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Effects of a Tier 3 Self-Management Intervention with Parent Involvement on Academic Engagement and Disruptive Behavior

Ashley Nicole Lower

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of

Educational Specialist

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ABSTRACT

Effects of a Tier 3 Self-Management Intervention with Parent Involvement on Academic Engagement and Disruptive Behavior

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This manuscript includes two studies. The research design for study 1 was a single-subject reversal design, while study 2 was a case study with 5 experimental conditions. These studies investigated the effects of a Tier 3 peer-matching self-management intervention on two elementary school students who had previously been less responsive to Tier 1 and Tier 2 interventions. The Tier 3 self-management intervention, which was implemented in the classroom, included daily electronic communication between teachers and the two students' parents. Results indicated that this intervention effectively reduced disruptive behaviors and increased total engagement when implemented with integrity; without integrity, results were variable.

Keywords: behavior, tier 3 intervention, parent involvement, peer-matching, self-management, treatment integrity

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Finally, I would like to thank the teachers, students, and parents that participated in the intervention as part of my research. Without their willingness to try something new, I would not have been able to collect this data, which contributes to a wider understanding of how to provide students with more intensive support in the general education classroom.

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DESCRIPTION OF THESIS STRUCTURE

This thesis, *Effects of a Tier 3 Self-Management Intervention with Parent Involvement on Academic Engagement and Disruptive Behavior*, is presented in a hybrid format. In this format both journal publication and traditional formatting requirements are met.

The initial pages of the thesis follow the university requirements for thesis formatting and submission. The first section of the document is presented in the journal-ready format and adheres to the style requirements for future publication in a peer-reviewed journal. The full literature review is included in Appendix A. Two references lists are included in this format. The first list includes only the references found in the journal-ready article. The second reference list includes all citations from the full literature review found in Appendix A.

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Introduction

Schools across the United States are implementing multi-tiered interventions, including response to intervention (RTI; Fuchs & Fuchs, 2007) and positive behavior interventions and support (PBIS; Horner et al., 2014) to improve the quality of education for all students. The U.S. Department of Education has endorsed these practices; in fact, an aspect of the reauthorization of the Individuals with Disabilities Education Act (IDEA, 2004) is an increased focus on helping students with learning and behavior problems to succeed in general education classrooms instead of placing them in special education settings. To achieve this end, schools identify interventions across three levels or tiers. Tier 1 interventions focus on school-wide evidenced-based practices. Tier 2 provides interventions for those needing some additional time and support to achieve success. Tier 3 implements evidenced-based intensive interventions for students needing the most individualized, tailored help.

PBIS and RTI are both grounded in the assumption that all students can learn (Lane, Menzies, Oakes, & Kalberg, 2012; Young, Caldarella, Richardson, & Young, 2012). For example, Buffum, Mattos, and Weber (2011) stressed that the RTI philosophy prompts educators to provide the increased time and/or support many students need in order to learn. Typically, 80% of students respond and learn well at the class-wide or Tier 1 level and do not require more extensive interventions. About 15% of the remaining 20% of students continue to struggle with only school-wide instruction and require a Tier 2 or targeted intervention in order to be successful. Approximately 5% continue to have difficulty despite this additional support; they must have an even more intensive Tier 3 intervention (Young et al., 2012).

Ideally, the targeted Tier 2 interventions are selected from previously validated, research-based practices. Thus these interventions can be implemented within a short time after the needs

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of a student have been identified, giving educators the ability to support students effectively and efficiently (Buffum, Mattos, & Weber, 2011). Tier 3 interventions are usually more complex and intense, tailored to individual students based on functional behavioral assessments (Cheney et al., 2009; Fairbanks, Sugai, Guardino, & Lathrop, 2007).

PBIS is an effective system for decreasing inappropriate behavior and office discipline referrals (Anderson, Fisher, Marchant, Young, & Smith, 2006; Cheney et al., 2009; Fairbanks et al., 2007). The three-tiered system provides additional time and support for promoting academic success as well as improving classroom behavior (Christensen, Young, & Marchant, 2007; Lane, 2007; Noe, Spencer, Kruse, & Goldstein, 2014). Interventions in all three tiers can be implemented in general education classrooms, eliminating the necessity of removing students from the classroom (Basham, Israel, Graden, Poth, & Winston, 2010; Cheney et al., 2009).

Class-wide Function-related Intervention Teams

Class-wide function-related intervention teams (CW-FIT) is a PBIS strategy designed to improve the behavior of all students in a class (Wills et al., 2010). According to Kamps, Conklin, et al. (2015), "CW-FIT is a classroom management system based on teaching classroom rules/skills and use of a group contingency plan with differential reinforcement of appropriate behaviors, and minimized social attention to inappropriate behavior" (p. 2). The program includes a Tier 2 self-monitoring and help card component (Kamps, Wills, et al., 2015).

CW-FIT is well researched in classrooms across the country (see e.g., Caldarella, Williams, Hansen, & Wills, 2015; Kamps, Conklin, et al., 2015; Wills et al., 2010). Studies have shown that implementation of CW-FIT has effectively increased on-task behavior, positively influenced academic engagement, and decreased disruptive behavior of many students (Caldarella, Young, Wills, Kamps, & Wehby, 2015; Kamps et al., 2011; Kamps, Conklin, et al.,

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2015; Wills, Iwaszuk, Kamps, & Shumate, 2014). However, the class-wide intervention alone does not prove effective for all students, particularly for students at risk for challenging behavioral problems (Kamps et al., 2011). More research is needed to examine the effects of the CW-FIT Tier 2 intervention and to investigate individualized comprehensive Tier 3 interventions that will work for students not responding to the CW-FIT Tier 1 and Tier 2 interventions.

The Tier 3 intervention used in these studies involved a comprehensive self-management package that included nine components, which are described in the method section. Since self-management, parent involvement, and electronic communication are principal components of this Tier 3 intervention, background literature is provided below.

Relevant Literature

Self-management. Many interventions for students with emotional and behavioral problems are effective but time intensive and demanding for teachers to implement. Self-management interventions shift some of the responsibility from the teacher to the students, easing the demand on the teachers and helping students take more ownership for their learning (Young, West, Smith, & Morgan, 1991). Chan, Graham-Day, Ressa, Peters, and Konrad (2014) described how these interventions improve the individual's self-assessment of their performance and progress in the target area of concern.

Over several years, self-management interventions have been implemented and found effective at Tiers 2 and 3 with students who have a variety of ability levels (Young et al., 2012). Self-management interventions using a variety of elements have effectively increased academic engagement and productivity, on-task behavior, and homework completion with a wide range of students, including both those with disabilities and without disabilities (Chan et al., 2014; Falkenberg & Barbetta, 2013; Moore, Anderson, Glassenbury, Lang, & Didden, 2013; Rock,

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2005), as well as at a class-wide level (Hoff & Ervin, 2013). Research has also provided evidence that these interventions can be generalized across settings (O'Reilly, Tiernan, Lacey, Hillery, & Gardiner, 2002).

Additionally, researchers have used self-management techniques with students who have emotional and behavioral problems to help improve class preparation, assignment completion, task engagement, and on-task behavior (Amato-Zech, Hoff, & Doepke, 2006; Christensen, Young, & Marchant, 2004; Hansen, Wills, Kamps, & Greenwood, 2014; Stahr, Cushing, Lane, & Fox, 2006). Interventions using a self-management package often include ratings from teachers or peers to match with the self-ratings of target students to improve students' self-evaluations, increase social skills, and/or decrease off-task behavior (Christensen et al., 2004, 2007; McCurdy & Cole, 2014; Peterson, Young, Salzberg, West, & Hill, 2006). Christensen et al. (2004) described how peers reduce teacher time and involvement with an intervention while helping facilitate improved behavior.

The research cited above indicates that self-management techniques improve academic achievement as well as behavioral problems for both typically developing students and for students with a variety of disabilities including emotional and behavioral problems. Students with more severe behavioral problems may need more intensive interventions, and self-management interventions can be combined with teacher or peer matching in order to create this additional support. However, little research has investigated including parents in a self-management package as a support for their child.

Parent involvement. Parents may also provide assistance with behavior change; however, little research has investigated the involvement of parents in a classroom-based self-management package as a means of support for their child**.** Parents are important partners in the

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development of their child's pro-social skills. Chen, Yu, and Chang (2007) found that parent involvement positively correlates to a child's educational and social success. This finding has been corroborated by research conducted by El Nokali, Bachman, and Votruba-Drzal (2010), who concluded that a child's problem behaviors decline and social skills increase in relation to their parents' degree of involvement. Through collaboration, families and schools accomplish more together than they can separately (Sar & Wulff, 2003).

Some educators invite parents to help their children when problems arise by involving them in problem solving meetings with a team of professionals (Sar & Wulff, 2003). Having parents specifically involved with their child's educational interventions (Green, Walker, Hoover-Dempsey, & Sandler, 2007) has been correlated with decreases in certain externalizing behaviors in students (Coutts, Sheridan, Kwon, & Semke, 2012). Knowing this, teachers have successfully involved parents in interventions at school or at home (Adams, Womack, Shatzer, & Caldarella, 2010; Marchant & Young, 2001). However, researchers should find more efficient and effective ways for school personnel to involve parents in interventions.

In the past, school professionals have also made efforts to engage parents in education using non-traditional technology-based modes of communication. Two decades ago, a telephone-based technology was developed and used as a daily connection between schools and home (Bauch, 1994). This daily message from schools correlated with an increase in parent phone calls to the school. More recently, professionals have proposed several ways to utilize technology for such communication, including internet interfaces, giving parents access to their child's educational information (Chen et al., 2007; Wilson, 2005). With their potential to close the communication gap between parents, teachers, and students, these systems have been shown

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to improve student attendance (Bird, 2006). Other researchers have used blogs in attempting to involve parents in teaching educational topics at home (Ozcinar & Ekizoglu, 2013).

Overall, both traditional and technology-based attempts to involve parents have achieved varying levels of success. Parents have engaged more in helping their children and making decisions for them. However, some programs have involved only one-way communication, not allowing parents the opportunity to respond or give input.

Electronic communication. Text messaging may greatly benefit students in managing their behavior and improving their academic achievement. Using electronic messaging could be an efficient and effective option to invite parents to be more involved in the educational needs and decisions of their children. Parents have suggested that receiving messages between two and seven times per week is acceptable, and that they would welcome ongoing messages pertinent to their child's needs (Sharifi et al., 2013). Additionally, parents reported alertness to goals, motivation to act, social support, immediacy, brevity, ability to link to other systems, and comfort with and ease of use as several of the benefits to receiving information via text messaging (Ahlers-Schmidt et al., 2012; Culley & Evans, 2010; Franklin, Waller, Pagliari, & Greene, 2006; Sharifi et al., 2013). Parents and teachers have generally welcomed text messaging as a way of communicating with one another.

As found in other settings (Bauer, Okon, Meermann, & Kordy, 2012; Collins, McAllister, & Ford, 2007; Sharifi et al., 2013), electronic messaging can enable an efficient and cost-effective personal interaction between school and home. For these studies, I suggest that electronic messaging serve at least three functions in the parent-school partnership: (a) allowing the teacher and parent to communicate regarding the child's school performance, (b) providing information to the parent that can be used to praise the child, and (c) allowing the parent to report

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back to the teacher. This study was undertaken to provide information regarding the use of electronic messaging between parents and their children's teachers.

Treatment integrity. Treatment integrity, or implementing the intervention as it was designed to be implemented, is key to noting the effectiveness of the intervention. Thus, importance should also be placed on the integrity with which an intervention is implemented. According to Cooper, Heron, and Heward (2007), treatment integrity involves confirming that the independent variable is implemented as proposed. Cooper et al. noted that without fidelity, results of an intervention can be inaccurately interpreted. In some situations, this may lead to a conclusion that an intervention was ineffective in producing changes in the dependent variable, when in reality it may have produced an actual effect if executed as prescribed.

Summary

Students with disruptive classroom behaviors often require extra time and support to attain academic success, requiring both Tier 2 and Tier 3 interventions. However, teachers can have difficulty giving the necessary time and support to students with behavioral problems due to the many demands on their time. Research supports the use of peers to support struggling students (Gilberts, Agran, Hughes, & Wehmeyer, 2001; McCurdy & Cole, 2014). Additionally, teachers can help students to monitor and manage their behaviors through a variety of PBIS strategies (Marchand-Martella, Ruby, & Martella, 2007; McIntosh, Campbell, Carter, & Dickey, 2009; Thornton, 2012). Studies have utilized a combination of peer- and self-monitoring to improve socially appropriate behaviors in a classroom (Christensen et al., 2004). Parents should be considered as another potential resource.

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Purpose of These Studies and Research Questions

This research examined the effectiveness of a comprehensive Tier 3 peer-mediated self-management package for reducing disruptive behavior and increasing academic engagement of elementary students. An added dimension of parent involvement was implemented via daily two-way electronic communication between the teacher and the child's parent. The students had not responded at the desired level to previous Tier 1 and Tier 2 interventions. Two studies were conducted. Originally, both studies were intended to use a single-subject reversal design, but due to complications discussed later in this manuscript, the second study did not have an experimental design and would more accurately be referred to as a case study. The case study had multiple conditions but not a formal experimental design. These studies provide an example of how a Tier 3 intervention can be implemented within the general education classroom to allow students to simultaneously access the core curriculum. The importance of treatment integrity is also highlighted.

The following research questions guided these studies:

1. To what extent does a Tier 3 peer-matching self-management package including parental involvement impact total engagement and disruptive behavior of students who were previously less-responsive than their peers to both Tier 1 and Tier 2 interventions?
2. What impact does treatment integrity have on the effectiveness of a Tier 3 intervention package?

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Method

Participants

The current studies began with the CW-FIT intervention, which served as the context from which Tier 2 and Tier 3 interventions were adopted. CW-FIT had been implemented in 13 general education classes and 1 special education class at the elementary school where the initial study took place. Classes had been randomly assigned to treatment and control conditions, with seven teachers in each group. Of the 152 students in the original treatment condition (Caldarella et al., 2015), only 19 (12%) had not responded well to CW-FIT Tier 1 interventions and had been provided an additional CW-FIT Tier 2 self-recording program. Two of these 19 students became the subjects of this study because the Tier 2 intervention had not been effective.

Parents had previously given written permission for their students to be involved in the overall CW-FIT intervention. The two students were selected based on their need for extra support beyond CW-FIT Tier 1 and Tier 2 interventions as indicated by data collected in collaboration with a recommendation from classroom teachers. The researchers and the classroom teachers met with the parents of both students to explain the details of the proposed intervention package. Parents gave consent for the overall CW-FIT study (see Appendix B for permission form), and verbally agreed for their students' and their own participation in this Tier 3 intervention. This study involved 1 third-grade student and 1 fourth-grade student. This study reported their performance during the baseline, CW-FIT Tier 1, and CW-FIT Tier 2 conditions of the larger group study, along with their performance under the Tier 3 self-management condition.

Target student: Study 1. Shane was a 9-year-old, third-grade student. He was a Caucasian male who had difficulties with hyperactivity, class disruptions, and off-task behavior

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within his classroom, but was not classified with a disability and did not receive special education services.

Peer partner: Study 1. The peer partner for the Tier 3 intervention was a male in the same grade and class as Shane. This student was identified by his teacher as being helpful in the classroom and as having a positive relationship with Shane. He participated as a peer model in the larger CW-FIT study before he was selected to be Shane's peer partner for the Tier 3 intervention.

Teacher: Study 1. Shane's third-grade teacher was a female in her first year of teaching, and was pursuing her Bachelor of Science degree in Elementary Education.

Parent: Study 1. Shane lived with his biological parents. His mother was a stay-at-home mom. She showed a willingness to be contacted via text messaging for the duration of the study. Shane's mother participated in the intervention by communicating daily with his teacher via text messaging. She also talked with Shane at home each day after school and, based on feedback from the teacher, praised him for his good behavior and provided the activities that Shane had earned.

Target student: Study 2. Ricardo was a Caucasian, male, fourth-grade student, who was homeschooled each day until 11 am. He spent the second half of the day at school. He was classified under the Other Health Impairment category to receive Special Education services and was on an Individualized Education Program (IEP). This program was focused on his behavior, not his academics. At the time of the intervention, he did not have any special accommodations. He had been on a simple tally behavior plan for part of the year, but this was no longer in place when the study began.

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Peer partner: Study 2. The peer partner for Ricardo was a male from his class. His teacher selected the peer partner because he was already a peer model for the larger CW-FIT study.

Teacher: Study 2. Ricardo's fourth-grade teacher was a female with a Bachelor of Science degree in Elementary Education and a Masters of Arts degree in Education. She had six years of teaching experience in second-, third- and fourth-grade general education classrooms.

Parent: Study 2. Ricardo's biological parents were divorced, and he lived with his mother. His father was involved in his life, but was not involved in this study. His mother was working, but worked partly from home. His mother asked to be contacted by the teacher via email instead of text messaging. She participated in the intervention by communicating daily with his teacher via email. She also talked with Ricardo at home each day after school and, based on feedback from the teacher, praised him for his good behavior and provided the activities that Ricardo had earned.

Settings: Studies 1 & 2

Both of these studies took place in a suburban Title 1 elementary school in the U.S. mountain west in two general education classrooms. Both classroom teachers had already been utilizing CW-FIT Monday through Thursday in their classrooms in sessions of approximately 45 minutes. The interventions took place during math instruction in the third-grade classroom and during reading centers in the fourth-grade classroom.

The training conducted by the primary researcher for the target students and their peer partners occurred in a conference room within the school as well as in the hallway outside of the classrooms. Both of the student pairs also spent time practicing within their classroom prior to intervention implementation. The primary researcher also trained the teachers and the mothers.

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Classroom: Study 1. In the third-grade classroom there were 18 students (10 girls and 8 boys), of whom 7 were English Language Learners. None of the students in the classroom were on an Individualized Education Program (IEP) and thus were receiving special education services; however, two had 504 accommodations.

Classroom: Study 2. The fourth-grade classroom was comprised of 23 students (13 boys and 10 girls). There were 11 English Language Learners and 6 students were served by special education and had a written IEP.

Intervention Procedures

Dependent variables. Two of the dependent variables collected as part of the overall CW-FIT study, total academic engagement and disruptive behaviors, were used for both of these studies. Total academic engagement was defined as the student being engaged in working on any assigned work or other approved activity (i.e., "Is the student doing what he is supposed to be doing?"). Examples for the third-grade student included keeping his eyes on the teacher during instruction, working on math problems at his desk, or answering questions in a class discussion. Examples for the fourth-grade student included reading quietly at his desk, working in a group with the teacher on specific concepts, and working quietly at a computer. Disruptive behavior was defined as any action by the student that interfered with his participation and/or the productivity of his classmates. Disruptive behavior for both students included rocking back and forth in the student's chair, calling out an answer without raising his hand, arguing, name-calling, and physically invading the boundaries of others.

Data collection. Data were collected through observations conducted by trained CW-FIT observers during 15-minute observation sessions, using the *Multi-Option Observation System for Experimental Studies* (for more details on this observation system see MOOSES;

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Tapp, Wehby, & Ellis, 1995). During these sessions, the observers marked any motor or verbal disruption from the target student. Disruptive behaviors were marked according to the frequency of occurrence during the time of the observation. Observers also tracked the target student's engagement in academic activities. Their total engagement included both active and passive involvement in classroom activities. Their engagement was marked based on the duration of time they spent actively or passively engaged, or disengaged. Observations were recorded using tablets. All data were calculated and graphed to provide a visual representation.

Observer training. Observers went through an extensive training process. They had to complete the University Institutional Review Board's ethics training course as well as a background check. There were 10 observers for the CW-FIT intervention, consisting of a research coordinator, a school psychology graduate student, and eight undergraduate students. The research coordinator was trained with the researchers at the University of Kansas (principal investigators on the CW-FIT grant), and was reliable with them and with the researchers at Vanderbilt University (the third partner on the grant), both above 85% interobserver agreement (IOA). All 10 of the observers observed in the 2 intervention classrooms throughout the year, though only seven observed during the implementation of the Tier 3 intervention.

The CW-FIT research coordinator trained the observers, who read definitions for the observation codes used to track student behaviors and passed a quiz associated with the definitions at 90% or higher. Observers practiced coding a prerecorded video until they reached an 85% interobserver agreement percentage criterion three times. Once they became reliable with the video, the research coordinator went with them to various elementary classrooms that were not participating in the CW-FIT study for training on interobserver agreement observations. Observers had to be reliable in the presence of the research coordinator three times at 85% or

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higher. After the observations in elementary school classrooms, observers were considered trained. The research coordinator went to participating classrooms with the observers during their first session to complete a reliability check. Periodically throughout the year, the research coordinator would conduct reliability observations to ensure 85% or better interobserver agreement. Booster sessions were not required as all observers maintained a high level of IOA.

Data analysis: Studies 1 & 2. Data were gathered three to four times per week unless Shane or Ricardo was absent or CW-FIT was not implemented due to scheduling conflicts. All of the data were graphed and analyzed for changes in the mean level of performance, considering trends, overlapping data points, and variability in each separate phase; adjacent phases were then compared.

Interobserver agreement: Studies 1 & 2. There were other classes included in the overall CW-FIT study, but the following interobserver data come solely from the two classrooms where the Tier 3 intervention took place. Out of the 51 overall CW-FIT group on-task observations in the two classrooms during the 2014-2015 school year, IOA was completed for 31% of the sessions with an average of 95% IOA, ranging from 89% to 99%.

Over the course of the school year, there were 62 total individual observations for the two target students. IOA was completed for 29% of these observations with a mean of 90% agreement, ranging from 77% to 100%. During the Tier 3 intervention phase, IOA was measured for 37% of the sessions with 93% agreement, ranging from 77% to 100%.

Independent Variable

Baseline. Prior to introducing any of the independent variables, data were collected during baseline conditions at the beginning of the overall study during regular classroom instruction for both students. Each teacher had their own classroom management and teaching

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styles, which they used in their classroom during baseline. The third-grade teacher had three rules that she posted in her room and referred to when students were not behaving well. She used a clip chart and told the students to clip up on the chart, which represented receiving more privileges, and to clip down, which represented receiving fewer privileges. She told students to clip up for good behavior or to clip down for bad behavior at her preference. This was most notably used at the start of the math period as they came in from lunch. The fourth-grade teacher used 6 classroom rules. At the beginning of the year, the students were able to brainstorm rules, which were then used to manage classroom behaviors. She had these rules posted in the classroom though they were not frequently referenced. The teacher focused more on academic work rather than behavior management.

Class-wide function-related intervention teams tier 1. After the baseline conditions, which consisted of the teachers' own classroom management plans, CW-FIT was introduced. In this phase, teachers followed a specific protocol for CW-FIT. Students were placed on teams that usually consisted of between three and five students. The teacher used a timer during these sessions. The timer was set to beep every 2-3 minutes, prompting the teacher to award points and praise the students. The teacher posted the CW-FIT classroom expectations and the steps to fulfill these expectations on posters. These expectations included: Get the teacher's attention appropriately, follow directions the first time, and ignore inappropriate behavior. During each CW-FIT session, teams were working to earn points so that they could earn a reward. Materials used for CW-FIT can be found in Appendix C.

Each session began with the teacher reviewing the CW-FIT classroom expectations. After the teacher reviewed the rules, she chose the daily reward that teams who met the point goal for the session would receive. She then chose the point total for the day (approximately 75-

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85% of the total number of timer beeps). Points for each team were tracked on a large point sheet that was displayed on the board in the front of the room. The timer was then set, and the session began. The timer went off approximately every three minutes. The teams with all members on task and following the expectations were awarded a point. Simultaneously, the teacher praised both teams as well as specific individuals for following the expectations. The teacher could award additional points and praise at other times throughout the session. All teams meeting the goal were given a reward (e.g., free time, joke time, game time) immediately after the academic period was over. The CW-FIT sessions averaged 45 minutes and occurred four days each week.

Class-wide function-related intervention teams tier 2. This phase of the study was similar to the CW-FIT Tier 1 intervention except that Shane and Ricardo were involved in recording their own individual points during the session. This procedure in the CW-FIT program is referred to as self-management. However, to reduce confusion between what is implemented during the Tier 2 and Tier 3 phases, it is referred to as self-recording in this document. Every time the timer went off, they had the opportunity to consider if they were on task and following the expectations. If they were, they could award themselves a point on the tracking form provided (see Appendix D). If not, they did not receive a point.

Tier 3: Study 1. The self-management intervention package included 9 components (see Table 1): filling out a self-management card, self-evaluating and recording by the target student, evaluating and recording by the peer partner, matching the data recorded by the two students on the self-management card, awarding points based on matches, praising by the peer, and exchanging points for computer time with the teacher at school. Daily text messaging between the teacher and parent resulted in praise at home by Shane's mother, along with a reward of time

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on the computer or time for Shane to play a game with his mother based on the points he received.

Table 1

Components of the Tier 3 Self-Management Intervention for Both Studies

Intervention Components	Description of the Component
Self-Management Card	The target student had a self-management card on which he would track his behavior according to his individual goals.
Self-evaluation & recording	Each time a MotivAider® (2000) vibrated, the target student marked *yes* or *no* in one of the boxes on the card depending on whether he thought he followed his goals.
Peer/School Psychology Practicum Student (SPS) Evaluation	The peer partner/SPS would also mark *yes* or *no* in the corresponding box according to his observation of the target student's behavior during the same period.
Matching using the Self-Management Card	The target student tried to match the *yes* or *no* given by the peer partner/SPS.
Points	If the target student and peer/SPS matched a *yes*, 2 points would be awarded. If they matched on a *no*, 1 point would be awarded. If they did not match, 0 points were awarded. The points were written on the card by the peer partner/SPS.
Praise by the Peer/SPS	The peer partner/SPS would give the target student praise on his good behavior or encouragement on what he could improve for the next time period.
Points exchanged for a school reinforce	The target student would review the self-management card with his teacher, and the teacher would give him praise or encouragement. She would also check the point total, and based on his points, he would receive a reward he could use at school.
Two-way technology-mediated communication between school and home	Before the end of the school day, the teacher sent home a text message or an email to the mother letting her know how many points were earned and something for which she could praise her child. The mother would give the reward and praise her child, and then report back what happened to the teacher via a text message or an email.
Praise and reinforcement from parent at home	When the target student arrived home, the mother would praise him and give him a reinforced based upon the points they earned during the CW-FIT session

At the beginning of the CW-FIT sessions, Shane retrieved his self-management card (see Appendix E) and the peer partner picked up the MotivAider® (2000) timer. Shane reviewed the goals with his peer partner, who then set the timer. When the timer vibrated, the peer partner told Shane to mark the card. The peer partner then marked the card with his own observation. The peer partner gave points to Shane based on the point table on the self-management card, along with praise or encouragement. At the end of the session the teacher praised or encouraged

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Shane and totaled up his session points. Shane was told the individual reward he had earned and was given the reward later in the day. If his team earned the class reward, Shane was given this reward as well.

Before the end of the school day, the teacher sent a text message to Shane's mother, suggesting behavior or accomplishments for which she might praise or encourage her child and telling her the number of points he had received during the session. When Shane arrived home, his mother praised or encouraged him and gave him the reward he had earned. She then sent a text message back to the teacher explaining the reward she had given (e.g., money, computer time, game time with a parent) along with a short message about her interaction with Shane. The teacher forwarded the text to the primary researcher.

Tier 3: Study 2. There were some small differences between the Tier 3 packages for Shane and Ricardo. In Ricardo's intervention, the reward was a classroom ticket that could be used to get a prize from a classroom treasure box. Additionally, the teacher and parent communicated via email instead of text messaging. It was intended that text messaging would be the primary mode of communication for the study, but the mother preferred email. Ricardo's reward from his mother was a certain amount of money toward items that he wanted to buy.

Tier 3 matching with school psychology student (SPS): Study 2. This phase contained all of the same components as the regular Tier 3 intervention, except that all components once performed by the peer partner were performed by the primary researcher, a school psychology graduate student (SPS).

Training. Specific scripts were developed for the primary researcher to use in training with the target students (see Appendix F) and their peer partners (see Appendix G) respectively. As part of presenting the intervention to Shane, Ricardo, and their peer partners, modeling and

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role-playing of all of the components occurred. A formal training for each student occurred over multiple days. Each student was trained a total of 2–3 hours. After training, the students were brought together to practice the intervention in their classrooms. The teachers met with the primary researcher to discuss all aspects of the intervention and received a written copy of their role (see Appendix H). The parents had a similar meeting to receive a written copy of their roles (see Appendix I) along with verbal instructions.

Research Design

Due to the limited number of participants, and to the fact that there was no possibility for a control group, a single subject design was chosen for these studies. This design allowed the participants to be their own control, and created the best way to demonstrate experimental control. The original intent of this study was to implement a reversal design with both students. However, because individuals involved with Ricardo had a difficult time implementing the Tier 3 intervention with integrity, two different studies were completed. Another complication was insufficient classroom time because the study was conducted at the end of the school year. Ideally, the treatment integrity issues in study 2 could have been worked out, a reversal implemented, and the intervention re-implemented to determine the effectiveness of the Tier 3 intervention. Since this was not logistically possible, the Tier 3 intervention was tested with integrity with the SPS.

Study 1, completed with Shane, was an ABCDBD reversal design (see Table 2), while study 2, completed with Ricardo, was an ABCDE design (see Table 3). Technically, it would be most appropriate to label study 2 as a case study since it did not end up using a formal experimental design. Most elements of the studies are common to both the experimental study

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and the case study. The elements common to both studies will be explained first, and then the elements unique to both studies will be described.

Common elements. Both studies began with a baseline (Phase A), during which no new program or intervention was introduced in the classrooms. During Phase B, CW-FIT was implemented as a class-wide Tier 1 intervention in the classrooms. Phase C exposed the target students to the Tier 2 self-recording intervention used in addition to CW-FIT. Phase D implemented the Tier 3 peer-matching self-management intervention package with parental involvement.

Table 2

Phases for Study 1

Phase of study	Description of phase
Baseline (A)	Shane participated in normal classroom condition
CW-FIT Tier 1 (B)	Shane participated in CW-FIT
CW-FIT Tier 2 (C)	Shane participated in the Tier 2 CW-FIT Self-Management (Self-Recording) intervention while also participating in the Tier 1 CW-FIT intervention
Tier 3 Intervention (D)	Shane was provided the peer-matching self-management intervention package including parent involvement in addition to the CW-FIT Tier 1 condition
CW-FIT Tier 1 (B)	Shane participated in CW-FIT
Tier 3 Intervention (D)	Shane was provided the peer-matching self-management intervention package including parent involvement in addition to the CW-FIT Tier 1 condition

Divergent elements: Study 1. In study 1, the Tier 3 intervention package was removed and the experiment was reversed to the conditions of CW-FIT Tier 1 (Phase B) following the first Phase D. Following the reversal, the Tier 3 peer-matching self-management intervention package (Phase D) was re-introduced.

Divergent elements: Study 2. Following the common elements in study 2, the intervention package was modified to have Ricardo match with the SPS instead of having him match with his peer (Phase E). Since the peer partner had difficulty with treatment integrity, it

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was decided to see if the SPS could implement the intervention with integrity and if that would produce more stable outcomes.

Table 3

Phases for Study 2

Phase of Study	Description of phase
Baseline (A)	Ricardo participated in normal classroom condition
CW-FIT Tier 1 (B)	Ricardo participated in CW-FIT
CW-FIT Tier 2 (C)	Ricardo participated in the Tier 2 CW-FIT Self-Management (Self-Recording) intervention while also participating in the Tier 1 CW-FIT intervention
Tier 3 Intervention (D)	Ricardo was provided the peer-matching self-management intervention package including parent involvement in addition to the CW-FIT Tier 1 condition
Tier 3 Intervention matching with SPS (E)	Ricardo was provided the self-management intervention package matching with the SPS including parent involvement in addition to the CW-FIT Tier 1 condition

Treatment integrity. Treatment integrity data are essential to ensure evidence-based practices (Smith, Daunic, & Taylor, 2007). Treatment integrity data were collected for the overall CW-FIT study (which was the foundational study) during baseline, Tier 1, Tier 2, and Tier 3 interventions. These data were collected on the class-wide procedures. However, data were not collected for the individual students during the Tier 2 condition.

Treatment integrity data were collected in these two studies on all nine components of the Tier 3 self-management package. During the Tier 3 intervention, each time the MotivAider® (2000) signaled (vibrated), Shane and his peer partner marked the self-mangagement card and the observers marked the treatment integrity checklist (see Appendix J). On this checklist, the observer tracked the peer's accuracy in following the self-management procedures, along with peer praise and teacher praise. Parent praise and reinforcement, along with the two-way teacher-parent communications, were tracked by the texts exchanged for study 1 and by the emails exchanged for study 2. Both text messages and emails were forwarded to the primary researcher.

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The treatment integrity variables were scored for each session as *yes* for occurring or *no* for not occuring. The researchers expected that the peer would praise the target student during at least 80% of the opportunities; if this occurred, praise was scored as *yes*. If praise was less than 80%, it was scored as *no*. To be scored as *yes* for the self-management procedures, the peer needed to follow at least 80% of the procedures during a session. For each study, six yes/no scores were entered and reported as the total integrity percentage (see Table 4 and Table 5 in the results section).

Social validity. Social validity was assessed via questionnaires (see Appendix K) given at the end of the study. A slightly different questionnaire was given to each of the participants: the target students, the peer partners, the mothers, and the teachers. The four questionnaires were composed of between 6 to 10 questions on a Likert scale with extra space for comments after every question. The questions, along with the results, are presented in more detail in the Results section. The questions were used to determine the acceptability as well as the effectiveness of the intervention for all participants. In addition, the mothers and the teachers were asked about the feasibility of implementing the intervention.

The students completed the social validity questionnaires on the last day of the intervention. The teachers were sent the questionnaires via email, and they returned them before the end of the school year. The parents completed the questionnaires during final meetings with the teachers and the primary researcher, following completion of the study.

Results

Study 1: Shane

Total engagement. As seen in Figure 1, Shane's total engagement scores were variable within five of the six phases of the study. During the baseline phase, his four scores ranged from

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35% to 83% with a mean of 60%. In the first CW-FIT Tier 1 phase, his four total engagement scores ranged from 43% to 85% with a mean of 68%. His mean score increased 8% points, but 3 of the 4 data points overlapped with baseline, and there was a sharp downward trend, suggesting the intervention had only a slight effect on Shane's academic engagement. In the next phase, CW-FIT Tier 2, his mean increased an additional 7 percentage points over Tier 1 and 14 percentage points over the baseline to 74%. The Tier 2 intervention seemed to have further improved academic engagement, but Shane's performance was still somewhat unstable. The data showed an overall upward trend, but the scores were still variable, ranging from 53% to 90%. When the Tier 3 self-management intervention phase was introduced, Shane's mean level of engagement increased to 99% with minor variability, with his scores falling within a range of 98% to 100%. This more intensive intervention appeared to have positively affected Shane's academic engagement.

When the Tier 3 intervention was withdrawn and CW-FIT Tier 1 was reintroduced, Shane's performance scores dropped to 80%, 69%, and 83% with a mean level of 79%. After this drop in performance, there was an upward trend with scores of 91% and 90%. While there were no overlapping scores with the Tier 3 intervention phase, his mean level of performance dropped to 83%. Shane did perform better than he had during the initial baseline and CW-FIT Tier 1 phases.

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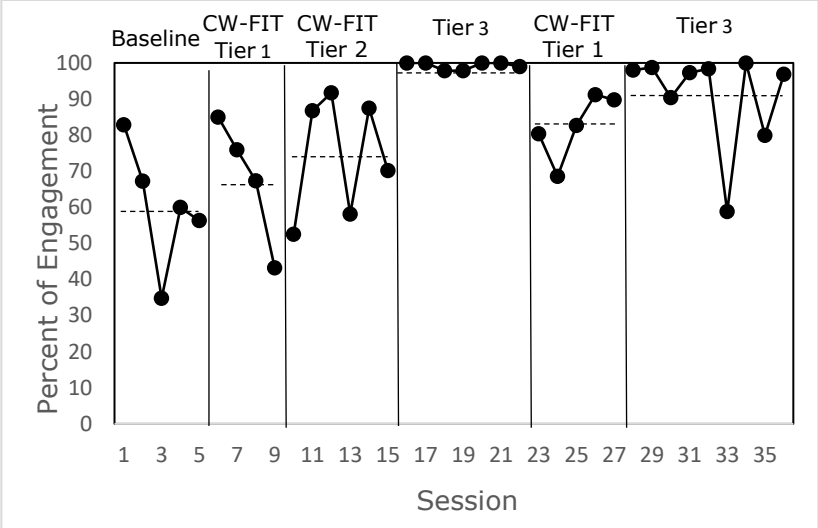

Figure 1. Shane's percentage of total engagement per 15 minute observation. The mean line for each phase is included in the form of a dotted line.

During the second Tier 3 self-management intervention phase, Shane's academic engagement increased to a mean of 91%, and his nine scores ranged from 59% to 100%. Shane's average total engagement increased significantly from a mean of 60% at baseline and 76% during the CW-FIT Tier 1 condition to 95% during the combined Tier 3 self-management package phases.

Disruptive behavior. Figure 2 shows a visual representation of the frequency of Shane's disruptive behaviors per session during each phase of this study. As with the academic engagement data, Shane's disruptive behaviors were variable over each phase of the study. During baseline his disruptive behaviors ranged from 20 to 45 with a mean of 32. In the first CW-FIT Tier 1 condition, Shane's disruptive behaviors decreased across the four sessions with a range of 4 to 23. The mean level of performance decreased by 16 points to a mean of 16 disruptive behaviors per session. While 2 of 4 data points overlapped with baseline, overall the intervention decreased Shane's disruptive behaviors, but not to the desired levels. Since his academic engagement had not improved significantly, CW-FIT Tier 2 was implemented. In the CW-FIT Tier 2 phase, his mean score increased 5 points from the CW-FIT Tier 1 phase, but it

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was still down 11 points from the baseline phase. The Tier 2 intervention did not have a positive effect on disruptive behaviors in comparison with the CW-FIT Tier 1 intervention, but it still decreased disruptive behaviors in comparison to the baseline condition. Despite an overall downward trend, the scores were still variable, ranging from 6 to 48. When the Tier 3 intervention was introduced, Shane's mean level of disruptive behaviors decreased to five with minor variability, with scores ranging from 0 to 10. This intervention appears to have provided the support necessary to positively affect Shane's disruptive behavior.

The Tier 3 intervention was then withdrawn, and Shane returned to the CW-FIT Tier 1 phase. This change resulted in an immediate increase in disruptive behaviors, with the mean score going up to 18, an increase of 13 points, with only one overlapping data point with the Tier 3 intervention. Shane did perform better than he had during the initial baseline and CW-FIT Tier 2 phases. During the second Tier 3 intervention phase, Shane's disruptive behaviors decreased to a mean of 5 with a minor increase in variability, frequencies ranging from 0 to 14. His disruptive behaviors decreased from a mean of 32 during the initial baseline and a mean of 15 during the CW-FIT Tier 1 conditions, to a mean of 5 during the combined Tier 3 intervention phases. There were no overlapping data points between the initial baseline and both Tier 3 intervention phases, suggesting that the Tier 3 intervention phases demonstrated clear improvement over the initial baseline and the CW-FIT Tier 1 and Tier 2 phases.

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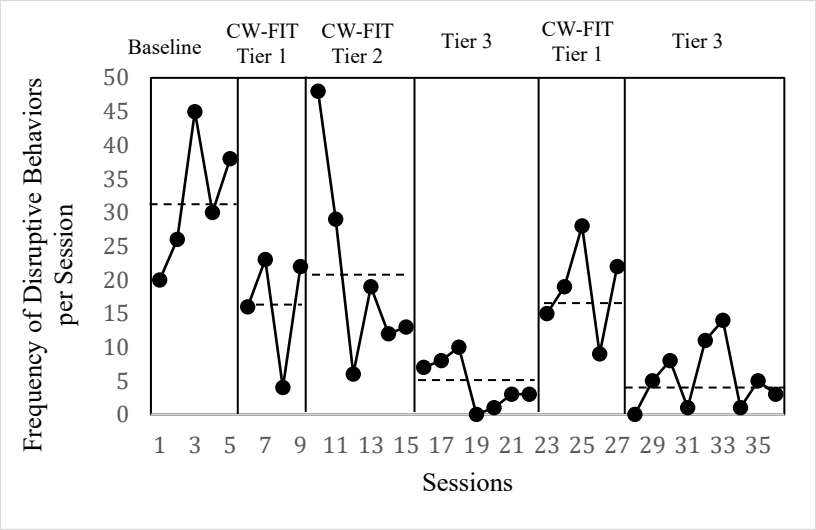

Figure 2. Shane's number of total disruptive behaviors per 15 minute observation. The mean line for each phase is included in the form of a dotted line.

Treatment integrity. As was mentioned in the method section, treatment integrity data were analyzed for baseline and Tiers 1, 2, and 3 of the foundational CW-FIT study for the class-wide procedures. Treatment integrity data were also analyzed for the components of the Tier 3 packaged used with Shane. Lastly, data were analyzed based on the percentage of matches as well as the points received.

CW-FIT class-wide procedures. During baseline, only 12% of the components were implemented as intended. During CW-FIT Tier 1, this percentage increased to 95%, with an 83% increase from baseline. The class-wide procedures were implemented with 95% integrity during the CW-FIT Tier 2 intervention as well. During the Tier 3 intervention, the percentage of integrity slightly dropped to 89%.

Components of the tier 3 package. The treatment integrity data were analyzed to determine how the integrity affected the results of the Tier 3 self-management package. Table 4 displays the treatment integrity data for 8 of the 16 sessions in which the Tier 3 intervention was in effect for Shane. There were 48 treatment integrity data points, 6 per session. Overall, the total integrity percentage for the eight sessions ranged from 67% to 100% with a mean of 87%.

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Integrity data were also collected according to each procedure. His peer partner both followed the procedures and praised Shane at a mean level of 88%. His teacher both praised him and sent a text message home to Shane's mother 100% of the time. Shane's mother reinforced him and sent a return text message to the teacher 75% of the time. Data also indicate that Shane was praised/reinforced by his peer, teacher, and parent, on average 88% of the opportunities they were given to do so.

Table 4

Treatment Integrity Information for the Tier 3 Self-Management Intervention for Shane

Data Type	Session								Integrity percentage by data type
	19	29	30	31	32	34	35	36	
Peer Procedures	Y	Y	N	Y	Y	Y	Y	Y	88%
Percentage of Peer Praise	Y	Y	N	Y	Y	Y	Y	Y	88%
Teacher Praise	Y	Y	Y	Y	Y	Y	Y	Y	100%
Teacher Text Message	Y	Y	Y	Y	Y	Y	Y	Y	100%
Parent Reinforcement	Y	Y	Y	Y	Y	Y	N	N	75%
Parent Text Message	N	Y	Y	Y	N	Y	Y	Y	75%
Integrity Percentage by Session	83%	100%	67%	100%	83%	100%	83%	83%	87%

Note. Percentage of Peer Praise is a Yes if it was >80%. Teacher text message refers to the daily text message sent home to the parent. The parent text message refers to the text message returned back to the teacher from the parent. The overall mean percentage of treatment integrity is 87%.

Percent of matching and points received. Two other indicators of the treatment integrity of the Tier 3 intervention were the percentage of matching between Shane and his peer, and the percentage of total points he received during each session. Shane's matching percentage ranged

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from 71% to 100% with a mean level of 96%. His percentage of total points received during a session ranged 71%-91%, with a mean level of 84%.

Social validity. On the social validity questionnaires, all of the participants acknowledged that they enjoyed participating in this intervention. Shane's questionnaire included questions regarding whether he liked various parts of the intervention. He indicated liking "a lot" the overall self-management intervention, the self-management card, earning the rewards in class, and earning the rewards at home. When asked if the self-management program helped him work quietly on his assignments, sit quietly in his chair at his desk, keep his hands to himself, and keep his eyes on his teacher while she talked, he circled "a lot." He also commented that the Tier 3 intervention "helped me keep calm."

Shane's peer partner was asked to answer six questions on his questionnaire. He indicated that he liked "a lot" helping his peer. He indicated that he felt like the self-management program helped his peer "a little" to sit quietly in his chair. He said that it helped Shane "a lot" to keep his hands to himself, work quietly on his assignments, and quietly listen to his teacher as she talked. He also indicated that he liked "a lot" using the timer, getting a reward, and using the self-management card. However, he only liked matching with Shane "a little." He also commented that he "liked helping Shane."

The classroom teacher responded that Shane's behavior in the classroom was somewhat disruptive, and that his behavior did merit the use of the Tier 3 intervention. She indicated that the self-management card, the peer partner, and the daily text messages were "very helpful" in improving Shane's classroom behavior. She indicated that the parental involvement was "somewhat helpful" in improving his behavior, and commented that she would have indicated "very helpful" if the involvement would have been more consistent. When asked how helpful

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the school/home rewards were in improving Shane's behavior, she indicated "somewhat helpful." She reported that she was "very satisfied" with the overall results of the Tier 3 intervention, and that the time and effort to implement it was worth the results. She also commented that, after implementing the Tier 3 intervention, "I noticed a big difference in Shane. He was much happier at school and resolved his frustrations more calmly."

Shane's mother indicated that the Tier 3 intervention was "very justified" due to Shane's behaviors. She indicated that the daily text messaging was "very important" to the intervention. She indicated that all components of the intervention were "very helpful." She also indicated that she was "very satisfied" with the Tier 3 intervention, and that it was worth the time and effort she was asked to give. In addition, she mentioned that she appreciated what she had learned from the Tier 3 intervention about the importance of giving her son quality attention and how the texting provided daily prompts to help him. According to the questionnaires, all the participants viewed this intervention as acceptable, feasible, and practical.

Study 2: Ricardo

Total engagement. Figure 3 indicates that Ricardo's percentage of total engagement was variable throughout phases. During baseline, his 5 total engagement scores ranged from 26% to 88% with an average of 53%. During the CW-FIT Tier 1 phase, his five scores ranged from 60% to 94% with an average of 72%. His mean scored increased by 19% points, but 4 out of the 5 data points overlapped with baseline. There was also a small downward trend, which suggested that the intervention had an initial impact but was then trending back toward baseline scores. In the CW-FIT Tier 2 phase, his 5 total engagement scores ranged from 30% to 71% with an average of 50%, with a decrease of 22% points from the CW-FIT Tier 1 phase. The Tier 2 intervention seemed to have a negative impact on his academic engagement. His scores

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continued to be variable, and there was a downward trend in his engagement. When the Tier 3 peer-matching self-management intervention was introduced, Ricardo's mean level of engagement increased to 73% with continued variability, with his nine scores ranging from 22% to 99%. Four out of the nine data points overlapped with the data in the CW-FIT Tier 2 phase. This phase had the greatest degree of variability amongst all of the phases with Ricardo. In the final Tier 3 self-management intervention matching with the SPS, his scores ranged from 87% to 100% on the two data points with an average of 94%. This phase had the least variability in scores, and this intervention seemed to have a positive effect on Ricardo's academic engagement although there were only two data points.

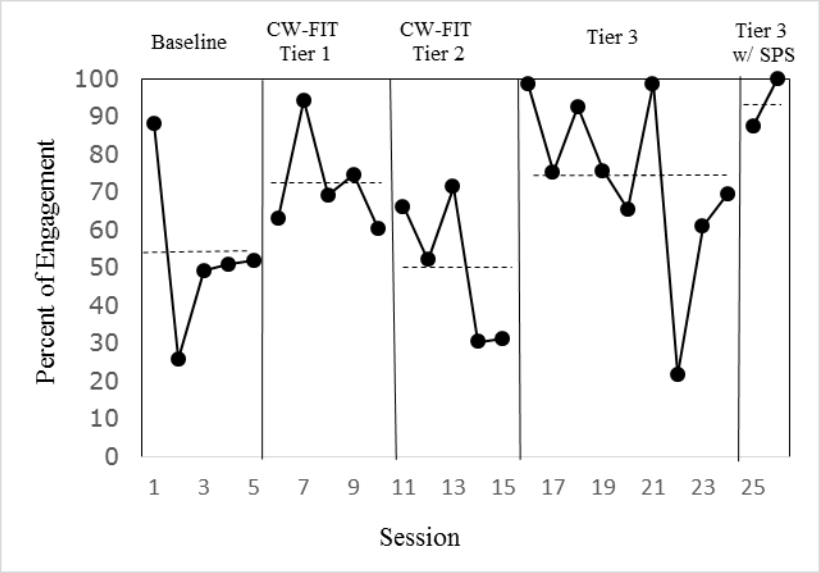

Figure 3. Ricardo's percentage of total engagement per 15 minute observation. The mean line for each phase is included in the form of a dotted line.

Disruptive behaviors. Figure 4 shows a visual representation of the frequency of Ricardo's disruptive behaviors per session (15 minute observation) during each phase of this study. As with the academic engagement data, Ricardo's disruptive behaviors were variable over each phase of the study. During the baseline condition Ricardo's disruptive behaviors range from 19 to 47 with a mean of 30. In the CW-FIT Tier 1 phase, Ricardo's disruptive behaviors

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ranged from four to 28 with a mean of 17, decreasing by 13 points from the baseline condition. Only two out of his five scores from this phase overlapped with baseline. Since his disruptive behaviors had not improved to desired levels, CW-FIT Tier 2 was implemented with Ricardo. In this phase, his mean score of 23 was an increase of 6 points from the CW-FIT Tier 1 condition, but was still down by 7 points from baseline. His disruptive behaviors were still variable as they ranged from 10 to 42, but there was a downward trend. The Tier 2 intervention did not have a positive effect on disruptive behaviors in comparison with the CW-FIT Tier 1 condition, but it still decreased disruptive behaviors in comparison to the baseline condition. When the Tier 3 peer-matching intervention was introduced, Ricardo's mean level of disruptive behaviors stayed fairly constant at 22, with scores ranging from 5 to 37. Additionally, seven of the nine scores overlapped with scores from the CW-FIT Tier 2 intervention. The final Tier 3 matching with the SPS phase resulted in two scores ranging from two to nine with a mean level of six. Ricardo's mean level of disruptive behaviors decreased by 16 points from the Tier 3 peer-matching condition. His scores were initially less variable as well. The Tier 3 SPS-matching condition shows an initial decrease in overall disruptive behaviors.

Treatment integrity. As was mentioned in the Method section, treatment integrity data were analyzed for baseline and Tiers 1, 2, and 3 of the foundational CW-FIT study for the class-wide procedures. Treatment integrity data were also analyzed for the components of the Tier 3 packaged used with Ricardo. Lastly, data were analyzed based on the percentage of matches as well as the points received.

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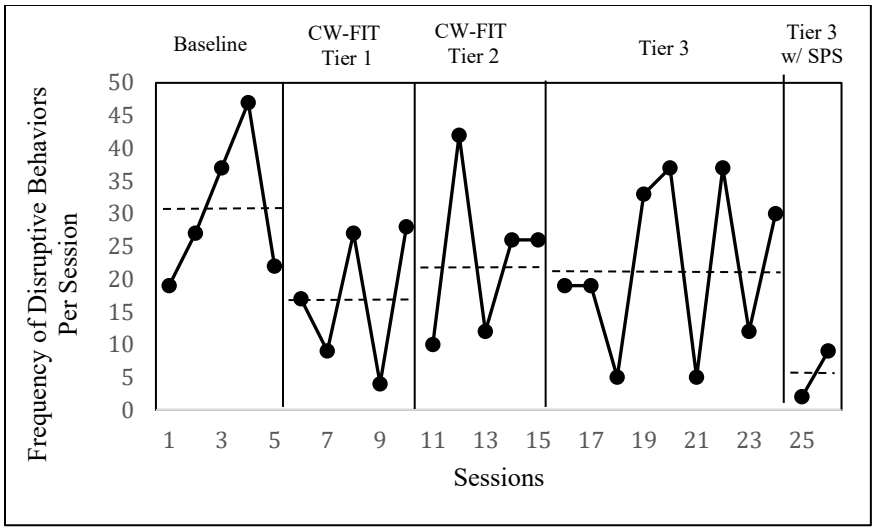

Figure 4. Ricardo's number of total disruptive behaviors per 15 minute observation. The mean line for each phase is included in the form of a dotted line.

CW-FIT class-wide procedures. During baseline, only 1% of the components were implemented as intended. During CW-FIT Tier 1, this percentage increased to 92%, with an 91% increase from baseline. The class-wide procedures were implemented with 78% integrity during the CW-FIT Tier 2 intervention, which was a 14% drop from CW-FIT Tier 1. During the Tier 3 intervention, the percentage of integrity slightly dropped to 77%.

Components of the tier 3 package. The treatment integrity data were analyzed to determine how the integrity affected the results of the Tier 3 peer-matching and the Tier 3 matching with the SPS conditions. Table 5 displays the treatment integrity data for study 2 for seven of the 11 sessions in which the Tier 3 interventions were in effect. There were 42 data points, 6 per session. Overall, the integrity percentage for the seven sessions ranged from 17% to 100% with a mean of 59%.

During the first five sessions where the Tier 3 peer-matching intervention was implemented, the mean integrity was even lower with a mean level of 47% with scores ranging from 17% to 63%. The integrity was also analyzed according to each of the procedures. During the first five sessions, the peer partner followed the procedures at a mean level of 80%, but he

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only praised Ricardo at a mean level of 20%. The teacher praised Ricardo on average only 40% of the time, but she sent an email to Ricardo's mom 80% of the time. Lastly, based on the information provided by Ricardo's mother, she did not reinforce him, but she did send a return email to the teacher at a mean level of 40%. Data also indicated that Ricardo was only praised or reinforced by his peer, teacher, or mother, on average, 20% of the time.

Table 5
Treatment Integrity Information for the Tier 3 Self-Management Intervention for Ricardo

Data Type	Session 18	19	20	23	24	Integrity Percentage by Data Type
Peer Procedures	Y	Y	Y	Y	N	80%
Percentage of Peer Praise	Y	N	N	N	N	20%
Teacher Praise	N	N	N	Y	Y	40%
Teacher Email Message	Y	Y	Y	Y	N	80%
Parent Reinforcement	N	N	N	N	N	0%
Parent Email Message	N	Y	Y	Y	N	60%
Total Integrity Percentage by Session	50%	50%	50%	67%	17%	47%

Note. Percentage of Peer Praise is a Yes if it was >80%. Teacher email message refers to the daily email sent home to the parent. The parent email message refers to the email returned back to the teacher from the parent. The overall mean percentage of treatment integrity is 47%.

During the last two sessions, the Tier 3 matching with the SPS intervention was implemented. The intervention was implemented with a greater level of integrity with percentages ranging from 80% to 100%, and a mean of 90%. The SPS followed the procedures and praised Ricardo at a mean level of 100%. Additionally, the teacher praised Ricardo and sent an email home to Ricardo's mother 100% of the time. Ricardo's mother reinforced him at home

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at a mean level of 50%, but she sent an email back to the teacher after both sessions (100%). Ricardo was reinforced by the SPS, his teacher, and his mother, on average, 83% of the time during Phase E.

Table 6
Treatment Integrity Information for the Tier 3 Self-Management Intervention Matching with the SPS for Ricardo

Data Type	Session		Integrity percentage by data type
	25	26	
SPS Procedures	Y	Y	100%
Percentage of SPS Praise	Y	Y	100%
Teacher Praise	Y	*N/A	100%
Teacher Email Message	Y	Y	100%
Parent Reinforcement	Y	N	50%
Parent Email Message	Y	Y	100%
Total Integrity Percentage	100%	80%	90% \ 92%

Note. Percentage of SPS Praise is a Yes if it was >80%. Teacher email message refers to the daily email sent home to the parent. The parent email message refers to the email returned back to the teacher from the parent. The overall mean percentage of treatment integrity is 90%\92%. *On this day there was a substitute teacher so this was not applicable.

Percentage of matching and points received. Two other pieces of information collected during the Tier 3 intervention were the percentage of matching between Ricardo and his peer, and the percentage of total points he received during each session. Ricardo matched with his peer at a mean level of 74%, with scores ranging from 62% to 80%. He matched with the SPS at 100%. During the peer-matching phase, his percentage of total points received during a session ranged 58%-75%, with a mean level of 63%. While matching with the SPS, he received 80% of the points possible.

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Social validity. On the social validity questionnaires, all of the participants acknowledged that they enjoyed participating in this intervention. Ricardo's questionnaire included questions regarding whether he liked various parts of the intervention. He indicated liking "a lot" the overall self-management intervention, matching with the peer, earning rewards in class, and earning rewards at home. He indicated that he liked "a little" the self-management card and discussing how he did with his teacher. When asked if the self-management program helped him work quietly on his assignments, sit quietly in his chair, and keep his hands to himself, he indicated "a little." He indicated that the program helped him "not at all" to keep his eyes on his teacher as she talked. He also made some comments that indicated that it helped him be self-aware.

Ricardo's peer partner was asked to answer six questions on his questionnaire. He indicated that he liked helping his peer "a lot." He also indicated that the self-management program helped his peer sit quietly in his chair, quietly listen to the teacher as she talked, and keep his hands to himself "a lot." He answered that the self-management program helped his peer work quietly on his assignments "a little," commenting that sometimes Ricardo would talk a lot. He said that he liked the self-management card and getting the reward "a lot." He indicated that he liked the matching and using the timer "a little."

The classroom teacher responded that Ricardo's behavior in the classroom was "very disruptive," and that his behavior did merit the use of the Tier 3 intervention. She indicated that the self-management card and parent involvement was "very helpful" in improving Ricardo's on-task behavior. She indicated that the peer partner was "somewhat helpful" in improving Ricardo's on-task behavior. She answered that the daily communication process was "somewhat helpful," and that the school/home rewards were "somewhat helpful" in improving his behavior.

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She reported that she was "very satisfied" with the results of the self-management program, and that the program was worth the results. She also commented that she had wished the Tier 3 intervention had started earlier in the year for Ricardo.

Ricardo's mother answered that the self-management program was "very justified" due to Ricardo's behavior. She indicated that the daily communication with his teacher was "very important." She also indicated that the matching with the peer partner, the use of the self-management card, the reinforcement at school, the reinforcement at home, and her discussion with Ricardo at home was "very helpful." She said that she was "very satisfied" with the results of the self-management program, and that the time and effort required from her was worth the results. She also commented that she loved the program, and said that she wanted to implement it during the time that she would be homeschooling him. According to the questionnaires, all of the participants in this study viewed this intervention as acceptable, feasible, and practical.

Discussion

The purpose of these studies was to examine the effectiveness of a Tier 3 self-management intervention package on the academic engagement and disruptive behaviors of two students who had previously been less-responsive than their peers to Tier 1 and Tier 2 interventions. Both students did respond to a degree to both the CW-FIT Tier 1 and Tier 2 interventions. Their mean levels of engagement did increase and their disruptive behaviors did decrease when the first two levels of intervention were implemented. However, this change was not to the level that would have been expected, and thus both needed the intensity of a Tier 3 intervention. Shane's scores (study 1) indicated that this Tier 3 intervention resulted in an overall increased percentage of total engagement and decreased frequency of disruptive behaviors. There was an increase in his total engagement and a decrease in the frequency of

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disruptive behaviors. There was also a reduced variability in each of these variables, which indicates that the Tier 3 intervention did have a positive effect on Shane's behavior. Study 1 supports previous research that, even with strong PBIS Tier 1 and Tier 2, some students require the added support of a Tier 3 intervention to succeed academically (Young et al., 2012).

Furthermore, study 1 demonstrated that a Tier 3 intervention can be effectively implemented in the general education classroom, supporting previous research by Basham et al. (2010). With the support of both parents and peers, students with behavioral problems can receive the amount of time and the intensity of support required for them to find success and to maintain their placement in the general education setting. Study 1 also extended research by showing how school professionals can use purposeful and positive communication with parents to enlist additional support for students, bringing attention to electronic messaging as an efficient method for creating meaningful two-way communication. Such communication has been noted in other professions (Collins et al., 2007; Ho, Hung, & Chen, 2013; Sharifi et al., 2013), but has not been well researched by educators.

According to Cooper, Heron, and Heward (2007), treatment integrity helps confirm that the independent variable is implemented as intended. A high level of integrity increases the likelihood that the improved behavior and engagement can be attributed to the Tier 3 intervention. In study 1, peer praise was implemented with integrity in all but one of the eight sessions for which treatment integrity data were recorded. Although Shane did not receive peer praise during that session, he still received teacher and parent praise, as the teacher and parent had their daily two-way dialog. The overall treatment integrity score for Shane's intervention was 87%, which indicates that, overall, the intervention was implemented as intended a majority of the time. The high level of treatment integrity supports the likelihood that the Tier 3 self-

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management package was effective in increasing total engagement and decreasing disruptive behaviors for Shane.

This high level of integrity was contrasted in study 2, where treatment integrity was poor. During the Tier 3 intervention where the peer was matching, praise only occurred in one out of the five sessions where treatment integrity data were recorded. Parent reinforcement was not recorded in any of these sessions, and teacher praise occurred on only two occasions. The overall treatment integrity score while the peer was matching was 48%, which suggests that the intervention was not implemented as intended much of the time. It is possible that with additional time the peer partner could have improved the integrity of his performance and Ricardo's behavior may have had greater improvement.

Because of the lack of treatment integrity in study 2, it is unclear whether this is an accurate depiction of the effectiveness of this Tier 3 intervention; it makes it difficult to determine the effectiveness of the intervention. The high level of treatment integrity when Ricardo was matching with the SPS initially supports the conclusion that the Tier 3 self-management package could be effective in increasing Ricardo's percentage of total engagement and decreasing his number of disruptive behaviors, but since there are only two data points we must be cautious regarding this interpretation.

This disparity in treatment integrity highlights the importance of treatment integrity in the implementation of interventions. Only when the intervention is implemented as intended can we examine its effectiveness. It is especially important to note the disparity in the core praise/reinforcement components of the Tier 3 intervention package; without positive reinforcement a behavior is not likely to increase in frequency or maintain a high level of performance. The high level of integrity in study 1 and positive reinforcement proved effective

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in improving academic engagement and decreasing disruptive behaviors. However, with the integrity problems in study 2 and low levels of reinforcement, Ricardo's engagement remained variable and his behavior erratic.

Not only was this intervention effective when implemented with integrity, as seen with study 1, both teachers found it feasible to implement in their classroom. Mitchem and Young (2001) have commented that the likelihood of teachers implementing an intervention increases if the intervention is both acceptable and feasible. When classroom interventions are created, the ease of use and acceptability for both teachers and students must be ensured. All participants commented that this intervention was an acceptable and feasible way for Shane and Ricardo to receive the assistance they needed in the classroom. For Shane, the peer matching also seemed to help him become more engaged in the classroom. For Ricardo, the matching with the SPS initially seemed to help him become more engaged and less disruptive. Both of the mothers and the teachers were highly satisfied with the outcome of this Tier 3 intervention.

Although the effects on Shane's total engagement and disruptive behavior were encouraging, there were limitations with study 2, as well as some limitations of this research overall, that should be considered. Since this research included only two subjects there is not enough evidence to claim that it is an evidence-based practice from this study alone so the authors suggest that it should be replicated with more students, in other settings, and across different behaviors.

Additionally, further research should be conducted to demonstrate the need for moving through a tiered system until the level of support given matches what is required to help effectively manage the behavior problems and increase the academic engagement of individual students. These studies support the notion that the focus on tiered support should be on the

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intensity of the interventions. Tiers 1, 2, and 3 refer to the support given to a student, not to the student themselves or to the setting. This should also be further supported in future research.

It should be noted that the information reported by Shane's mother is self-report data and has no measure of reliabilty. However, comments made by Shane and his teacher suggested that the praise was given at home and was beneficial. This is true also of the information provided by Ricardo's mother, but her reporting was much more sporadic throughout the Tier 3 intervention. Future research should attempt to check the reliability of data reported from home. Research should also measure the specific impact of parent praise and positive interactions with their child on the student's level of engagement and disruptive behaviors in the classroom.

Conclusion

General education teachers will have students who are disruptive to the learning environment of their classroom. Schools across the United States have been using PBIS techniques to assist students who require extra support to be academically and behaviorally successful. The Tier 1 CW-FIT effectively improved overall student engagement in classrooms, and Tier 2 self-recording helped many students who were less responsive than their peers to CW-FIT Tier 1. However, for students who are less responsive than classroom peers at the Tier 2 self-recording level, a more intensive intervention needs to be developed and used.

Consideration should be given to implementing Tier 3 interventions in general education classrooms. Interventions such as the Tier 3 self-management package used in the current study can utilize the support of parents and peers to allow students who are less responsive at Tier 1 and Tier 2 levels to continue access to the general education setting and curriculum, and to decrease their disruptive classroom behavior. Additionally, electronic messaging facilitated a

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two-way communication between a parent and teacher that effectively contributed to providing the necessary intensive support.

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APPENDIX A: Review of Literature

Schools across the United States are implementing multi-tiered interventions, including response to intervention (RTI; Fuchs & Fuchs, 2007) and positive behavior interventions and support (PBIS; Horner et al., 2014) to improve the quality of education for all students. The U.S. Department of Education has endorsed these practices; in fact, an aspect of the reauthorization of the Individuals with Disabilities Education Improvement Act (IDEA, 2004), increased the focus on keeping students with behavior problems in the general education setting instead of removing them to a special education setting. To enhance the likelihood of this, these multi-tiered systems have been developed to focus on creating positive classroom environments as well as providing additional time and support to meet the varied levels of intensity needed by individual students. To achieve this end, schools identify interventions across three levels or tiers. Tier 1 interventions focus on school-wide evidenced-based practices. Tier 2 provides interventions for those needing some additional time and support to achieve success. Tier 3 implements evidenced-based intensive interventions for students needing the most individualized, tailored help.

PBIS and RTI are both grounded in the assumption that all students can learn (Lane, Menzies, Oakes, & Kalberg, 2012; Young, Caldarella, Richardson, & Young, 2012). For example, Buffum, Mattos, and Weber (2011) stressed that the RTI philosophy prompts educators to provide the increased time and/or support many students need in order to learn. Typically 80% of students respond and learn well at the school-wide or Tier 1 level and do not require more extensive interventions. About 15% of the remaining 20% of students struggle when they receive only school-wide instruction and require a Tier 2 or targeted intervention in order to be

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successful. Approximately 5% continue to have difficulty despite this additional support; they have need of an even more intensive Tier 3 intervention (Young et al., 2012).

Ideally the targeted Tier 2 interventions are selected from previously validated, research-based interventions. Thus these interventions can be implemented within a short time after the needs of a student have been identified, giving educators the ability to give students the necessary support both effectively and efficiently (Buffum et al., 2011). When needed, Tier 3 interventions are usually more complex and intense, tailored to individual students based on functional behavioral assessments (Cheney et al., 2009; McIntosh, Campbell, Carter, & Dickey, 2009).

In choosing Tier 2 and Tier 3 interventions within a multi-tiered system, research suggests the importance of focusing on the function of behavior. For instance, using a Check-in/Check-out intervention effectively decreased problem behaviors and office referrals, and increased prosocial behaviors among students whose predicted function of behavior was to gain attention (McIntosh et al., 2009). Those whose behavior functioned to escape did not show improvements in their behaviors because this intervention did not meet the needs of these students.

Many studies have been conducted that support the effectiveness of these multi-tiered systems in providing a space for all students to learn. Marchand-Martella, Ruby, and Martella (2007) used the Reading Mastery Plus program to help improve the reading of students in kindergarten through third grade. They modified this program to create a more targeted Tier 2 intervention for those still struggling with the universal support, and an individualized intensive Tier 3 intervention for those who needed additional support beyond what was provided by the targeted Tier 2 intervention. Overall, students exhibited significant improvements in their

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reading skills with the extra support from these more intensive interventions. This approach is significant because all students were given the extra time and support they needed to find success without leaving the core instructional program.

A PBIS system has also been established as an effective system in improving both academic skills and behavior skills of students in the classroom. In one study, a Tier 2 peer-mediated self-management intervention called the Cool Card was implemented with two students who were referred for needing further support due to their classroom disruptions. This intervention had a positive impact on both students' abilities to manage their own behavior (Anderson, Fisher, Marchant, Young, & Smith, 2006). Cheney et al. (2009) implemented a Tier 2 intervention called Check, Connect, and Expect (CCE) with students from nine schools in western Washington. Another nine schools served as comparison schools where the intervention was not implemented. Those receiving the intervention had been identified as having severe internalizing or externalizing behavior problems through a three-phase screening process. Sixty percent of the 121 students involved in the intervention were able to decrease their inappropriate behaviors. These students moved into the range of normal behaviors expected in the classroom. Researchers suggested that those who did not respond should be given a Tier 3 intervention.

For students who require support beyond what Tier 2 interventions provide, Tier 3 interventions seem to effectively improve their skills. In a study conducted within an alternative community day program for students with emotional and behavioral issues, an intensified behavioral multi-tiered system of support reduced behavior problems and enhanced social skills more than the reactive techniques that had been used previously; 2 out of the 32 students qualified to re-enter the general education setting (Thornton, 2012). This provided a preliminary indication that this multi-tiered support can positively influence students who have previously

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been unsuccessful in a public school setting. In another study, which took place in two second-grade classes, teachers implemented a Tier 2 Check-in/check-out program with 10 students that had been identified as having behavior problems in the classroom. Of the 10 students requiring this Tier 2 intervention, only 4 positively responded enough to this intervention for their behaviors to consistently improve. Four of the six students who were unresponsive at Tier 2 were provided a function-based, individualized Tier 3 support that successfully improved their behavior in the classroom. During baseline, the average daily office discipline referrals for these second-grade classrooms were .85. During implementation, they dropped to .41 average daily office discipline referrals (Fairbanks, Sugai, Guardino, & Lathrop, 2007).

Research conducted by Noe, Spencer, Kruse, and Goldstein (2014) suggest more intensive interventions can assist students in their first sound identification as part of phonological awareness. In this study, researchers found that five out of seven students who had previously been less-responsive to a Tier 2 intervention showed large gains in their phonological awareness when a more intensive Tier 3 intervention was implemented. As more support and time was devoted to these students with persistent difficulties, more of them began to improve in their use of these skills.

Overall, schools use multi-tiered systems of support such as RTI and PBIS to assist students in their education at different intensity levels. Interventions in all three tiers can be implemented in general education classrooms, eliminating the necessity of removing students from the classroom to receive more intense interventions (Basham, Israel, Graden, Poth, & Winston, 2010; Marchand-Martella et al., 2007). This increases the likelihood that all students will learn. Multi-tiered systems of support have been found to be effective in helping students with both behavioral and academic difficulties who were initially less-responsive to Tier 1

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instruction in the classroom. However, continued research is needed to determine the effectiveness of Tier 2 and Tier 3 interventions with specific students.

Class-wide Function-related Intervention Team

Class-wide Function-related Intervention Team (CW-FIT) is a PBIS strategy designed to improve the behavior of all students in a class (Wills et al., 2010). This multi-tiered intervention provided the foundation for the current studies, and thus a detailed explanation of this program will be provided. According to Kamps, Conklin, et al. (2015), "CW-FIT is a classroom management system based on teaching classroom rules/skills and use of a group contingency plan with differential reinforcement of appropriate behaviors, and minimized social attention to inappropriate behavior" (p. 2). The program includes a Tier 2 self-monitoring and help card component (Kamps, Conklin, et al., 2015).

CW-FIT is well researched in classrooms across the country (see Caldarella, Williams, Hansen, & Wills, 2015; Kamps, Conklin, et al., 2015; Wills et al., 2010). Studies have shown that the implementation of CW-FIT has increased on-task behavior, positively influenced academic engagement, and decreased disruptive behavior of many students (Caldarella, Young, Wills, Kamps, & Wehby, 2015; Kamps et al., 2011; Kamps, Conklin, et al., 2015; Wills, Iwaszuk, Kamps, & Shumate, 2014). However, this intervention alone does not prove effective for all students, particularly for students at risk for challenging behavioral problems (Kamps et al., 2011). More research is needed to examine the effects of the CW-FIT Tier 2 intervention and investigate individualized comprehensive Tier 3 interventions that will work for students not responding to the CW-FIT Tier 1 and Tier 2 interventions.

These studies investigated a tailored Tier 3 intervention used with two students. This intervention involved a comprehensive self-management package that included nine components

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described in the Method section. Since self-management, parent involvement, and electronic communication are principal components of this Tier 3 intervention, background literature is provided below.

Relevant Literature

Self-Management. Many interventions for students with emotional and behavioral problems are effective but time intensive and thus demanding for teachers to implement. Self-management interventions help shift some of the responsibility from the teacher to the students, easing the demand on the teachers and helping students take more ownership for their learning (Young, West, Smith, & Morgan, 1991). Self-management strategies can be broken down into many elements, and can use one or a variety of these elements at the same time. Chan, Graham-Day, Ressa, Peters, and Konrad (2014) described how these interventions improve the individual's self-assessment of their performance and their progress in the target area of concern. Self-management interventions can include elements such as self-monitoring, where students record and track their behavior, and self-graphing, where students track and graph information about their behavior gathered from the monitoring. Self-evaluation involves students using checklists or rubrics to decide if their performance aligns with the expectations.

Self-management with all students. Self-management interventions have been implemented and found effective for students with a variety of ability levels. In a general education setting, a strategic self-monitoring intervention was implemented for students with a range of disabilities. This intervention included self-monitoring of attention as well as self-monitoring of performance. The intervention proved effective in increasing both academic engagement and academic productivity (Rock, 2005). An important aspect of this study included the involvement of students with needs of varying intensity, meaning that a single intervention

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can be implemented for students of varying ability levels. Research conducted by Moore, Anderson, Glassenbury, Lang, and Didden (2013) used a self-management package, including self-recording, a tactile prompt, and self-graphing, with three developmentally normal high school students who had previously been performing below their ability level. Results suggest that a self-management package using the MotivAider® (2000) improved the on-task behavior of these students in their general education classrooms.

In an elementary school in the Mid West, a class-wide, universal self-management intervention was implemented in three second-grade classrooms. One target student, who previously displayed disruptive behaviors in class, was also observed at an individual level. Results indicated that this intervention decreased the overall disruptive behaviors within the classroom as well as reduced the disruptive behaviors of the target student to similar levels of other students within the classroom (Hoff & Ervin, 2013). Overall, self-management techniques have been successfully used with students who are classified for special education services as well as with typically developing students.

In another elementary school, a self-monitoring package where students used an online program to track their homework completion twice daily was used to impact the completion of math and spelling homework for four students receiving special education services. Researchers found that this intervention improved the performance of these four students (Falkenberg & Barbetta, 2013). The spelling homework completion improved for each student from baseline to intervention. Samantha's percentage of completion improved from 76% to 96.05%, with accuracy improving from an average of 59% to 87.36%. Rio's completion increased from 53.84% to 98.33%, with accuracy improving from a mean of 34.38% to 88.09%. Mike's completion improved from 77.38% to 94.11%, and his accuracy improved from 50.71% to

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87.05%. Lastly, Brady's completion improved from 53.50% to 82.91%, with her accuracy improving from 41.16% to 77.08%. Additionally, these improved homework completion and accuracy scores were maintained after the intervention was faded and removed.

A self-monitoring intervention was used in three different classrooms with a 13-year-old student with moderate developmental disabilities. This intervention was designed from a psychological assessment, and the student was trained prior to the implementation of the intervention. While using this self-monitoring intervention, the student drastically and quickly improved her on-task behavior within all three classrooms (O'Reilly, Tiernan, Lacey, Hillery, & Gardiner, 2002). The mean levels of on-task behavior in Gaelic, Religion, and English classes during baseline were 32%, 29%, and 53.5% respectively. The self-monitoring intervention effectively increased the mean levels of on-task behavior to 93.5%, 87%, and 95% respectively.

Self-management with students with EBD. Self-management interventions also have proven effective in improving both the academic performance and behavioral problems of students with emotional and behavioral challenges. Gureasko-Moore, DuPaul, and White (2007) implemented a study in which a simple self-management package (including both self-monitoring and self-evaluation) improved classroom preparation and assignment completion among six middle school boys diagnosed with attention-deficit hyperactivity disorder (ADHD). Students who had previously been unprepared and completing homework less than 50% of the time were engaging in these behaviors almost 100% of the time while using the self-management techniques. Previous research has also indicated that a function-based self-monitoring package, including a communication system, increased on-task behavior for a fourth-grade student with ADHD, internalizing behavior problems, and a speech impairment in both math and language arts (Stahr, Cushing, Lane, & Fox, 2006).

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In another study involving two students, classified as Autistic and served in a self-contained classroom, self-monitoring successfully increased their attention to tasks in language arts by 169% for one student and 175% for the second student, and in math by 50% for student one and 123% for student two. This in turn increased their accuracy in both language arts and mathematics assignments. In language arts, student one increased his accuracy by 29% and student two increased by 67%. In mathematics, student one increased by 137%, while student two increased by 62% (Holifield, Goodman, Hazelkorn, & Heflin, 2010). Self-management procedures were also used to help two children and one teenager with autism spectrum disorder to improve their percentage of elaborated responses as well as to increase their number of reciprocal question-asking, and also enhanced their overall conversational skills (Koegel, Park, & Koegel, 2014). Additionally a study introducing both a token economy and self-management intervention to 2 five-year-old students with autism suggested that both of these interventions were effective in increasing on-task behavior and appropriate classroom behavior. However, a teacher stated that she preferred the self-management intervention (Shogren, Lang, Machalicek, Rispoli, & O'Reilly, 2011).

In research conducted where both a simple self-management intervention and a self-management intervention based upon a functional behavior assessment (FBA) were implemented, both of these interventions decreased behavior problems and increased on-task behavior of students who were classified with emotional behavioral disorders, and who were given instruction partially in a self-contained classroom (Hansen, Wills, Kamps, & Greenwood, 2014). The FBA indicated that one student's behavior was maintained by attention and the other two maintained by escape which indicates that self-management procedures were effective with students whose behavior had different functions. Applying consequences to target behaviors

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without self-management interventions proved to be less effective. Similarly in research with three elementary school students served in special education classrooms, self-monitoring using a tactile prompt increased students' on-task behavior (Amato-Zech, Hoff, & Doepke, 2006). These individuals increased their on-task behavior from less than 55% of the intervals observed to 90% of intervals observed.

Self-management with teacher/peer matching. Interventions using a self-management package often include teachers or peers to match with the self-ratings of target students in order to improve students self-evaluations and increase social skills and/or decrease off-task behavior (Christensen, Young, & Marchant, 2004, 2007; McCurdy & Cole, 2014; Peterson, Young, Salzberg, West, & Hill, 2006). Christensen et al. (2004) described how peers reduce teacher time and involvement with an intervention while helping facilitate improved behavior. Research using a self-monitoring package, including teacher and peer matching, conducted by Christensen et al. (2004) resulted in "meaningful behavior change" (p. 229) with two students who had numerous office referrals. The effectiveness of peer involvement was also noted in the use of a simple peer-mediated intervention with three students with Autism Spectrum Disorder where disruptive behaviors were effectively reduced to an amount similar to that of other peers in their classrooms (McCurdy & Cole, 2014). The peer supporters in this intervention helped to remind the target students to stay on task when the teacher was not available to do so until the target student could manage their own behaviors. In a third study, when two evidenced-based interventions, peer tutoring and self-graphing, were combined in one middle school classroom with students with emotional or behavioral disorders, these students increased their active responding and decreased their disruptive behaviors (Sutherland & Snyder, 2007).

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Years of research indicate that self-management techniques improve academic achievement as well as behavioral problems for typically developing students as well as for students with a variety of disabilities, including emotional and behavioral problems. Students with more severe behavioral problems may need more intensive interventions, and self-management interventions can be combined with teacher- or peer-matching in order to create the additional support. However, little research has investigated the inclusion of parents in a self-management package as a support for their child.

Parent involvement. Over the past few decades, researchers have been examining the effects of parental involvement on the achievement of students. Parental involvement refers to teachers and parents working together, using their unique perspectives and experiences, to provide the best education for students (Akkok, 1999). Walker, Ramsey, and Gresham (2004) made an inference that children's socialization comes mostly from within their families and specifically from their parents. Thus, at home, parents can take on this natural role in guiding their children to more appropriate social skills.

Knowing that parents are so integral, teachers must take special care to foster their relationship with parents. Although there are significant challenges, teachers must make efforts to overcome them and to work more closely with the parents and families of students. Parents can be important partners in helping teach pro-social skills that will benefit children in both the home and school environments as parents have information about their child that may be essential to the child's educational success (Akkok, 1999). Chen, Yu, and Chang (2007) commented that this parental involvement positively correlates to a child's educational and social success. The bond between the parent and the teacher can have a positive impact on the student's abilities and skills. Families and schools collaborating with one another accomplish

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more together than they can separately (Sar & Wulff, 2003) to help the student. This united force allows students to utilize more of their academic capacity and to find more success at school.

Teachers specifically inviting parents to be involved with their child's education has led to greater parental involvement within the school setting, such as attending parent-teacher conferences or volunteering to chaperone a field trip (Green, Walker, Hoover-Dempsey, & Sandler, 2007). Increased parent engagement resulting from teacher invitations has been correlated with decreases in certain externalizing behaviors in students (Coutts, Sheridan, Kwon, & Semke, 2012). El Nokali, Bachman, and Votruba-Drzal (2010) found that a child's problem behaviors decline and their social skills increase in relation to their parents' greater involvement in their schooling. These researchers further suggest that, as parents communicate more frequently with teachers, they gain a better understanding of their child's social deficits, and thus begin to highlight and reinforce pro-social conduct at home.

Not only is it important that teachers and parents communicate and collaborate, but it is vital that they feel positive about their relationship with one another. Regular school-home communication regarding both positive and negative information should be established in order to build and maintain a positive relationship (Walker et al., 2004). Teachers report a greater level of social skills amongst children whose parents and teacher both view their relationship with one another as positive (Kim et al., 2012). There is a desire from parents to feel that teachers see their child as an individual (Murray, Handyside, Straka, & Arton-Titus, 2013). The relationship between teachers and parents can positively impact the academic success of children.

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Traditional home/school collaboration. As school personnel have become increasingly aware of the benefits of parental involvement, several programs have been implemented to address this need. In an effort to focus on helping parents feel empowered to make decisions for their children, one group of researchers encouraged parents (with a child or children with disabilities) to participate in a special education pre-service class for future special education teachers (Murray et al., 2013). Following the semester-long course, parents expressed that they had gained more hope for their children. Additionally, this class facilitated a change in parents' views of professionals, and helped them gain confidence in giving input on how to proceed with their child in school and in building more of a trusting relationship with the school professionals (Murray et al., 2013). However, space was limited in this program and it required a great deal of time to achieve these desired results.

School personnel made another significant attempt to invite parents to be involved by providing "coaches" to families with children with special needs (Marchant & Young, 2001). These coaches taught parenting skills within the homes. In turn, the parents took responsibility for using these skills in teaching their child(ren). Parents reported significant changes in their child's ability to follow basic instructions throughout the time the parent "coaches" were involved. Parents also expressed feeling like the time spent during this program deepened their relationship with their child. Furthermore, they felt great support from the "coaches" in developing parenting skills. Lastly, parents commented that they wanted to continue using the skills they had been taught during the program simply because they worked. Although this program was successful, it was time consuming and required a great deal of effort, and thus was difficult to sustain.

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Many schools have also tried to engage parents through "home notes." In one particular study, teachers sent notes home to parents on a monthly basis. These notes gave information to parents regarding a social skill that was being emphasized for the month as part of a school-wide program. The note also elicited parent support by asking them to both teach the skills and give their children opportunities to practice (Adams, Womack, Shatzer, & Caldarella, 2010). Suggested activities were provided, which the family could use to practice the monthly skill. Parents and students both reported that the use of home notes was valuable to their family and effective in generalizing social skills. Most parents also commented that they enjoyed receiving information from the school regarding their student (Adams et al., 2010). This allowed for regular communication between teachers and parents. However, it relied on the student to keep track of the home notes card.

Another platform used to enhance the family-school partnership is the Family Builders Model. This program was designed for students who have specific behavior problems in the classroom. Professionals from the school began by identifying the child's support system, and then they invited all of the identified people to a meeting. This meeting had a specific structure that allowed all involved to problem-solve the harmful behavior. This solution-based model, which invites parental involvement, gave parents the confidence to make informed decisions about concerns regarding their child (Sar & Wulff, 2003). The idea of involving parents in finding solutions is reiterated by Walker et al. (2004). When more responsibility was shifted to the parents, they responded by aiding in their child's academic and social improvement (Walker et al., 2004).

Recommendations have been made for a variety of other shorter, less involved interventions to engage parents. Sprick et al. (2009) suggested providing opportunities for

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contact with families through a "weekly, biweekly or monthly class newsletter or newspaper, or sending families a letter on a regular basis" (p. 57). These communications were beneficial in providing information to families. However, they are one-way and do not provide the parent an opportunity to respond with questions or concerns.

Even though these programs focused on parent-school partnerships are making strides in the right direction, there are still barriers to overcome. In some of these programs, invitations for parent involvement are general, and may influence, but do not predict, parental involvement (Green et al., 2007). These invitations give information but do not provide personalized contact, which would be preferred. Without personalized contacts between parents and teachers, their relationship remains weak. Another concern with a few of these programs is their time-intensive nature as teachers and parents may not have sufficient time to invest. In addition, the traditional way of interfacing with parents through a notebook has been found to be inadequate with "students having behavioral or intellectual problems" (Chen et al., 2007) because teachers may be less likely to be upfront with issues because the student's may read this notebook. This lack of efficiency may affect the relationship between schools and parents, and also the student's success. The traditional ways of interacting can be cumbersome and inefficient for both parties involved. School personnel should find more efficient and effective ways to build these positive relationships with parents.

Technology and parental involvement. School professionals have made an effort in the past to engage parents in education using non-traditional, technology-based modes of communication. Two decades ago, a telephone-based technology was developed and used as a connection between schools and home on a daily basis (Bauch, 1994). This daily message correlated with an increase in parent phone calls to the school. More recently, professionals in

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Taiwan (Chen et al., 2007) have proposed an internet-based interface for students, parents, and teachers called the *E-Homebook System.* This system allows teachers and parents to view a portfolio of an individual student, which includes their attitude on learning and their performance level. According to this information, teachers can individually adjust their teaching strategies. Additionally, there is also a parent portfolio, which shows the parents' use of *E-Homebook*. With both the student and parent information, teachers can create a specific communication strategy for each family. The internet-based interface has the potential to close the communication gap between parents, teachers, and students.

Schools have also attempted to use blogs to create an interface for parents to be involved in teaching certain educational topics (Ozcinar & Ekizoglu, 2013). The parents were able to access this blog at home to engage in learning activities with their child. This blog utilized an animated story about a fictional place to teach topics such as flora, animals, and history. On the blog there were certain guidelines for the parents about how the animations were supposed to be watched. Parents acted as an intermediate receiver for information that was intended for their child. In addition to watching these animations, educational activities (such as coloring, gathering information on a topic, or participating with their parents in real-life experiences) were posted on the blog for the parents and child to do together. Parents then elicited feedback from their child about the activity, and relayed this information back to the teacher. This blog allowed for two-way communication between the teacher and the family, including both parents and children. Findings revealed that both parents and children benefited from knowledge acquisition through this blog. Additionally, parents stated that they felt this opportunity to work with their children allowed them to build a closer relationship as they were able to spend quality time

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together (Ozcinar & Ekizoglu, 2013). Unfortunately, this program did require parents to have ready access to the internet.

Apple's Powerschool is another internet-based interface that invites parental involvement. This and other similar programs have been used throughout the United States. *Powerschool* is a web-based system that makes a child's academic information available to parents via the internet (Wilson, 2005). Through the parental access feature, parents have access to their child's attendance records, assignments, and grades. When this program was used in a school district in the Mid West, attendance increased, test scores, which were once declining steadily, were consistently above the national average, and discipline reports declined (Bird, 2006). Additionally, the usefulness of *Powerschool*¸ specifically that of the parental access features, was studied in a middle school in Northeast Georgia. Parents responded soon after implementation that they felt more satisfied with their communication with the school (Wilson, 2005). This 24-hour a day system seemed to break down some of the barriers of time and accessibility to information. Parents' comments suggested they found this system more effective than the traditional communication they had been receiving. *Powerschool* has been adopted by a number of schools and districts across the United States, but little has been studied regarding the nature and success of this system. One noted downside to this program is that it does not allow for parent input or response directly from the *Powerschool* site.

Overall, both the traditional and technology-based attempts to involve parents have achieved varying levels of success. Parents have engaged more in helping and in making decisions for their child. However, some programs also have only engaged in a one-way communication, not allowing parents the opportunity to respond or give input. Additionally,

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many programs have been inefficient, some have been costly, and others still have been time consuming.

Electronic messaging: Other professions. Other industries have begun to utilize electronic messaging as a tool to communicate with individuals as well as with the parents of the individuals they're working with. Electronic messaging, such as email, has the benefit of being efficient (Collins, McAllister, & Ford, 2007). In the healthcare system, doctors have found it increasingly important to support patients in their ongoing medical needs. Professionals used a texting system to facilitate insulin use with Type-1 diabetes (Franklin, Waller, Pagliari, & Greene, 2006). Participants who were sent daily insulin goals via text messaging showed an increase in self-efficacy regarding their diabetes management. The patients also suggested feeling greater social support during this time. Parents in another study noted behavior changes among their children who were overweight or obese when text messaging was used to convey health information to the family (Sharifi et al., 2013). Texting has assisted individuals with traumatic brain injury in improving their recall of their personal rehabilitation goals (Culley and Evans, 2010). These individuals also remarked that the text prompts notified them to think about both the goals sent in the messages as well as goals not mentioned specifically in the text (Culley & Evans, 2010). Additionally, texting has been used on a national level in the United States with a program called *Text4Baby*, which serves the population of pregnant women or women who have recently given birth. This service provides relevant information to these women via text messaging, three times weekly (Whittaker et al., 2012). Due to the nature of the program, messages were not based on individual needs, nor was there an opportunity to ask questions by text message (although a phone link was embedded in the text messages, which participants could call to ask questions).

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In the mental health field, using electronic messaging has shown benefits among several different groups. It has been found that substance abuse recovery can be more sustainable through the use of text messaging to promote daily self-management and substance abuse education and to communicate social support resources and daily recovery tips (Gonzales, Ang, Murphy, Glick, & Anglin, 2014). Collins et al. (2007) found that daily email contact with an addiction specialist provided accountability in maintaining sobriety and assistance in avoiding complacency. Additionally, texting was used to facilitate recovery for adults recently hospitalized for bulimia nervosa. For 16-weeks, these patients were provided weekly messages to give support, to give cognitive-behavioral therapy strategy reminders, and to fortify symptom improvement (Bauer, Okon, Meermann, & Kordy, 2012). Text messaging provided the support needed to enhance positive recovery outcomes. It also seemed to encourage patients' to seek additional assistance.

Not only has electronic messaging been used with the actual person needing assistance, but it has also been used with parents as well. Parents have described text messaging as more effective than other forms of communication due to its "brevity and immediacy," and well as its ease of use (Sharifi et al., 2013). Parents suggested as well that they preferred this to email or paper communication.

Overall, texting has had a positive impact on behavior change when used by professionals in other fields. Not only this, but those receiving the texts have made positive comments about the usefulness and ease of getting information in this way. People no longer have to dig through extraneous information to find what they need because the focused information is coming directly to them (Sharifi et al, 2013). Participants and parents reported alertness to goals, motivation to act, social support, immediacy, brevity, ability to link to other systems, and

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comfort with and ease of use as several of the benefits they received as they were given a variety of information via text messaging (Ahlers-Schmidt et al., 2012; Culley & Evans, 2010; Franklin et al., 2006; Sharifi et al., 2013). Greater flexibility of time and frequency of delivering services was another mentioned benefit of text messaging (Gonzales et al, 2014).

It is important to note that in many of these studies, patients or parents had a preference on how often or when text messages were sent. In a study where patients with asthma were given text reminders to take their medication, patients discussed enjoying the reminders, but gave feedback that 10 a.m. was an inconvenient time to receive them (Strandbygaard, Thomsen & Backer, 2010). Customizing times when text messages are sent out may improve the desired outcomes. In another study, parents also requested that information be relevant to the age and needs of their child (Sharifi et al., 2013). In this same study, parents commented on their desire to be able to interact with professionals to ask questions regarding their child. Also, a link to more information on a website or sent to a personal email was a desired addition. Lastly, patients in another study have suggested that texts be sent in a non-authoritarian voice, and also requested the ability to engage in two-way communication through the messaging (Hingle, Nichter, Medeiros, & Grace, 2013).

Education: Using texting/technology with students. Schools are also on the cusp of change as they have begun instituting text messaging as a way to help students in a variety of ways. Using technology within the classroom as a way to help students with self-management has recently been studied by Bedesem and Dieker (2014). Using phone messaging as a tool for self-management allows this monitoring to happen across various settings, instead of being restricted to a stationary setting.

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Text messaging has also been used as an extra support for first-year college students who are transitioning into new experiences. Students reported that these text messages prompted them to take action more so than just setting a personal reminder. They also reported that texting was preferred to email as a mode of communication (Jones, Edwards, & Reid, 2009). In addition, texting (and instant messaging) was used at the university level to allow for two-way communication both between student and instructor, and between students (Lauricella & Kay, 2013). At the beginning of the semester, the instructor gave out both his cell phone number and an MSN account name for instant messaging. Students, if they chose, could give their personal information to allow for this communication. Throughout the semester, those who chose to participate were in contact with their instructor via text messaging about once per week. These text messages may have been reminders from teachers, or they may have been questions initiated by the student. Following the semester, students reported appreciating the convenience and immediacy of response from instructors. They also benefited from instructor reminders (Lauricella & Kay, 2013). Text messaging has additionally been used in higher education to support learning of new English language terms (Cavus & Ibrahim, 2009). Findings showed that the repetitive sending of these new terms via text messaging increased the ability of students to learn them. However, students did give feedback that they felt like they would have benefited more from a two-way interactive text messaging system. Overall, texting is a tool that can greatly benefit students in controlling their behavior and in their academic achievement.

Electronic messaging: Acceptance among parents and teachers. Some preliminary research has been done regarding how text messaging will be accepted by teachers and parents as a mode of communication (Ho, Hung, & Chen, 2013). However, as of this time little has been published regarding the implementation of this practice. Ho et al. (2013) found that "perceived

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usefulness and perceived ease of use are key determinants" (p. 113) in whether texting will be utilized in the parent-teacher relationship. Also important is that a teacher's attitude towards using technology will influence their actual implementation. Research suggests that if a teacher finds technology easy to use, and sees the benefit of use, they will be more likely to have that positive attitude (Ho et al., 2013). Research suggests that teachers need to feel support in using technology, and need to feel that it is accessible to them (Teo, 2011**).**

Parents have suggested they would be open to receiving messages between two and seven times per week, and that they would welcome ongoing messages if they continued to be pertinent to their child's needs (Sharifi et al., 2013). Parents also felt that messages would be most effective in creating behavior change if they were directly relevant to the needs of the child (Sharifi et al., 2013). Generally text messaging has been welcomed by parents in receiving information and prompts of things to do. However, there must be consideration of the parent's needs in order for this to be an effective tool in inviting parental involvement in schools. The literacy level and language of the parent must be taken into account in order for texting to be used as an effective communication tool (Ahlers-Schmidt et al., 2012).

Overall, teacher and parent needs must both be considered when implementing technology, specifically texting or email in this case, in the parent-teacher relationship. Teachers must find it easy to use and see its practicality. Parent schedules and ability levels must also be taken into consideration. The more the needs of both stakeholders are taken into account, the more likely it is that electronic messaging will be implemented.

Electronic messaging: New communication to invite parental involvement. Several lines of evidence converge to show the importance of using electronic messaging to support the connection between schools and families. School personnel should also consider the use of

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electronic messaging to communicate with and invite parents to be engaged in their children's education. As has been found in other industries, electronic messaging will also allow for an efficient, cost-effective, and personal interaction between school and home. Akkok (1999) suggested that school-parent communication should be two-way and meaningful for both parents and teachers. I believe electronic messaging will fulfill this role, and that it should serve three functions in the parent-school partnership: (1) Allowing the teacher to report the child's school performance, (2) Providing information to the parent that they can use to praise their child, and (3) Allowing the parent to report back to the teacher. This study will fill the void of information regarding the use of electronic messaging being used in this capacity with parents within the education sector.

Treatment Acceptability/Integrity

When creating interventions for students in the classroom, it is important to ensure ease of use and acceptability for teachers, students, and any others involved. In creating interventions that have these qualities, the chances of teacher's continuing to use these interventions increase. Mitchem and Young (2001) commented that the likelihood of teachers implementing an intervention increases if the intervention is both acceptable and feasible. In a study conducted by Moore et al. (2013), teachers described the self-management intervention with a tactile prompt as being "neither intrusive nor distracting for other students in their classroom" (p. 308). As stated in the aforementioned research, a self-management intervention is effective and poses little infringement on the time of the teacher. In a study where both a teacher-imposed intervention and a self-management intervention were implemented, the teacher suggested that she preferred the self-management intervention as it imposed less time on the teacher and also taught the students to be responsible for their own actions (Shogren, Lang, Machalicek, Rispoli, &

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O'Reilly, 2011). As noted in research conducted by Sutherland and Snyder (2007), when the intervention package was not implemented to students with fidelity, disruptive behaviors increased in comparison to implementation with intervention integrity. However, it is also important to note that during follow-up, the intervention was no longer being used by the teacher, which brings up the question of the long-term acceptability of this intervention package.

In addition to ensuring that teachers will continue to use interventions, importance should also be placed on the integrity with which an intervention is implemented. According to Cooper, Heron, and Heward (2007), treatment integrity involves confirming that the independent variable is implemented as intended. These authors note that, without fidelity, results of an intervention can be inaccurately interpreted. In some situations, this may lead to a conclusion that an intervention was ineffective in producing changes in the dependent variable, when in reality it may have produced an actual effect if executed as prescribed.

Potential Contributions of Study to Research Literature

Students with disruptive behaviors in the classroom may require extra time and support to obtain academic success; they may require Tier 2 as well as Tier 3 interventions. Sometimes teachers have difficulty giving the necessary time and support to students with behavioral problems due to the many demands on their time. Teachers can teach students how to monitor and manage their own behaviors through a variety of techniques at all three tiers of support within multi-tiered systems (Marchand-Martella et al., 2007; McIntosh et al., 2009; Thornton, 2012). Research also supports the use of peers to support struggling students (Gilberts, Agran, Hughes, & Wehmeyer, 2001; McCurdy & Cole, 2014). Studies have combined both peer-monitoring and an individual's ability to monitor themselves to improve socially appropriate behaviors within a classroom (Christensen et al., 2004). However, little research has

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investigated the involvement of parents in a classroom-based self-management package as a means of support for their child. These studies seeks to add parents to the self-management package to increase the intensity of the intervention for students who are less-responsive to both Tier 1 and Tier 2 interventions. Additionally, these studies provide examples of how a Tier 3 intervention can be implemented within the general education classroom, allowing students to continue to access the general education curriculum.

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APPENDIX B: CW-FIT Permission Form

PARENT PERMISSION

Title: Class-wide Function-Based Intervention Teams

Dear Parent,

Introduction

Paul Caldarella, Ph.D. and K. Richard Young, Ph.D., researchers at Brigham Young University (BYU), are partnering with researchers at the University of Kansas on an intervention study of Class-wide Function-Related Intervention Teams (CW-FIT). Your child's classroom teacher is participating in this study using CW-FIT to teach on task behavior to your child's class in the fall or spring of the school year. The following information is provided for you to decide whether you wish for your child to participate in the present study.

The purpose of this project is to assist teachers in developing and implementing behavior interventions for classrooms and small groups or individual students who may be at risk for emotional or behavioral problems. Your child has been invited to participate by his/her classroom teacher as a candidate for early intervention due to classroom behaviors of concern. These behaviors include off-task classroom behaviors or attention problems that interfere with learning. We are requesting your permission to assist the teacher in assessing your child's progress and providing behavioral interventions.

Procedures

As part of this study, your child's teacher will be implementing CW-FIT with all students in her/his class during regular academic periods. CW-FIT is based on best practices, and includes: 1) individual or class lessons on classroom/school rules, 2) students receiving positive feedback (points) for appropriate classroom behavior, and 3) students learning to self-monitor and achieve classroom goals. Interventions are implemented for the individual child and for the whole class as a group. BYU personnel will train and assist teachers in the implementation of CW-FIT. Your child may be provided more individualized assistance in these three areas. The options for student consequences for inappropriate behaviors during the study are the same as are currently used for all students at your child's school (e.g., loss of privileges, office referrals). CW-FIT will be implemented during regular school hours and no additional time commitment will be required.

For research purposes, individual assessments regarding your child's behavior will be collected using teacher rating scales, teacher interviews, and a review of behavior and academic records, which may include academic assessments, individualized educational programs (IEPs), and office discipline records. In addition, BYU personnel will conduct direct observations of student on task performance and inappropriate behaviors. A brief academic measure (approximately 20-30 minutes in duration) will also be completed with your child in the fall and in the spring by BYU personnel for research purposes.

Risks/Discomforts

There may be minimal risks for students exhibiting behavior problems; these students will receive more individualized interventions (e.g., self-management cards) possibly resulting in students

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feeling like they are being treated differently. However, in past research studies, such risks have not been observed and we will also be working individually with other children in the classroom.

Benefits

There are no direct benefits to you or your child, though prior studies of CW-FIT have shown improved student learning, classroom behavior, and social interactions with peers and teachers. The results of this study will help to further validate CW-FIT.

Compensation

There is no compensation to you or your child for agreeing to participate in this study.

Confidentiality

All information gathered will be coded with an ID number and no identifying information associated with you or your child will be shared with other researchers or included in any published or presented reports. Any information gathered will be securely stored and only research personnel will have access to the information. Your permission allows a copy of all information obtained from assessment and interventions to be provided to researchers at BYU and the University of Kansas. This information will be kept confidential in secured files and on password protected, encrypted computers. All school policies on confidentiality will be followed. Information from assessments or observations by BYU staff will be shared in verbal or written reports with your child's teacher who is involved in this study. The only persons in your child's school who will have limited access to your child's study information are your child's teachers. You have the right to contact your child's teacher who will be able to obtain relevant study information on your child for you to review. Any information about non-research students will remain at your child's school and researchers will not have access to that information.

Participation

Your child's participation in this study is voluntary. You have the right to withdraw your child from this study at any time, which means that researchers would not collect any information on your child, though CW-FIT would still be occurring in your child's classroom. Refusal to participate or withdrawing from this study will not affect your child's status or standing at the school in any way.

Questions about the Research

If you have any questions regarding this study, you may contact Dr. Paul Caldarella at paul_caldarella@byu.edu or by calling 801-422-5081 or Dr. K. Richard Young at richard_young@byu.edu or by calling 801-422-2277.

Questions about your Rights as Research Participants

If you have any questions with regards to your rights as a participant, you may contact the IRB Administrator, Brigham Young University, A-285 ASB, Provo, UT 84602; 801-422-1461 or irb@byu.edu.

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Statement of Consent

I have read, understood, and received a copy of the above consent and desire of my own free will to allow my child to participate in this study. I have discussed this with my child and given my child the opportunity to decline to participate.

_____	_____	_____
Print Child's First and Last Name	Child's Signature	Date
_____	_____	_____
Print Parent's First and Last Name	Parent's Signature	Date

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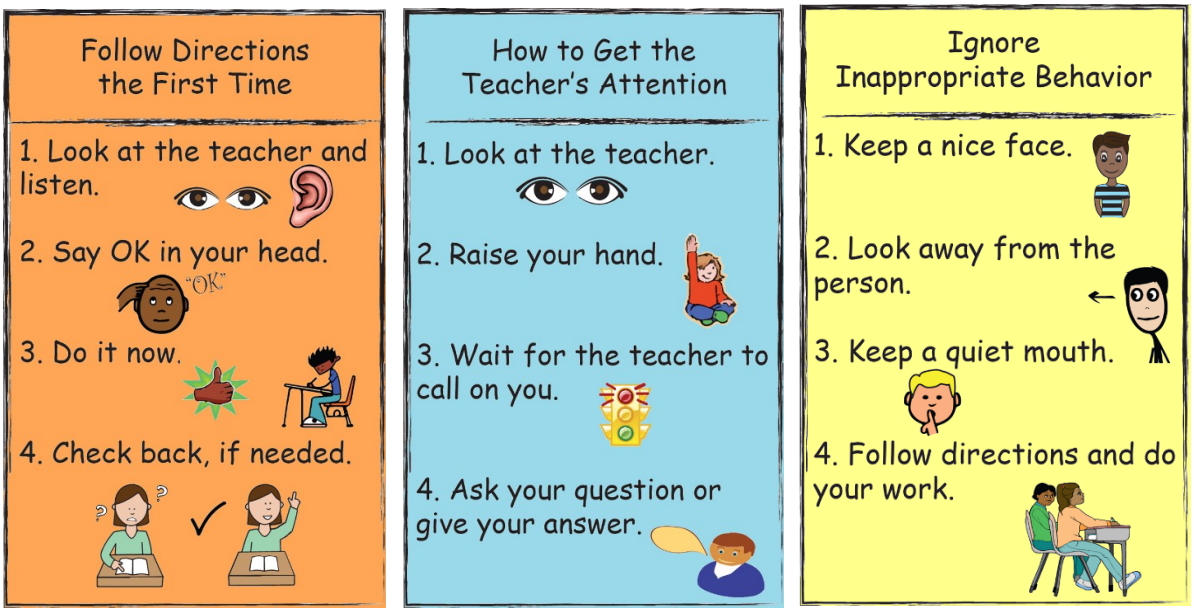
APPENDIX C: CW-FIT Materials

Social Skills/CW-FIT Rules Posters



CW-FIT Classroom Point Sheet

CW-FIT POINTS								
DATE:	REWARD:				GOAL:			
TEAMS:	Timer Beeps:	1	2	3	4	5	6	7
POINTS:								

1. How to Get the Teacher's Attention
2. Follow Directions the First Time
3. Ignore Inappropriate Behavior

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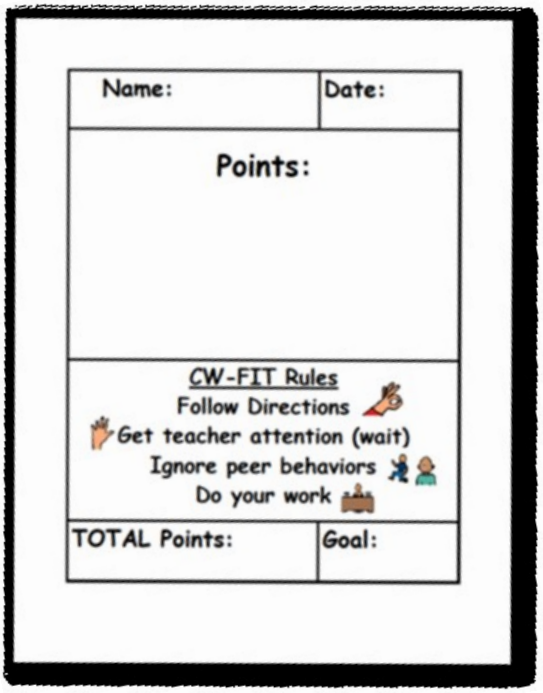
APPENDIX D: Tier 2 Tracking Form



Name:	Date:
Points:	
CW-FIT Rules Follow Directions Get teacher attention (wait) Ignore peer behaviors Do your work	
TOTAL Points:	Goal:

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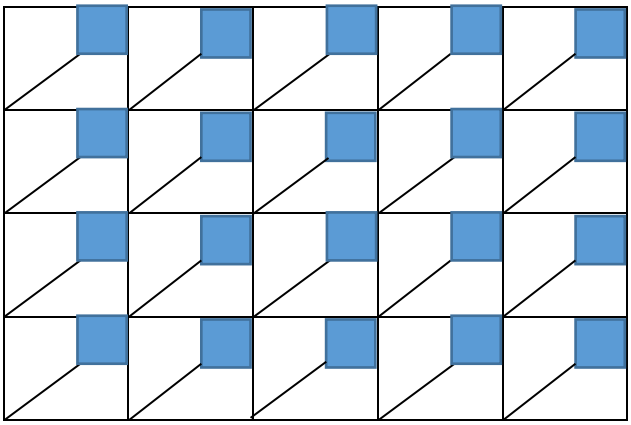
APPENDIX E: Self-Management Cards

Self-Management Card (Shane)

Name: _____ Date: _____

How did I do?



POINTS
Y Y = 2
N N = 1
Y N = 0
N Y = 0

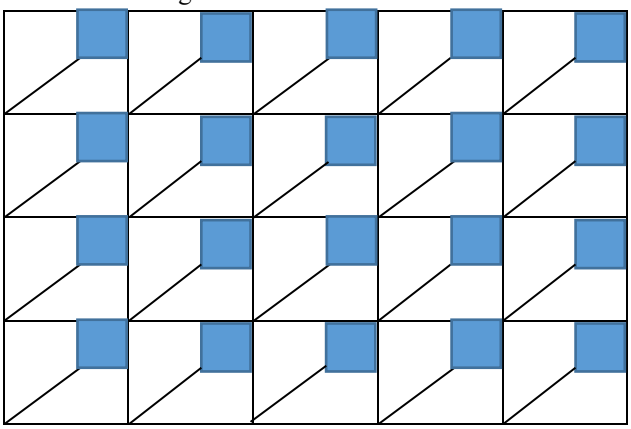
Total: _____

- Worked on my assignment
- Quiet, in seat, chair at desk
- ***Eyes on teacher as she talked***
- Hands to self

Self-Management Card (Ricardo)

Name: _____ Date: _____

How am I doing?



POINTS
Y Y = 2
N N = 1
Y N = 0
N Y = 0

Total: _____

- Worked on my assignment
- Quiet, in seat, chair at desk
- ***Appropriately got my teacher's attention***
- Hands to self

*It is important to note that the only difference between these cards is one goal, which is bolded and italicized on this page.

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APPENDIX F: Target Student Training Script

Peer-Matching Self-Management

Student Training Script – Small Group Booster Lesson

(1) "Today we are going to start a new self-management program of the CW-FIT game."

"Let's review what "self-management" means.

"Self-management means that students take more responsibility for their own behavior.

This helps students be more "in charge," and to manage their behavior other times."

The reason it is important to learn to manage what you say and do is that it can help you make good choices and complete your assignments."

"This self-management program also involves a peer rating your behavior. This means that every time you mark on your card, your peer will also mark. You will be trying to match whether they say you did or did not follow your goals during that time. There will be a place for both you and your peer to mark your points on the card.

"There are 4 parts to self-management:

1. You will decide if you are following your goal.
2. You will decide if you should give yourself a point on the self-management card.
3. Your peer will then decide if you followed through on your goal.
4. They will decide if you should be given a point on your self-management card as well.

(2) "Let's review your goals for your self-management card."

"Read each goal with me" (*use the self-management card*):

Appropriately work on my assigned work

Got teacher attention appropriately (4th)/Quietly watched the teacher as she talked in front of the class (3rd)

Quiet and in my seat with my chair at my desk

Kept my hands to myself

Give Examples and Non Examples for each of the goals. (See page 3 for these)

(3) Okay, now that we have examples of the behaviors we're looking for, let's learn about the self-management cards."

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Hand out the self-management card to the student.

"You will use these EVERY time the class plays CW-FIT

WRITE your name and the date; READ your skills on your card, as well as the CW-FIT skills."

"Your peer will be holding on to the timer for you. Each time the timer goes off your peer will tell you to mark the card. If you are following the skills, then you will give yourself a "Y". If not, you will give yourself an "N".

"Then, hand your card to your peer to have them mark their point. They will give you a brief explanation of why they did or did not give you a point. DO NOT ARGUE WITH THEM!

"At the end of CW-FIT, your teacher will come over, and together you will count your points and write your total. She will also tell you if you earned a reward with the class (to start you get a reward if you get 10/25 points), and whether you'll earn a reward at home.

"Your teacher will save your card for the CW-FIT staff and will send a message home to your parent to let them know how you did, and the points that you earned."

Conduct/Personalize roles plays for each class/targets (see page 4)

(4) "Now let's practice using some of the examples we have already talked about above. Do you have questions?

Practice using the self-management card with the student. Do a lot of coaching throughout the process.

(5) "If the teacher forgets any day, remind her, OK?"

(6) Following this training and the training with the peer, bring both together to do training together, and then practice in the classroom.

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Goal Review Examples:

1. Appropriately working on my assigned work means "working directly on the assignments I am given."

If you are appropriately working on assignments you will always be "doing your work"

Math:	Model doing the problems on a worksheet
	Model looking at the board/overhead
Reading:	Model working on a worksheet associated with a book
	Model reading quietly
	Model working on a computer program

(Non-examples based on observations: Looking around the classroom, coloring or drawing on assignment)

**Repeat examples and non-examples for all skills being reviewed once more to ensure understanding.*

2. Appropriately Get Teacher Attention means "raising your hand to be called on to talk with the teacher" (JUST FOR 4th GRADER).

Reading:	Model raising your hand and waiting for the teacher to call on you
	Model working without talking to peers

(Non-examples based on observations: Calling the teacher's name while waiting, calling out questions or answers while raising your hand, calling out to the teacher, Getting up to do what you want to without getting teacher permission)

3. Watching the teacher as she talks in the front of the class means "having my eyes on the teacher as she is teaching." (JUST FOR 3rd GRADER)

If you are watching the teacher as she talks in the front of the class you will always be "on task"

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Math: Model giving good eye contact to the teacher

(Non-examples based on observations: Looking out the window, looking at peers, reading something else at my desk, walking around the classroom to get something)

4. Quiet and in my seat means I have all four legs of my chair on the ground and I am not making noise with my mouth, body or other body parts

If you are quiet and in your seat you will always be "doing your work"

Math/Reading: Model how to sit correctly in the chair

Model working without talking to peers

(Non-examples based on observations: Chatting with peers, rocking back and forth in chair, leaning back on a peer's desk, making mouth noises)

5. Keeping my hands to myself means "no touching others with my hands, feet or any other object."

Math/Reading: Model sitting at my seat with my arms on my desk

Model being in line with space between my peers and me.

(Non-examples based on observations: Braiding a peer's hair, poking a peer, hitting a peer, tapping a peer with a pencil)

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Role Play Scenarios

1. You headed to the reading center to start your first center quickly. After working at the reading center for a few minutes you started talking to your friend and talk for one minute before getting back to your reading.
   (Mark No)
2. The teacher is in the front of the class explaining your next math assignment. You look quickly at your peer, but then re-focus and give good eye contact to your teacher.
   (Mark Yes)
3. You sat at your desk, thumbed through the papers during the time you were to be working on your math assignment.
   (Mark No)
4. You talked to your neighbor about the math assignment during the time you were working on assignments.
   (Mark Yes)
5. You were rocking your chair back and forth while the teacher was in the front of the class giving instruction.
   (Mark No)
6. Your teacher asks you to get into your reading center. You go sit down and begin reading, but also spend time braiding your peer's hair.
   (Mark No)
7. You started your first center quickly, were on the computer working the whole time without bothering or talking to any of your peers.
   (Mark Yes)
8. You are making loud noises with your mouth while the teacher is talking, but you are giving good eye contact.
   (Mark No)
9. You are looking sharp and in learning position, but look to one of your peers when he makes a loud noise behind you. After a few seconds of looking back, you get back to the learning position.
   (Mark Yes)

*Need 100% accuracy on at least 5 in a row to move forward

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APPENDIX G: Peer Partner Training Script

Peer-Matching Self-Management

Peer Training Script – Small Group Booster Lesson

(1) "Today we are going to teach you how to assist a peer in his self-management program as part of the CW-FIT game."

"Let's review what "self-management" means.

"Self-management means that students take more responsibility for their own behavior.

This helps students be more "in charge," and to manage their behavior other times."

"The reason it is important to learn to manage what you say and do is that it can help you make good choices and complete your assignments."

"You will be helping this student to develop these skills as part of this program."

"This self-management program involves you rating your peer's behavior. This means that every time your peer marks on the card, you will also mark it. He will be trying to match whether you say he did or did not follow his skills during that time. Please be honest on whether or not your peer has followed the skills. This will assist him in learning to self-manage his behavior."

"There are 4 parts to his self-management program:

1. Your peer will decide if he is following his skills
2. He will decide if he should give himself a "Y" or "N" on the self-management card.
3. You will decide if your peer followed his skills.
4. You will decide if they should be given a "Y" or "N" on his self-management card.

(2) "Let's review the skills for your peer's self-management card."

"Read each skills with me" (*use the self-management card*):

Appropriately work on my assigned work
Got teacher attention appropriately (4th)/Watched the teacher as she talked in front of the class (3rd)
Quiet and in my seat with my seat at my desk
Kept my hands to myself

Give Examples and Non Examples for each of the goals. (See page 2-3 for these)

(3) Okay, now that we have examples of the behaviors we're looking for, let's learn about how you can use the self-management cards."

Hand out the self-management card to the peer.

"You will use these EVERY time the class plays CW-FIT

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"Your peer will write their name and the date; REVIEW their skills on their card as well as the CW-FIT skills with the class."

"You will be holding on to the timer for your peer. Each time the timer vibrates you will tell him to mark the card. If he is following the skills, then he will give himself a "Y". If not, he should give himself an "N".

"Then, he will hand you his card, and you will mark his card. You will then give him a brief explanation of why you marked "Y" or "N". He should **not** argue with you.

"At the end of CW-FIT, your teacher will come over, and work with your peer to tally up his points. You can talk to your teacher about any issues with mis-marking or if your peer changed any markings."

Conduct/Personalize roles plays for each class/targets (see page 5)

(4) "Now let's practice using some of the examples we have already talked about above so you know how to correctly mark for your peer. Do you have questions?

(5) "If the teacher forgets any day, remind her, OK?"

(6) Following this training and the training of the target student, bring both together to do training together, and then practice in the classroom.

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Goal Review Examples:

1. Appropriately worked on assigned work means "working directly on the assignments given."

Math: Model doing the problems on a worksheet

Model looking at the board/overhead

Reading: Model working on a worksheet associated with a book

Model reading quietly

Model working on a computer program

(Non-examples based on observations: Looking around the classroom, coloring or drawing on assignment)

**Repeat examples and non-examples for all skills being reviewed once more to ensure understanding.*

2. Appropriately get teacher attention means "raising your hand to be called on to talk with the teacher" (JUST FOR 4th GRADER).

Reading: Model raising your hand and waiting for the teacher to call on you

Model working without talking to peers

(Non-examples based on observations: Calling the teacher's name while waiting, calling out questions or answers while raising your hand, calling out to the teacher, Getting up to do what you want to without getting teacher permission)

3. Watching the teacher as she talks in the front of the class means "eyes on the teacher as she is teaching." (JUST FOR 3rd GRADER)

If you are watching the teacher as she talks in the front of the class you will always be "on task"

Math: Model giving good eye contact to the teacher

(Non-examples based on observations: Looking out the window, looking at peers, reading something else at my desk, walking around the classroom to get something)

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4. Quiet and in my seat means "all four legs of the chair on the ground with the chair by the desk and not making noise with my mouth, body or other body parts"

If you are quiet and in your seat you will always be "doing your work"

Math/Reading:	Model how to sit correctly in the chair
	Model working without talking to peers
	Model looking sharp/learning position

(Non-examples based on observations: Chatting with peers, rocking back and forth in chair, leaning back on a peer's desk, making mouth noises)

5. Keeping my hands to myself means "not touching others with my hands, feet or any other object."

Math/Reading:	Model sitting at my seat with my arms on my desk
	Model being in line with space between my peers and me.

(Non-examples based on observations: Braiding a peer's hair, poking a peer, hitting a peer, tapping a peer with a pencil)

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Role Play Scenarios

1. Your peer heads to the reading center to start his first center quickly. After working at the reading center for a few minutes he starts talking to you and tries to talk for a minute before getting back to his reading.
   (Mark No)

2. The teacher is in the front of the class explaining your next math assignment. Your peer looks quickly at his friend, but then re-focuses and give good eye contact to your teacher.
   (Mark Yes)

3. Your peer sat at his desk and thumbed through papers during the time he was to be working on his math/reading assignment.
   (Mark No)

4. Your peer talked to you about the math assignment during the time he was working on assignments.
   (Mark Yes)

5. Your peer was rocking his chair back and forth while the teacher was in the front of the class giving instruction.
   (Mark No)

6. Your teacher asks the class to get into the reading centers. Your peer goes to sit down and begin reading, but also spends time braiding a peer's hair.
   (Mark No)

7. Your peer starts the first center quickly, and was on the computer working the whole time without bothering or talking to any of his peers.
   (Mark Yes)

8. Your peer is making loud noises with his mouth while the teacher is talking, but he is giving good eye contact.
   (Mark No)

9. Your peer is looking sharp and in learning position, but looks to one of his peers when he makes a loud noise behind you. After a few seconds of looking back, he get back to the learning position.
   (Mark Yes)

*Practice will happen until the peer is 100% accurate.

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APPENDIX H: Teacher Procedures

Teacher Procedures

Tier 3 Intervention:

Your student will be participating in a more intensive self-management intervention in conjunction with the CW-FIT program. He will be rating his behavior and tracking points on a self-management card. He will work with a peer and the peer will have a timer. This timer will go off every 2-3 minutes. When the timer goes off, the student will mark a "y" or "n" on the card, and then their per will also mark a "y" or "n" based on his/her observation of the student's behavior during the time interval. The peer matcher will also give a short verbal explanation for their mark before getting back to work. The student will earn points as outlined on the attached card.

Daily

1. As CW-FIT is beginning, make sure the student and his peer are prepared with the self-management card and the timer.

2. Have a short discussion with student after CW-FIT, giving him praise for his good behavior during the class period or encourage him to do better tomorrow.

3. Count up his points and give him a reward based on his points. Also, give him the reward he has earned along with the class (if applicable).

4. Text or email his parents before the school day is out to give them a report on how he did, how many points he earned, and what he can be praised and reinforced for at home.

5. When the parent replies via text or email with what they did with the child at home, forward the message thread to Ashley (ashley.lower@gmail.com).

Other

1. Prior to the implementation, let the class know that there will be some students who will be working on special work. They may be interacting and talking more with one another, but the other students are to ignore them and focus on their own work so the students can work on their special assignment.

2. Let Ashley know if the peer is struggling with the matching process.

3. Let Ashley know if there are any issues with parent response.

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APPENDIX I: Parent Procedures

Parent Information for CW-FIT Self-Management Program

This program will be implemented, in your son's classroom, in conjunction with the CW-FIT program for which you have approved your son's participation. He will be using a self-management card to keep track of how he is doing on individualized behavior goals. Every 2 to 3 minutes, he will reflect on his behavior, and mark either yes or no on his card based on how well he reached the behavior goals. A peer partner will mark the card based on his/her observation of your son's behavior. Your son and the peer will compare their yes/no ratings, and the peer will mark how many points your son has earned for that time interval. The peer will also praise your son's good behavior and/or encourage improved performance for the next time interval. Your son will earn points as outlined on the attached card.

At the end of each CW-FIT session, his teacher will total his points, praise your student's good behavior and provide your son a reward based on the total number of points earned. Each day the teacher will message you the number of points your son earned with a brief comment about your son's performance. When your son comes home from school, you will discuss his performance in the CW-FIT class, praise him for his progress and good behavior, provide your reward for his points, and encourage him to continue his daily improvement. Then, you will send a brief report back to the teacher on your daily interaction. Following is a step by step list of procedures for you and your son's teacher, with examples:

Procedure for Parents

1. Teacher will send you an email or text explaining how your son did with the self-management program and the number of points he received.
2. When your son gets home from school, either praise him or give him an encouraging statement for the next day based his teacher's report for the day.
    a. Praise Example: "Congratulations on receiving your points today. It sounds like you did a great job of raising your hand to ask the teacher questions."
    b. Encouragement Example: "Hey, it sounds like you had a bit of a rough day because you had your chair pushed back against the wall most of the time. You can do better tomorrow!"
3. If he achieved the number of points he was supposed to earn, he will receive something from you to reinforce his behavior (i.e. extra one-on-one time with you, Legos, a small treat, etc.).
4. Following this interaction, you will be asked to send a quick email or text back to his teacher reporting whether you used praise or encouragement, and how he reacted to the reinforcement or no reinforcement.

    In addition, the message should include what he was given as a reinforcer (if applicable). If he was given money or tokens in the place of an actual item, please also include how this was given to him and where it is being stored. When he does spend the money, please send a message to the teacher letting her know when this happens and what he bought.

*For the purposes of our research, the email or text thread will provide data and thus will be shared with the researchers running the project.

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APPENDIX J: Treatment Integrity Checklist

Treatment Integrity Checklist

Student Name:_____ Date: _____
Observer:_____

Target student gets SM Card					
Peer gets timer					
Target student puts his name & date on the card					
Target student and peer review goals on the card					
Peer starts timer					
Peer prompts student to mark card at the end of the interval					
Target student marks the card					
Peer marks card after student					
Peer and student check if they match					
Peer records points					
Peer praises student or encourages student for the next interval					
At the end of the session, the student gives the card to the teacher and total points are recorded					
Teacher praises student progress or encourages student for next session					
Student keeps the card as a token to exchange for the reinforcer (to be given at a later time)					

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APPENDIX K: Social Validity Questionnaires

Social Validity Questionnaire: Student

(1) Did you like the self-management program?

☹	😐	☺
Not at all	A little	A lot

Comments: (What did you like the most? What did you like the least? Would you want to do it again?)

(2) Did you like the self-management card?

☹	😐	☺
Not at all	A little	A lot

Comments:

(3) Did you like matching with a peer?

☹	😐	☺
Not at all	A little	A lot

Comments:

(4) Did you like earning rewards in class?

☹	😐	☺
Not at all	A little	A lot

Comments:

(5) Did you like earning rewards at home?

☹	😐	☺
Not at all	A little	A lot

Comments:

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(6) Did you like discussing how you did in school with your mother?

☹ Not at all | 😐 A little | ☺ A lot

Comments:

(7) Did using the self-management program help you to work quietly on your assignments?

☹ Not at all | 😐 A little | ☺ A lot

Comments:

(8) Did using the self-management program help you to sit quietly in your chair at your desk?

☹ Not at all | 😐 A little | ☺ A lot

Comments:

(9) Did using the self-management program help you keep your hands to yourself?

☹ Not at all | 😐 A little | ☺ A lot

Comments:

(10) Did using the self-management program help you keep your eyes on your teacher as she talked?

☹ Not at all | 😐 A little | ☺ A lot

Comments:

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Social Validity Questionnaire: Peer Partner

(1) Did you like being involved in helping your peer with the self-management program?

☹	😐	☺
Not at all	A little	A lot

Comments:

(2) Do you feel like the self-management program helped your peer to sit quietly in his chair at his desk?

☹	😐	☺
Not at all	A little	A lot

Comments:

(3) Do you feel like the self-management program helped your peer to keep his hands to himself?

☹	😐	☺
Not at all	A little	A lot

Comments:

(4) Do you feel like the self-management program helped your peer work quietly on his assignments?

☹	😐	☺
Not at all	A little	A lot

Comments:

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(5) Do you feel like the self-management program helped your peer to quietly listen to the teacher as she talked?

☹	😐	☺
Not at all	A little	A lot

Comments:

(6) How well did you like each part of the self-management program?

a. Self-management card

☹	😐	☺
Not at all	A little	A lot

Comments:

b. Matching

☹	😐	☺
Not at all	A little	A lot

Comments:

c. Using the timer

☹	😐	☺
Not at all	A little	A lot

Comments:

d. Getting a reward

☹	😐	☺
Not at all	A little	A lot

Comments:

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Social Validity Questionnaire: Teacher

(1) How disruptive to the class was the student's behavior?

1	2	3	4	5
Not Disruptive	Minimally Disruptive	Average (same as most in class)	Somewhat Disruptive	Very Disruptive

Comments:

(2) Were the behavior problems disruptive enough to merit the use of this self-management program?

Yes No

Comments:

(3) How helpful was the self-management card in improving the student's on task behavior?

1	2	3	4	5
Not Helpful	Minimally Helpful	Average	Somewhat Helpful	Very Helpful

Comments:

(4) How helpful was the peer partner in improving the student's on task behavior?

1	2	3	4	5
Not Helpful	Minimally Helpful	Average	Somewhat Helpful	Very Helpful

Comments:

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(5) How helpful was the parent involvement in improving student behavior?

1	2	3	4	5
Not Helpful	Minimally Helpful	Average	Somewhat Helpful	Very Helpful

Comments:

(6) How helpful was the daily electronic communication process?

1	2	3	4	5
Not Helpful	Minimally Helpful	Average	Somewhat Helpful	Very Helpful

Comments:

(7) How helpful were the school/home rewards in improving student behavior?

1	2	3	4	5
Not Helpful	Minimally Helpful	Average	Somewhat Helpful	Very Helpful

Comments:

(8) How satisfied are you with the overall results of the self-management program?

1	2	3	4	5
Not Satisfied	Minimally Satisfied	Average	Somewhat Satisfied	Very Satisfied

Comments:

(9) Was the time and effort to implement this self-management program worth the results?

Yes No

Comments:

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Social Validity Questionnaire: Parents

(1) Did you feel that your son's behavior at school was serious enough to justify the use of this self-management program?

1	2	3	4	5
Not Justified	Minimally Justified	Unsure	Somewhat Justified	Very Justified

Comments:

(2) How important was the daily electronic communication with the teacher?

1	2	3	4	5
Not Important	Minimally Important	Average	Somewhat Important	Very Important

Comments:

(3) How helpful do you feel that matching by the peer partner was in this self-management program?

1	2	3	4	5
Not Helpful	Minimally Helpful	Average	Somewhat Helpful	Very Helpful

Comments:

(4) How helpful was the use of the self-management card by your son?

1	2	3	4	5
Not Helpful	Minimally Helpful	Average	Somewhat Helpful	Very Helpful

Comments:

(5) How helpful was the reinforcement system at school?

1	2	3	4	5
Not Helpful	Minimally Helpful	Average	Somewhat Helpful	Very Helpful

Comments:

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(6) How helpful was the reinforcement system implemented at home?

1	2	3	4	5
Not Helpful	Minimally Helpful	Average	Somewhat Helpful	Very Helpful

Comments:

(7) How helpful was the time discussing how your son did at school as part of the program?

1	2	3	4	5
Not Helpful	Minimally Helpful	Average	Somewhat Helpful	Very Helpful

Comments:

(8) How satisfied are you with the results of the self-management program?

1	2	3	4	5
Not Satisfied	Minimally Satisfied	Average	Somewhat Satisfied	Very Satisfied

Comments:

(9) Was the time and effort asked of you for this intervention worth the results?

Yes No

Comments:

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