/Alright**   **No/ Not at all**

12. **I raised my hand more during the game.**

        Yes/ A lot   **Okay/Alright**   **No/ Not at all**

13. **I talked quietly more during the game.**

        Yes/ A lot   **Okay/Alright**   **No/ Not at all**

14. **I ignored my classmates when they were acting inappropriately more during the game.**

        Yes/ A lot   **Okay/Alright**   **No/ Not at all**

15. **I stayed in my seat more during the game.**

        Yes/ A lot   **Okay/Alright**   **No/ Not at all**

Appendix F

Teacher Training Material and Scripts

Class-wide Function-based Intervention Teams Description: Teaching Component

The first critical component of the intervention involves teaching functional replacement behaviors for the inappropriate behaviors that currently function to (a) obtain attention (adult or peer); (b) escape from tasks; and (c) gain access to materials, privileges, and activities. In all cases, students will be taught the following in small groups with classroom applications:

1. Raise hand or make eye contact (or use "help" card)   3. Make statement or request
2. Wait for acknowledgement   4. Confirm/acknowledge

This framework is appropriate to cover the range of behavioral functions. Students can be taught to gain attention appropriately, recruit reinforcement, request breaks or assistance when tasks are too difficult ("help" cards), and gain access to tangibles/privileges. Over the course of several sessions, the number of cards is systematically decreased so that the student learns to discriminate when he really needs assistance. Teachers are instructed to respond immediately when beginning a "help" card intervention, so that the student learns quickly that the cards gain access to attention or escape from task much more quickly than the inappropriate behavior. Students are taught in small group sessions and must show mastery of skills by exhibiting the appropriate requests to criteria across 3 classroom activities.

Extinction

The second component of the intervention is extinction (e.g., ignoring), a process by which the reinforcing variable that follows behavior is withdrawn. In essence, extinction involves minimizing social responses (e.g., attention) to inappropriate behavior. Adults in all settings, as well as peers, will be given direct instruction and practice opportunities to apply extinction to specific inappropriate behaviors that are targeted for elimination. By teaching and reinforcing appropriate replacement behaviors (teaching component) while systematically eliminating reinforcers for the inappropriate behavior, the new repertoire of socially desirable behaviors will result in the outcomes that inappropriate behaviors previously elicited.

Differential Reinforcement of Alternative Behaviors (DRA)/Contingencies

This component will consist of both group and individual contingencies, to be carried out as a class "game", where students earn points for their teams by engaging in any of the desired behaviors (e.g., on-task, using quiet voices, ignoring misbehavior, remaining in seats during work time, using appropriate behaviors to gain teacher attention). The class will be taught which behaviors will earn points through examples, modeling, and role playing. A chart at the front of the classroom will display a list of the behaviors and each team's points. In addition to the class teams, smaller sub-teams and individual students (targets/peers) will also be awarded points for engaging in the specified behaviors. At specified times, points will be exchanged for agreed upon privileges and tangible items that are typically available.

The contingency game described above makes use of DRI or DRA by choosing and reinforcing specific desirable behaviors that are incompatible or alternatives to the inappropriate behaviors. To put the contingency game into practice, teachers will choose two blocks during their day when the inappropriate behaviors are most likely to occur (e.g., reading instruction, language arts, and free activity time). During those times, the contingency game will go into effect. At specified times during instruction (determined by timers), the teacher will briefly stop and award points for desirable behaviors.
The schedule for "point checks" is:

	Grades 1-2	Grades 3-5
Week 1	5 min	10 min
Week 2	10 min	15 min
Week 3	15 min	20 min
Maintenance	To be determined	To be determined

Once the students have been taught the game, the schedule will be initially very rich in reinforcing opportunities. The schedule of opportunities for reinforcement will be gradually thinned until a schedule that is capable of maintaining the desired behavior without being too intrusive to instruction is reached.

Teaching Lessons

We are going to review the skill: *"How to Get the Teacher's Attention"*
(refer to poster)

Definition

The steps are (teacher reads aloud):

1. Look at the teacher
2. Raise your hand
3. Wait for the teacher to call on you
4. Ask your question or give answer

Now everyone read with me (students read chorally).

Rationale

Why is it important to use these steps for getting the teacher's attention? (so we can all hear the person, the classroom is quieter so people can work, so people are not talking at once, so students aren't shouting out).

Role Play

Let's practice getting the teacher's attention.
Use volunteers (2-3 students). After each example, ask students if the volunteers got the teacher's attention the right (or wrong) way & to state the steps they saw (or didn't see).
Example: Pretend to be explaining a math problem on board. Have students raise hands. Call on one to ask/answer question.
Non-example: Pretend to be reading a story. Have volunteer shout out a question about the passage (what happened, who said it?).
Example: Pretend to be asking questions from the story. Have volunteers raise hands to answer.
Example: Have students writing in their journals. Have a volunteer raise hand and ask to get an eraser or dictionary.

Review

You did great with the role plays for practice.
     Again, let's read together the steps in how to get the teacher's attention
          (choral read). Let's work hard to practice this behavior today.

We are going to review the skill: **Follow Directions the 1st Time** (refer to poster)

Definition

The steps for following directions are (teacher reads aloud):

1. Look at the person (teacher)
2. Say OK
3. Do it
4. Check back if (if needed)

Now everyone read with me (students read chorally).

Rationale

Why is it important to follow these steps for following directions? (we look at the teacher so she/he knows we are listening; say OK to show we understand; do it so everyone gets their work done, to help keep our class quiet…..)

Role Play
Let's practice following directions the 1st time.
Use volunteers (2-3 students). After each example, ask students if the volunteers followed directions the 1st time the right way & to state the steps they saw (or the wrong way and to state the steps they didn't see).
Example: Pretend to be explaining a math problem on board. Tell students to copy the problem. Have students say OK quietly and write the problem.
Non-example: Pretend to be reading a story. Ask students to write 3 sentences about the main idea of the story. Have volunteers talk to each other, draw a picture, play with things in desk.
Non-Example: Tell students to copy 5 vocabulary words from the story (write on board). Tell students, when they are done, to go to shelf and get a book to read. Have volunteers finish words and then talk, have several go to shelf and chit-chat.
Example: Tell students to write 2 sentences about the brain and what it does for our body in their journals. Have volunteer students write quickly and quietly.

Review
You did great with the role plays for practice.
Again, let's read together the steps to "follow directions the 1st time" (choral read). Let's work hard to practice this behavior today.

We are going to review the skill: ***Ignoring inappropriate behavior*** (refer to poster)

Definition
The steps for ignoring inappropriate behavior are (teacher reads aloud):
1. Keep a pleasant face
2. Look away from the person
3. Keep a quiet mouth
4. Pretend you are not listening
5. Follow directions-do your work

Now everyone read with me (students read chorally)

Rationale
Why is it important to follow these steps for ignoring inappropriate behavior? (we need to show good behavior, we don't want to give people attention for bad behaviors; we want our class to learn more things; we need to show responsibility; it is good to encourage each other to do the right thing; if we shout back or give attention to someone they will keep doing the wrong thing)

Role Play
Let's practice following ignoring inappropriate behaviors.
Use volunteers (2-3 students). After each example, ask students if the volunteers ignored inappropriate behavior the right way & to state the steps they saw (or the wrong way and to state the steps they didn't see).
Example: Pretend to be explaining a math problem on board. Have one student start talking to another. Have the second student "look away" and then start working.
Non-example: Pretend to be reading a story. Ask students to write 3 sentences about the main idea of the story. Have one student call a peer and pass a note to them. Have the second peer look away and NOT take the note, then start writing story sentences.
Non-Example: Tell students to copy 5 vocabulary words from the story (write on board). Tell students when they are done, go to shelf and get a book to read. Have volunteers go to shelf, have one start saying making faces at a peer, have the second student say "you're not funny!" in a loud voice and have the 1st peer laugh loudly.
Example: Tell students to write 2 sentences about the brain and what it does for our body in their journals. Have volunteer start waving a paper at a student. Have the second student look away, put hand above eyes to block, then start writing quietly.

Review
You did great with the role plays for practice.
Again, let's read together the steps to "ignore inappropriate behavior" (choral read). Let's work hard to practice this behavior today.

We are going to review the skill: *"Staying in Our Seat"* (refer to poster)

Definition

The steps are (teacher reads aloud):

1. Sit and stay seated in our chair
2. Keep your feet underneath your desk and your chair legs on the floor
3. Sit straight and quietly

Now everyone read with me (students read chorally).

Rationale

Why is it important to use these steps for staying in our seat? (So we have a safe classroom. Students are not having accidents by falling out of their chairs).

Role Play

Let's practice staying in our seats.
Use volunteers (2-3 students). After each example, ask students if the volunteers were seated in the appropriate manner or not).
Example: Pretend to be explaining a math problem on board. Have volunteer students sit in appropriate an appropriate manner.
Non-example: Pretend to be reading a story. Have volunteers sit in inappropriate positions (e.g., sitting on their legs, standing next to their chair, sitting sideways on their chair).

Review

You did great with the role plays for practice in Sitting in Our Seats.
Again, let's read together the steps in Sitting in Our Seats

(choral read).
1. Sit and stay seated in our chair
2. Keep your feet underneath your desk and your chair legs on the floor
3. Sit straight and quietly

Let's work hard to practice this behavior today.

We are going to review the skill: ***"Talk in a Quiet Voice"*** (refer to poster)

Definition

The steps are (teacher reads aloud):

1. Talk with a whisper
2. ONLY talk to people at your table

Now everyone read with me (students read chorally).

Rationale

Why is it important to use these steps for talking in a quiet voice? (so we can all hear the teacher, the classroom is quieter so people can work, so people are not talking loudly, so students aren't shouting out).

Role Play

Let's practice talking in a quiet voice.
Use volunteers (2-3 students). After each example, ask students if the volunteers were talking in a quiet voice and to state the steps they saw (or didn't see).
Example: Pretend to be explaining a math problem on board. Have students talking in a quiet voice about what the lesson is about.
Non-example: Pretend to be reading a story. Have volunteer shout out or talk in a loud voice.
Example: Pretend to be asking questions from the story. Have volunteers raise hands to answer in a quiet voice.

Review

You did great with the role plays for practice.
Again, let's read together the steps in how to talk in a quiet voice (choral read). Let's work hard to practice this behavior today.

(choral read).
1. Talk with a whisper
2. ONLY talk to people at your table

Let's work hard to practice this behavior today.

Procedures for Assessing Student Reinforcer Preferences

1. Begin by explaining to students that you are going to be playing a kind of game where they can earn certain privileges and items based on the points that they earn as a team.

2. Explain that you are going to make a "menu" of items based on things that you and they choose together as reasonable items to earn. Do some pre-teaching about what kinds of things would be appropriate for them to suggest (e.g., lollipops, stickers, etc.) Provide some non-examples (e.g., a bicycle, a whole day without doing work, etc.) in this exercise too, to help things from getting out of hand during the activity.

3. Before asking students to give suggestions, do a short pre-teaching about:
   a. How to appropriately make suggestions (raise hand, wait to be called on, etc.)
   b. How to react if someone makes a suggestion that they don't like
   c. When the timer goes off (or at a predetermined time) we will stop this activity, so best to stay on task so that we can get as many things as possible listed.

4. Use the whiteboard/chalkboard or a large pad on an easel so that all students can see the items that are being suggested and written. Start by suggesting something that you think all students will agree with (e.g., stickers, computer time, etc.). Ask the students if that would be something that they would like to be able to earn, and if so then write it on the board. Proceed by asking for more suggestions and writing them on the board.

5. Only accept suggestions from students who raise hands and wait to be called on.

6. At some point after completing the assessment (but BEFORE erasing the board!), write down all of the suggestions that the students proposed. Use this list to make up your daily/weekly "menu". <u>All items do not need to be on the menu at all times</u>.

7. Repeat the preference assessment every so often, when it seems like the students might be getting tired of the things on the original list.

Appendix G

Skill Posters

Follow Directions
the 1st Time

1. Look at the person
(teacher) & listen

2. Say OK

3. Do it

4. Check back (if needed)

How to get the
Teacher's Attention

1. Look at the teacher

2. Raise your hand

3. Wait for the teacher to
call on you

STOP

4. Ask your question or give
answer

Ignore
Inappropriate Behavior

1. Keep a pleasant face

2. Look away from the
person

3. Keep a quiet mouth

4. Pretend you are not
listening

5. Follow directions–
do your work

Staying in Our Seat

1. Sit and stay seated in your chair

2. Keep your feet underneath your desk, and your chair legs on the floor

3. Sit straight and quietly

Talk in a Quiet Voice

1. Talk with a whisper

2. ONLY talk to people at your table.

Appendix H

Point Sheet

School: All Saints   Teacher: _____   Date: _____   Goal: _____

POINTS:	1	2	3	4	5	6
Getting Teacher Attn: 1. Look at teacher 2. Raise your hand 3. Wait for the teacher to call on you 4. Ask your question or give answer						
Follow Directions 1ˢᵗ Time: 1. Look at the teacher 2. Say OK 3. DO IT 4. Check back (if needed)						
Staying in our Seat: 1. Sit and stay seated in your chair 2. Keep your feet underneath your desk, and your chair legs on the floor 3. Sit straight and quietly						
Talk in a quiet voice: 1. Talk with a whisper 2. ONLY talk to people near you						
Ignoring inappropriate behavior: 1. Pleasant face 2. Look away 3. Quiet mouth 4. Pretend not to listen 5. Follow directions-do your work						

Appendix I

Procedural Fidelity Checklist

Class-wide Function-Based Intervention Teams (CW-FIT)
Procedural Fidelity Checklist

School: _____   Observer: _____
Teacher: _____   Date: _____

<u>CW – FIT procedures</u>

1. Skills are prominently displayed on posters   yes   no
2. Precorrects on skills at beginning of session   yes   no
    a) How to get attention (raise hand)
    b) Following directions/completing work
    c) Ignoring inappropriate behavior
    d) Say in my seat
    e) Talk in a quiet voice
3. Corrections for behavior match to language of skills/PBS   yes   no
4. Team point chart displayed   yes   no
5. Daily point goal made   yes   no
6. Timer set for 1-3 minute intervals (5 minutes if follow-up phase) yes   no
7. Points are awarded to individuals/teams for use of the skills   yes   no
8. Teachers provide specific praise for use of the skills   yes   no
9. Praise ratio to reprimands approximates 4:1 level   yes   no
10. Points tallied for teams and winners announced   yes   no
11. Rewards delivered for winning teams   yes   no

Number "yes" ____
Total # scored ____
"# "yes" divided by total = % yes ____

<u>Classroom management-student behavior</u>

1. Directions for class assignments are provided and clear   yes   no
2. Materials for use are available and location noted for students yes   no
3. Transitions are smooth with only minor disruptions   yes   no
4. Teacher ignores minor inappropriate behaviors   yes   no
5. 80% of the class remains on task during group lessons   yes   no
6. 80% of the class remains on task during independent work   yes   no
7. Teacher monitors academic work and gives feedback   yes   no
8. Target student # 1 is on task 80% of time   yes   no
9. Target student # 2 is on task 80% of time   yes   no
10. Target student #3 is on task 80% of time   yes   no

Number "yes" ____
Total # scored ____
"# "yes" divided by total = % yes ____