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Tier II Behavioral Intervention: A Direct Comparison of Two Versions of Class Pass

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A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of

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Abstract of the Dissertation

Disruptive behaviors are some of the most difficult behaviors for teachers to address in schools. They can take multiple forms in the classroom, and can impact the student displaying them, as well the rest of the learning environment in terms of academic engagement. Disruptive behaviors are believed to be displayed by students for the purpose of attaining social positive and social negative reinforcement. These behaviors also tend to fall into a higher level of need based on MTSS/PBIS tiered support models. Typically, disruptive behaviors fall within Tier II level of need, where universal supports are not enough, but intensive, individualized supports are not necessary. Tier II is most efficient when implemented using a standard protocol approach, which requires one to two interventions in this tier being trained in most staff. One such intervention is Class Pass, a targeted intervention which gives students daily break passes that they can exchange for short breaks from academic work at times of their choosing during the school day. In its four applications in the literature, two versions of Class Pass exist, one which includes the component of saving unused passes to exchange for backup reinforcers, and one which excludes this component. All applications have shown to decrease students' disruptive behaviors and increase academic engagement. To date, no research has compared the two versions of Class Pass. This study directly compared both versions of Class Pass to attempt determine which version was more fit for a standard protocol approach to Tier II, based on their impacts on disruptive behaviors and academic engagement.

Chapter 1

Introduction

Teachers have the taxing responsibility of ensuring all students progress through their education, while maintaining a classroom environment that is conducive to learning (Emmer & Sabornie, 2015). They encounter many challenges in fostering students' learning, but some of the most difficult are the increasingly intense disruptive behaviors that students are presenting in the classroom (Cancio et al., 2014). Teachers have cited disruptive behaviors among one of their greatest concerns for the classroom environment (Rose & Gallup, 2007). Disruptive behaviors, such as calling out, interrupting, talking to classmates, being off-task, noncompliance, and behavioral outbursts are difficult for teachers to manage (Proctor & Morgan, 1991). Not only is it difficult to manage these disruptive behaviors in an appropriate manner, but the attempt to stop them takes the teacher away from instructing the entire class. That is, the student displaying disruptive behaviors misses instruction and distracts the teacher from teaching the rest of the class (Mishra, 1992; Walker et al., 2004). In addition, students who consistently display disruptive behaviors often face disciplinary action, which frequently removes them from the learning environment (Stage, 1997). In classrooms where disruptive behaviors are displayed often, the learning environment is negatively affected as students do not progress through their education as they should (Gresham, 2004). Academic engagement tends to be jeopardized for all students in classrooms where disruptions are a problem, but especially for the students that are engaging in these behaviors (Evertson & Weinstein, 2006; Shinn et al., 1987).

Academic engagement is vitally important and has been linked to many positive outcomes for students. Higher levels of academic engagement have been associated with better academic achievement, increased motivation to work toward educational goals, perseverance in working toward educational goals, and a greater sense of self-efficacy. It also contributes to positive long-term outcomes, such as greater occupational attainment and socioeconomic status (Abbott-Chapman et al., 2014; Lei et al., 2018). Academic engagement is defined in many ways throughout the literature, but it can be summed up as a student's investment, effort, participation, and persistence toward school and learning (Alrashidi et al., 2016). Students being academically engaged is important for positive student outcomes and ultimately, students who display disruptive behaviors tend to have deficits in their academic engagement, resulting in lack of these positive outcomes (Campbell et al., 2013). However, it is important to note that disruptive behaviors in the classroom environment serve some sort of function or purpose for the student displaying them. The basic functions of human behavior typically include social positive reinforcement, social negative reinforcement, automatic positive reinforcement, and automatic negative reinforcement (Miltenberger, 2008). Of the four main behavioral functions, two seem to be most related to disruptive classroom behaviors; social positive reinforcement and social negative reinforcement (Collins et al., 2016; Cook et al., 2014).

Social positive reinforcement refers to another individual providing access to attention, activities, or tangible items contingent upon a behavior. Social negative reinforcement refers to another person controlling the termination of an aversive stimulus or task as a result of a behavior (Miltenberger, 2008). Therefore, when a student is being

disruptive in the classroom, it is probable that they are seeking peer or adult attention, a different activity or item, or trying to escape or avoid the current academic task. Understanding these functions of behavior is necessary to develop effective interventions that successfully address the target behaviors.

When the function of a student's disruptive behavior is maintained by escape or avoidance, it typically means the student displays the behavior to avoid their classroom responsibilities, like assignments or academic tasks, or to be sent out of the classroom (Cook et al., 2014; McIntosh et al., 2008). Students will continue to exhibit disruptive behaviors when presented with unwanted tasks and activities until they achieve their goal of avoiding work or escaping the classroom, even if that means facing disciplinary action (Sugai & Horner, 2002). When their disruptive behavior is reinforced by escape or avoidance, students will continue to be disruptive if the reinforcement they seek is available (O'Neill et al., 1997). Alternatively, when a student's disruptive behavior is maintained by peer or adult attention, it typically means that they engage in the behavior because the teacher, other adults, or peers provide attention by reacting to the disruptive behavior. Students will continue to display disruptive behaviors until an adult or peer reacts to what they do or say, whether the reaction they receive is good or bad (Hawkins & Axelrod, 2008; McIntosh et al., 2008). Finally, when disruptive behavior is maintained by gaining access to a tangible item or preferred activity, it often means that the student will engage in the behavior because it results in gaining one of these things. For example, if displaying disruptive behaviors results in the student being told to go to a different room to talk to another staff member, this could be a preferred activity they gain from

being disruptive. They will continue to engage in the behavior if this reinforcer is available. Treating disruptive behaviors maintained by these functions has proved to be challenging because gaining tangibles or access to activities, gaining attention, or escaping an aversive task can be so motivating for students.

Fortunately, strategies and empirically supported interventions exist specific to the school setting which can address these functions underlying students' behavioral problems. These strategies and interventions can be more general and applicable to whole classrooms or schools (e.g., social emotional learning programs) or they can be applicable to small groups or individual students (e.g., token economy; Radley & Dart, 2019). Ultimately, it depends on severity of behavioral issues and student's level of need. Typically, students who continually display disruptive behaviors that need intervention are placed in the Tier II level of a multi-tiered system of supports (MTSS; Walker et al., 1996). MTSS seeks to categorize a student's level of need, while promoting a safe and constructive learning environment for all students. The specific form of MTSS which was established to address behavioral problems of students in schools is known as Positive Behavioral Interventions and Supports (PBIS; Sugai et al., 2000; Sugai & Horner, 2010). PBIS operates with the use of MTSS tiers that are based on severity of student's behavioral problems (Sugai et al., 2000).

This tiered method of service delivery for social, behavioral, and emotional issues has been proven to promote positive behaviors and reduce disruptive, externalizing behaviors in school (Sugai & Horner, 2009). As with all MTSS, at the universal, Tier I level, PBIS typically involves the teaching students explicit, school-wide behavioral

expectations (Sugai & Horner, 2010). These are often three to five, brief, positively connotated, broad statements which can be applied to numerous settings and situations in schools (Bradshaw et al., 2010). For example, “be safe, be cooperative, be kind, and be respectful” can be adopted by a school, and teachers can provide these statements to demonstrate specific examples of each in various settings (Sugai & Horner 2010). The underlying hope is that most students, roughly 80-90% (Stoiber, 2014), will behave as expected given these expectations in a PBIS system (Merrell et al., 2012; Stoiber, 2014). Tiers II and III are necessary for students who do not behave appropriately despite the efforts of the PBIS in Tier I. Students who consistently display disruptive behaviors are often placed in Tier II to go through different trials of targeted interventions to determine what addresses their behavior the best (Walker et al., 1996). This tier often serves about 15% of a school population. Tier III should serve about 5% of the population with individualized education plans (IEP), special education services, or intensive individualized intervention (Cook et al., 2008). Disruptive classroom behaviors are common and are often not intense enough to warrant a full, Tier III or special education assessment. Therefore, Tier II intervention is important to address disruptive student behaviors. There exist multiple approaches to determining how to proceed with a student in need of Tier II or greater level of supports.

In Tier II of PBIS systems specifically, students who are at-risk of developing more intense problems are identified through universal screening procedures or referred for behavioral problems by a parent or teacher (Radley & Dart, 2019). These identified students are then referred to a multi-disciplinary team. These teams are often called

problem-solving teams, and they receive the referrals for at-risk students to determine the best course of action for each student to remediate their problem (Merrell et al., 2012; Radley & Dart, 2019). There are two generally used approaches to determining the supplemental supports an at-risk student may need at Tier II. First is the child-focused approach, and second is the intervention-focused or standard protocol approach. Both approaches offer unique advantages and disadvantages to delivering Tier II services to students who are displaying some behavioral problems, at-risk for developing more severe behavioral problems without early remediation and prevention.

In the child-focused approach to Tier II of PBIS, the multidisciplinary team would meet on behalf of each student that is referred to them, deemed to be at-risk for developing more severe behavior problems (American Academy of Special Education Professionals; AASEP, 2007). Child-focused intervention development then typically takes the direct form of the problem-solving approach, where collaboratively, the problem is identified and objectively defined, analyzed to determine the function, an intervention plan is developed specific to the hypothesized function of the problem, and data is collected throughout to track the progress of the intervention, changing the plan if insufficient progress is made (Bergan & Kratochwill, 1990; Reschly & Bergstrom, 2009). This approach to Tier II is advantageous in that the interventions that these students receive would be individualized and specified to their specific behaviors and behavioral functions, which increases the likelihood that they will be successful (VanDerHeyden et al., 2007). This approach, however, is more commonly associated with individualized supports provided in Tier III.

Some disadvantages to this approach include the amount of time and resources required. The problem-solving process is lengthy, and can involve several assessment measures, multiple multi-disciplinary team meetings, and other resources that the school may not be able to allocate to all at-risk, Tier II students (i.e., ~15% of the population of the school; Stoiber, 2014; Walker et al., 1996). Another disadvantage would be the numerous and specially tailored interventions that would be occurring in the school. If unique interventions are serving 15-20% of students in a school, teachers may be overwhelmed. Teachers are most often the ones delivering interventions to students (Erchul & Martens, 2010), and they already face enormous amounts of responsibility for their students (Fernet et al., 2012). In addition, each unique intervention comes with unique data collection measures (Stoiber, 2014). Asking teachers to remember to collect unique progress monitoring data for each student in Tier II student they encounter is burdensome, especially with everything else they are responsible for in the classroom (i.e., managing disruptive student behaviors).

Alternatively, in an intervention-focused or standard protocol approach, schools regularly implement one or a select few different interventions to any student determined to be at-risk, in need of Tier II supports (AASEP, 2007; The IDEIA Partnership, 2007). Taking this approach, school teams select and train staff on these select few interventions that can address a variety of behavioral problems. This increases the fidelity in implementing them and efficiency in delivering them (The IDEIA Partnership, 2007). If teachers and staff learn to implement one intervention very well, their confidence increases, as well as their confidence in delivering it to other students (i.e., generalizing;

Fuchs et al., 2003). If teachers already know the intervention(s) the school uses, they can then apply it on their own when they notice a student is displaying some behavioral problems. Efficiency comes with not having to train a teacher on a new intervention every time they encounter a student who is at-risk. When they only need to know one or two interventions, they can apply them easily to new students identified for Tier II (Fuchs et al., 2003). All students deemed to be at-risk are then given the same intervention, designed to be more general to work with a variety of behavioral functions and student needs (Yong & Cheney, 2013). This is typically to supplement the lack of functional match of problem behavior to intervention in this approach (Fuchs et al., 2003). If the intervention has been empirically found to remediate a variety of problems, the lack of functional match is considered warranted. If a student is not responding to any standard protocol intervention, the team would then need to meet for more individualized planning and potentially Tier III levels of support or special education (Fuchs et al., 2003).

Standard protocol approaches to Tier II are advantageous because they have been shown to improve student outcomes directly, whereas more individualized intervention approaches have not been found to have as strong effects (Vellutino et al., 1996). This is believed to be due to some of the key features outlined above. The use of one or a few evidence-based interventions, implemented by well-trained staff results in the most positive effects on student outcomes. Evidence-based practices are those which have been shown to be effective through repeated research and their use is encouraged in MTSS (Stoiber, 2014; Sugai et al., 2000). Using them tends to result in better student outcomes. Another advantage is that high fidelity is often a result of this approach because all staff

can be taught a few interventions well, rather than a few staff learning various interventions questionably (Fuchs et al., 2003). Additionally, these interventions tend to be easily implemented, in that they fit into school routines, they require little effort, and they are cost effective (Anderson & Borgmeier, 2010). These factors increase the likelihood that staff are implementing correctly because they are not tasked with more responsibility to deliver complicated interventions. Finally, this approach to Tier II, as already mentioned, is efficient. The interventions are designed to address multiple behavioral functions, which allows for general use across various students, settings, and problem behaviors (Hawken et al., 2009).

Because Tier II can be so critical to remediating behavioral problems for students before they reach a Tier III level of need, it is vital that the best practices take place in Tier II to ensure the best outcomes for students. As outlined above, the standard protocol approach to Tier II seems to be more effective and efficient for both teachers and students. It results in students receiving important Tier II behavioral interventions and teachers being more effective at responding to Tier II needs on their own. Therefore, it is necessary to identify interventions which fit the criteria for a standard protocol approach to Tier II level of behavioral need, and are thereby responsive to multiple behavioral functions, easy for teachers to implement, able to be implemented with 15% of students in a school, and empirically validated in terms of effectiveness for positive student outcomes. One such intervention that may fit these criteria is known as the Class Pass Intervention (CPI). This intervention has been found to be easy to implement and can be

tailored to a student's unique needs and behavioral functions within Tier II (Collins et al., 2016).

CPI is a variation of the Bedtime Pass intervention developed by Friman and colleagues (1999). Bedtime Pass addresses children's problematic behavior at bedtime by giving them a new pass each night that can be exchanged for leaving their bedroom once after bedtime. Children can get a drink of water, use the restroom, or go visit their parent's room. Once the pass is used, the child is no longer allowed to leave their bedroom that evening. This intervention was found to reduce instances of children leaving their beds and bedrooms at night, and thus produced better sleep and overall relationship outcomes for both parents and their children (Friman et al., 1999). Thus, the Bedtime Pass became the inspiration for this school-based version.

Cook and colleagues (2014) modified the Bedtime Pass to develop a classroom-based version. CPI typically gives students who display significant disruptive behaviors three passes per day. A pass can be exchanged at designated times throughout the school day for a student to take a 5 to 10-minute break from academic work. Breaks can be taken within or outside of the classroom, depending on the school's available resources. Students may also engage in a preferred activity during this break. In addition, students can exchange any unused passes later for a reward or access to a preferred activity. As the child uses fewer breaks, the intervention can be faded as the child decreases their disruptive behaviors and increases their on-task behaviors.

Class Pass Intervention has several components and is versatile enough for teachers to make necessary changes to meet a student's needs. It has been shown to

reduce disruptive behaviors with both social positive reinforced and social negative reinforced functions. Therefore, CPI can be effective for students in Tier II because it addresses multiple concerns without needing to identify the exact function of the behavior. More broadly, CPI combines components of negative reinforcement, positive reinforcement, and choice to address students' behavioral concerns. In combination, they have proven to be effective at reducing disruptive behaviors, particularly in Tier II where the function of behavior is often undetermined. Therefore, CPI can potentially decrease disruptive behaviors across various settings, students, and ages that require a Tier II level of behavioral support. Exploration into each of these components (i.e., component analysis) may reveal how they each address disruptive behaviors in schools.

The primary component of the Class Pass Intervention is negative reinforcement. This is demonstrated through the allowance of a break from classroom activities contingent upon a student using a pass. Negative reinforcement is when the occurrence of a behavior results in the avoidance or elimination of unfavorable or unpleasant stimulus. This avoidance or elimination serves as reinforcement by increasing the likelihood that behavior will be exhibited in the future (Miltenberger, 2008). In the school environment, negative reinforcement is a common way that disruptive behaviors are perpetuated. For example, when a class is working on a lesson that a student does not like, they may engage in disruptive behaviors to stop the lesson. When the student learns that disruptive behavior stops the lesson, they avoid the aversive situation and are more likely to be disruptive in the future. Thus, the disruptive behavior is negatively reinforced. The main premise of the Class Pass Intervention is that students are granted breaks to escape

unwanted academic tasks in a way that is socially acceptable (Collins et al., 2016). That is, when students recognize they need a break, they can exchange a pass with their teacher to leave the classroom with permission for several minutes. The underlying logic is when students are provided with the option to leave the classroom a set number of times, they would not need to exhibit disruptive behaviors to escape the classroom or avoid their academic work. This component of CPI should be the most functionally relevant to serve those students whose main function of disruptive behaviors is escape. However, there are times where simply providing an opportunity to escape is not enough to address inappropriate behaviors for such students.

A second component of Class Pass Intervention is positive reinforcement. Saving unused passes to exchange later is considered the main positive reinforcement portion of CPI (Cook et al., 2014), but gaining the access to a break may also be a positive reinforcement component in CPI. Positive reinforcement is defined as the occurrence of a behavior that is followed by the addition to a reinforcer that results in the strengthening of the behavior (Miltenberger, 2008). The Class Pass Intervention contains elements of positive reinforcement through both instant and delayed gratification. In CPI, children can employ instant gratification by turning in a pass to immediately be given a break from their schoolwork to engage in a preferred activity. In addition, CPI allows students to delay gratification by exchanging their remaining, unused passes later for a backup reinforcer (Collins et al., 2016; Cook et al., 2014). These elements of instant and delayed gratification can be useful for various children and a variety of behaviors. Both elements may be examples of positive reinforcement if they both involve gaining something which

increases the likelihood of the behavior happening in the future. Positive reinforcement in the school environment is often displayed through students gaining attention, access to activities, or access to tangible items as a result of displaying disruptive classroom behaviors. As already described, when implementing an intervention for behaviors maintained by positive reinforcement, it is important that the intervention matches the function that perpetuates the behavior (Ingram et al., 2005). Although this is strongly encouraged, research has found that interventions which employ features of positive reinforcement have been effective at treating escape-maintained behaviors as well (DeLeon et al., 2001).

A third component of Class Pass Intervention is the concept of choice. This is evident in that the students can choose when to use their passes to take a break or save their passes to be exchanged later. Choice can facilitate students' feelings of autonomy, intrinsic motivation, and positive performance outcomes (Patall et al., 2010; Reeve & Jang, 2006). Implementing CPI with more students could introduce additional opportunities for choice to be used in the school environment. CPI's choice component may promote increased time on-task and time spent in the classroom for the target student. Previous research has shown that aggressive behaviors in response to being provoked were reduced when an escape option was present (McCloskey et al., 2005). The option to escape the classroom provides an individual with a sense of control. The school environment for some students may be aversive, and there is a lack of control for them because they are required to be there. Research has shown that the option to escape aversive situations provides individuals with an increased sense of control, which

decreases externalizing behaviors (Berkowitz & Embree, 1987). Therefore, students using CPI may feel that the choice to take a break provides them with a sense of control over an aversive environment. The option to take a break, without ever taking one, could be effective on its own to reduce disruptive behaviors.

Choice as a form of intervention was reviewed in a meta-analysis completed by Shogren and colleagues (2004), where research on providing choice to individuals with disabilities, or those who exhibited problematic behavior was reviewed. Their results indicated that providing choice significantly reduced the occurrences of problematic behaviors across all their reviewed participants and studies. In the context of the school environment, reducing disruptive behaviors leads ultimately to more time engaged in learning and academic activities. The choice component of CPI does not directly address the function of the disruptive behavior, but it indirectly influences the development of skills that can affect disruptive behaviors. This skill development is important for any student, especially those in Tier II, further emphasizing the effectiveness of CPI.

Finally, another influence on behavior that is at work with the use of CPI is rule-governed behavior. Specifically, rule-governed behavior results in students' target behaviors being mediated or "governed" by an explicit rule or law, regardless of immediate contingencies that may exist outside of that rule (Miltenberger, 2008). Thus, students engage, or do not engage, in specific, target behaviors because it would break the established rule (i.e., the discriminative stimulus). Breaking the established rule then results in anxiety, negative feelings, and negative mental states, even if they never have to face the actual contingencies associated with breaking that rule (Sturmey et al., 2020).

The rule, therefore, alters the probability of the target behavior occurring in the future, rather than the direct contingencies surrounding the target behavior. For example, with CPI, students are trained on the intervention before it is implemented, and they learn that if they choose to engage in disruptive behaviors (i.e., a target behavior) instead of using a break pass, their teacher may take away a break pass and enforce that they use a break. Therefore, this may establish rule-governed behavior, where the student understands the communicated rule that they are not to engage in disruptive behaviors in school, or they face the consequence of having a break pass taken away. Students may then be rule-governed, and no longer engage in disruptive behaviors without ever having any passes taken away from them (i.e., experiencing the established contingency for engaging in disruptive behaviors). Training on the CPI is a necessary step to implementation but may cause rule-governed behaviors to be established in participants.

Class Pass Intervention has been implemented in four different settings in the literature thus far. In its first derivation from the Bedtime Pass, Cook and colleagues (2014) implemented CPI with elementary aged students. Complete Functional Behavioral Assessments (FBAs) were conducted for each student, and those with hypothesized escape-maintained behaviors were selected. CPI was successful in reducing disruptive behaviors and increasing academic engaged time for all three participants. Next, Collins and colleagues (2016) implemented CPI with high school students. FBAs were not conducted in this study; therefore, the function of behavior was not identified. This modification was an attempt to show that CPI could address multiple behavioral functions. Results indicated that CPI increased all four participants' academic engaged

time. Narozanick and Blair (2018) implemented CPI with three elementary aged students who were receiving special education supports. Based on their FBAs, all three of these students were thought to display escape-maintained disruptive behaviors. This study also modified the CPI by not allowing students to exchange unused passes for a backup reinforcer. This study showed that CPI without that feature was also successful at reducing disruptive behaviors and increasing academic engaged time. Finally, in its most recent application, Zuniga and Cividini-Motta (2021) implemented CPI with three elementary students, either diagnosed with or suspected to have Attention Deficit/Hyperactivity Disorder (ADHD). These participants also displayed disruptive classroom behaviors, but the behavioral function was unknown. Results of this study demonstrated again that CPI was effective at reducing disruptive behaviors and increasing academic engagement. Given the positive results from these four studies, CPI warrants further investigation of its utility across participants and settings for students requiring Tier II behavioral support.

Purpose of the Study

While expanding the literature base and empirical support on CPI is essential, it is also important to analyze the components of the intervention, to determine which components drive the effectiveness of it. Component analysis allows direct comparison of the active elements of interventions by systematically adding them in or dropping them out throughout intervention implementation (Cooper et al., 2014). Understanding which components make it effective will then inform the most efficient and effective way to implement Class Pass. This is especially important for the framework of standard

protocol Tier II service delivery models. Class Pass can be easily implemented by any teacher or staff member, it can address multiple behavioral functions, and it encourages students' academic engagement which results in more positive outcomes. In previous applications it has also been successful at reducing disruptive behaviors, which are cited as something teachers struggle with the most in managing their classroom environments.

The four published studies on Class Pass implemented two versions that were both effective at reducing disruptive behaviors and increasing academic engagement (Collins et al., 2016; Cook et al., 2014; Narazanick & Blair, 2018; Zuniga & Cividini-Motta, 2021). The first version is derived from the CPI's original application, where Cook and colleagues (2014) included the positive reinforcement component of exchanging unused passes for backup reinforcers later. Collins and colleagues (2016) and Zuniga and Cividini-Motta's (2021) applications of CPI also included the ability to exchange unused passes. The second version was only examined by Narozanick and Blair (2018). This version excluded the ability to save unused break passes for backup reinforcement. Both versions were deemed effective at reducing disruptive behaviors and increasing academic engagement. However, because the element of backup reinforcement can be resource consuming (i.e., involves purchasing tangible prizes; Radley & Dart, 2019), exploration into which version of CPI is most effective is necessary. Determining the most effective and efficient version of the CPI will inform practitioners of the best practices for implementing it with students. It also may encourage more practitioners to use it within a standard protocol approach to Tier II service delivery, due to the range of behavioral functions that it may address in students'

problematic behaviors. Therefore, this research study was guided by the following research questions:

1. How does either version of Class Pass impact academic engagement or disruptive behaviors? Does this application of CPI follow the patterns of the four previous applications, at achieving increasing engagement and decreasing disruptions for students?
2. Which version of Class Pass is most successful at achieving the desired outcomes of the intervention, which are to decrease disruptive behaviors and increase academic engagement? How does the inclusion or exclusion of the component of allowing unused passes to be saved and exchanged for backup reinforcers influence the dependent variable outcomes?
3. Finally, does the exchanging unused passes component increase or decrease the treatment acceptability for both teacher and student participants? Which version of CPI do both teachers and students prefer, regardless of the results on the effectiveness each?

Chapter 2

Methods

Participants and Setting

This study was conducted in an elementary school in southeastern Wisconsin. Institutional Review Board (IRB) approval was obtained in December of 2021, prior to identifying a school site. Following IRB approval, schools were recruited by the primary investigator (PI) through multiple colleagues who worked in districts in both Southern

Minnesota and Southeastern Wisconsin. School psychologists proposed the project to each schools' problem-solving teams that included principals and key stakeholders. Permission to conduct the study was obtained by a principal in a Minnesota elementary school; however, not enough teacher interest was garnered. Permission to carry out the study was obtained by the principal at an elementary school in Southeastern Wisconsin during the Fall of 2022. Teacher participants were sent a letter via email from their principal, written by the PI, about the project. The letter informed the teachers they were being recruited on a volunteer basis to implement Class Pass with one student in their class, who displayed significant disruptive behaviors. Teachers were provided a definition of both versions of Class Pass and informed that the intention of the study was to determine which, if either, was the superior version, in terms of effectiveness and ease of implementation.

Seven teachers were recruited and willing to implement CPI across their 1st through 5th grade classrooms. Attempts were made to have all student participants nominated by teachers to be near the same grade to control for age as a confounding variable (i.e., if most volunteering teachers teach 2nd grade, attempts to use teachers and students in 2nd grade, or as close as possible will be made), however obtaining parental consent was challenging. All seven teachers were asked to nominate one student from their classes, based on the student displaying significant disruptive behaviors and high levels of off-task behaviors during their academic work. Teachers were provided examples and non-examples of disruptive and off-task behaviors in the recruitment letter they were sent when they volunteered for the project. The nominated students were first

brought to the problem-solving team (i.e., the principal, vice principal, school counselor, and school psychologist; occasionally the PI) to determine if they were good candidates for CPI. Informed consent was obtained by all teachers, and parental consent letters were sent home to the seven nominated students' families. Of those seven, three consent forms were returned, and those three participants were selected to receive CPI. Researchers then obtained assent from each selected student during baseline data collection, prior to beginning intervention.

Penny

Penny was a 3rd grade Caucasian female student whose primary language was English. Her disruptive classroom behaviors included talking to students, leaving her seat, going into the hallway, not responding to teacher requests or prompting, coloring, interrupting others, and talking back to her teacher (e.g., saying no, questioning her instructions, demanding fairness, etc.), which at times was at elevated volumes. Penny was also notably easily provoked by her classmates when they accused her of being dishonest or engaged in teasing or mocking behaviors toward her. Penny participated in the general education environment 100% of the time. She performed in the 25th percentile in reading, and in the 21st percentile in mathematics in the most recent (i.e., Winter 2023) district-wide academic assessments, iReady. School records revealed that Penny did not participate in any previous, documented behavioral interventions. Penny had a record of 11 disciplinary referrals, both major and minor, all for significant interruptions to the learning environment and inappropriate language. During the baseline phase of this project, the only behavioral supports that Penny was receiving were the universal

classroom management supports implemented by her teacher, and occasional meetings with her School Counselor for emotional regulation strategies. It should also be noted that Penny's original teacher, who volunteered to participate and nominated Penny for CPI resigned from her teaching position unexpectedly during Winter of the 2022-2023 school year. Therefore, Penny had multiple substitute teachers during the interim, but her long-term substitute and new teacher officially took position after the first point of baseline data collection. Penny's new teacher consented to participate and deliver the intervention as originally intended and received training at the same time as the other teachers in the study.

Kyle

Kyle was a 4th grade African American male student whose primary language was English. His disruptive classroom behaviors included talking to students near him, leaving his seat, singing or humming to himself, interrupting others, talking or calling out at inappropriate times, not responding to teacher directions or targeted prompts, and using his Chromebook inappropriately. Kyle frequently pointed out when other students made mistakes or errors in the classroom. He participated in the general education environment 100% of the time. Kyle scored in the 63rd percentile in reading and the 21st percentile in mathematics in the most recent (i.e., Winter 2023) district-wide academic assessments, iReady. Kyle had approximately 16 major and minor disciplinary referrals since he was a first grader. The majority of his referrals were for fighting, but the others were for inappropriate language and significant interruption to the learning environment. During the baseline phase of this project, the only behavioral supports that Kyle was receiving

were the classroom management supports implemented by his teacher, and occasional meetings with his School Counselor for emotional regulation and peer conflict resolution strategies. It should be noted that the final week (i.e., CPI in a no rewards phase) of Kyle's intervention was implemented by a substitute teacher, because his teacher had to take an emergency leave for a medical procedure.

Sean

Sean was a 5th grade mixed race, both African American and White, male student whose primary language was English. His disruptive classroom behaviors included talking with students around him, moving or changing body positions frequently, leaving his seat at inappropriate times, unresponsiveness to teacher prompts or instruction, using various fidget toys inappropriately, dancing, and general disengagement from the learning material. Sean participated in the general education environment 100% of the time. Sean scored in the 4th percentile in reading and in the 4th percentile in mathematics in the most recent (i.e., Winter 2023) district-wide academic assessments, iReady. Sean had over 30 major and minor disciplinary referrals on record since the start of his 4th grade year at this school. The majority of Sean's referrals were for significant interruption to the learning environment, followed by inappropriate language and physical fighting. It should be noted that most of these referrals occurred during 4th grade for Sean, with only three occurring during the 2022-2023 school year, when CPI implementation took place. During baseline phase of this research project, the only behavioral support that Sean was receiving was the classroom management supports implemented by his teacher.

Materials

Consent and assent forms were distributed to teachers, parents, and students. Specifically, separate consent forms were provided to teachers and parents, as their involvement in the study varied significantly. Assent forms were then provided to student participants and completed with each student. This was completed, after obtaining parental consent, by the elementary school's assigned school psychologist and the PI. Physical passes for student breaks were printed and laminated, with the student's name and the duration of their breaks (i.e., 10 minutes) on each (see Appendix A). As indicated by Cook and colleagues (2014), passes needed to be small and tangible so that they could be physically delivered, exchanged, collected, and tracked each day. Teachers were provided with 16 laminated passes per student as they could be recycled. The same passes were re-used with each student throughout the intervention phases. In addition, physical, 10-minute timers (i.e., hourglass) were provided to each student in a small tote box labeled with their names. The tote box or "break box" also included materials for the students' selected break activities (i.e., based on their preference assessments; see Appendix B). Break boxes were kept within each student's classroom, tucked out of reach when not in use. Teachers were provided with a tentative schedule that was divided by week and day (see Appendix C). Each week indicated which version of class pass the student was receiving. Each day included a fidelity checklist for each version of CPI, depending on what phase the student was in, and a place to record how many passes the student used each day. These schedules were changed and updated as needed throughout data collection. Finally, tangible rewards for each student were kept in the school

psychologist's office for the days that students were able to exchange unused passes for rewards. Tangible rewards were also based on preference assessments that the school psychologist and PI completed with the students, similar to the preference assessment for break activities (see Appendix B).

Next, several materials were needed for collecting data while carrying out the CPI. Observational data collection forms were provided for each researcher, for each observation carried out, and for each child throughout the duration of all data collection (see Appendix D). These data collection forms included spaces to record the dependent variables, both academic engagement and disruptive behaviors, in the manners outlined later. Fidelity checklists were also provided to researchers for observational data collection sessions during treatment phases. These forms were meant to track fidelity of implementation of both versions of Class Pass. In addition, as mentioned previously, for the development of reward and break activity menus, preference assessments were conducted with each participant (see Appendix B). Finally, physical copies of the Intervention Rating Profile (IRP-15; Martens et al., 1985) were provided to teacher participants and the Children's Intervention Rating Profile (CIRP; Witt & Elliot, 1985) were distributed to each student participant at the end of data collection phases. Treatment acceptability was then compared to determine which version of Class Pass was preferred by both student and teacher participants.

Preliminary Procedures

Teacher Training

Several procedures took place prior to data collection beginning. Specifically, teacher training was the first procedure conducted during baseline. Teacher training was especially important for this project, because several variable parameters of CPI had to be established before the intervention could be introduced to the student participants. These parameters of CPI were established in collaboration with the teachers delivering the intervention and the problem-solving team at the elementary school. The parameters of the intervention also were heavily based on available resources of the elementary school. For example, the supervised location of where students took their 10-minute breaks when they exchanged a pass needed to be identified. Specifically, it needed to be determined whether the student could physically leave the classroom for the break, go to a designated break area (e.g., a space in the office, another classroom, computer station etc.), or whether they had to remain in the classroom (e.g., small corner or space in a secluded area of the classroom). The teachers and team determined that desks in the hallway, right outside of the classroom, or an area in the back of the classroom were the best locations for students to take breaks based on the resources available.

Next, rules were established for when students were able and unable to take a break. For example, previous research recommended that breaks cannot be taken during tests or exams and within 15 minutes of already using a break pass (Collins et al., 2016; Cook et al., 2014). These rules were adopted for this study, with the addition of not using a break within 15 minutes of a lunch or recess. After this, the steps were determined for pass distribution and reward exchange procedures. Teachers agreed that they would provide their student the three passes each morning of the intervention phases and track

the daily pass use through the simple weekly tracking log within the schedule mentioned previously (see Appendix C). These steps were to be completed for each student, for each day of the intervention. They also agreed to track their fidelity through the fidelity checklists, which were also provided in the weekly schedule for each student, each day of the intervention phases. The teachers, problem solving team and PI also agreed that during the phases where students could exchange their unused passes for rewards that the school psychologist would carry this out in her office two times per week (e.g., Tuesday and Thursday) at the end of the school day. Teachers would send their students to the school psychologist's office, or she would collect them if it seemed like teachers had forgot. Once these measures were established, it was then necessary to conduct the training on CPI.

Training teacher participants involved the use of the procedural fidelity checklists to ensure that the teachers understood all necessary components to implement both versions of CPI. The PI and school psychologist (i.e., trained research assistant) carried out teacher training procedures. Along with the use of the fidelity checklists, the training followed a model of Behavioral Skills Training (Hogan et al., 2015) that involved explicit explanations of each step of each version of CPI, modeling the exchange of a pass for a break, and allowing for guided practice with performance feedback. Teacher training procedures took approximately 20 minutes to complete. This was conducted prior to the school day, and training continued until each teacher was able to demonstrate 100% fidelity based on the fidelity checklists used during guided practice (Collins et al., 2016; Cook et al., 2014; Narozanick & Blair, 2018; Zuniga & Cividini-Motta, 2021).

Operational Definition of Target Behaviors

Prior to the collection of baseline data, the PI, problem-solving team, and teachers met to develop operational definitions for the target behaviors being observed. The dependent variables measured in this study were disruptive behaviors and academic engagement. Disruptive behaviors in the classroom can take many different forms, such as calling out, interrupting, talking to classmates, noncompliance, out of seat behaviors, and behavioral tantrums (Proctor & Morgan, 1991). Similarly, on-task or academic engaged behaviors can vary depending upon the age and grade level of students, present class activities, and expectations from teachers (Alrashidi et al., 2016). Therefore, operational definitions for both disruptive behaviors and academic engagement were developed for each student participant. These definitions were developed prior to the first baseline session by asking teachers about the behaviors exhibited by their nominated students. Definitions were slightly altered (e.g., adding examples of disruptive behaviors to not previously discussed by the team) as the PI and school psychologist began collecting baseline data and directly observing the disruptive and engaged behaviors for each student.

Preference Assessment

Preference assessments were completed with each student participant during baseline (see Appendix B). Within the C phase of the study, students had the option to save unused passes and exchange them later for backup reinforcers. Conducting preference assessments with each participant ensured they had access to reinforcers that they were interested in during the C phase. This increased the likelihood that the

reinforcers were motivating or rewarding for students when implementing this version of the CPI (DeLeon & Iwata, 1996). For example, the school asked that food or candy not be provided as a reinforcer option, so small toys and fidgets were commonly preferred based on the student assessments and items that we listed as available backup reinforcers. The students were asked to name their top five reinforcer category by marking it with a star and circling their top choice from the provide list. From the preference assessment, a reward menu was then established for each student.

Students completed a second preference assessment during baseline to determine which activities they would like to engage in when they used a pass and to take a break (see Appendix B). Because breaks could only be taken in the hallway or the back of the classroom, break activity choices were somewhat limited, but typically, it is unwanted for break activities to be so reinforcing that they act as a reward. They should be reinforcing enough that students want to take their breaks over displaying disruptive behaviors in their classrooms (Collins et al., 2016). For example, the break activities that students could choose from in this study included reading a book or magazine, stretching, coloring or drawing, helping the school secretary, playing with fidgets, movement break in the hallway, talking to a trusted teacher or staff member, sitting quietly, working on something else, and laying down on the floor. Students were able to choose from any activity that they said they preferred each time that they took a break.

Measures

Several measures were utilized to for data collection purposes. These included measures of the dependent variables (i.e., disruptive behavior and academic engagement),

measures of treatment acceptability and fidelity, and methods for calculating interobserver agreement (IOA).

Systematic Direct Observations

Systematic direct observations were conducted to measure the dependent variables previously discussed. More specifically, classrooms observations were conducted using both momentary time sampling (MTS) and partial interval recording (PIR; see Appendix D). MTS was used to record the dependent variable of academic engagement, where at the end of each 15-second interval, the PI and/or the school psychologist recorded whether the student was on-task or not (i.e., denoted on the data collection sheet with a "+" or "—"). In PIR, the PI and/or the school psychologist noted whether the target, disruptive behavior had occurred at any time during the designated observation interval (i.e., denoted on the data collection sheet with a "1" or "0"; Miltenberger, 2008). Disruptive behaviors were recorded using PIR, with the same observation period and intervals as MTS for academic engagement. Previous CPI applications have used a 30-40-minute observation periods with 10-15-second intervals (Cook et al., 2014; Collins et al., 2016), however, this study used 20-minute observation periods with 15-second intervals. While past research has indicated that an increased observation period duration tends to yield more accurate observational data results (Ferguson et al., 2018), the difference between 20-minute observation windows and 30-minute observations windows is not significantly different, especially when greater than three observation periods occur, when the behavior is relatively stable (i.e., low levels of variability), or when low-stakes decisions are made based on the behavior (Ferguson et

al., 2012; Tiger et al., 2013). Data collection windows were also recommended to be shortened, to prevent researcher fatigue, as observations of the students took place back-to-back. Data on both dependent variables are presented as a percentage of observed intervals that the student was observed to be engaging in them (see Appendix D).

Observations were conducted two times per week and for approximately 14 weeks, with each participant requiring a minimum of 10 weeks, and dependent on the stability of data within each phase of the study (see Appendix C). Most sessions were conducted with one observer recording the behavior of each participant. Two researchers (i.e., the PI and school psychologist) were used to observe student's behavior for observation sessions where IOA was calculated. Further information on IOA is explained in the next section. Phases typically lasted two to three weeks, and at least three data points were required to be collected before phase changes took place. For each observation, the PI and school psychologist used data collection sheets that were divided into 15-second intervals and provided areas to record whether the target behaviors occurred (see Appendix D).

Interobserver Agreement

Interobserver agreement (IOA) ensures that the dependent variables (i.e., academic engagement and disruptive behaviors) are being measured accurately across observers. IOA was conducted for 23% (range = 21-24%) of all observation periods. Effort was made to attain IOA at least once in each phase of CPI for each participant, however, due to researcher and participant absences and scheduling, IOA was not attained for two phases of the entire study (i.e., phase 2 for Sean and phase 3 for Kyle).

IOA sessions involved the PI and the school psychologist observing the same student's behavior at the same time. IOA was then calculated by taking the number of intervals that both observers agreed on the occurrence or nonoccurrence of the target behavior, dividing that number by the total number of intervals, and multiplying that quotient by 100% (Cooper et al., 2014). IOA was calculated for both academic engagement and disruptive behaviors across all student participants.

To ensure high levels of IOA, the school psychologist, who conducted observations and assisted with data collection, completed training with the PI prior to collecting data. The PI used a sample video on YouTube, created for the purpose of training systematic observations, specifically for classroom disruptive behaviors and academic engagement. The school psychologist was provided operational definitions for both the disruptive behaviors and academic engagement and was provided an explanation of how to conduct MTS and PIR procedures. They then completed the observation procedures using the YouTube video, in the same manner that data collection took place in the classrooms of the study. The school psychologist attained 92% agreement for IOA with the PI during training, which is an acceptable score.

Intervention Fidelity

Intervention fidelity was measured using procedural checklists developed by the researcher and modeled after previous applications of CPI (see Appendix C). Two checklists were developed, one for each version of CPI used in the study. For the version of CPI which excluded the ability to exchange unused passes, the following five procedural steps were on the checklist, as modeled by the one utilized by Cook and

colleagues (2014): (a) student is given their class passes daily; (b) teacher prompted the student to use a class pass if the student began to display disruptive behaviors; (c) when using a pass, student went directly to break location and engaged in appropriate break activity; (d) student returned directly to classroom after break time ended; (e) teacher or staff member records how many passes student had left at the end of the day (Collins et al., 2016; Cook et al., 2014; Zuniga & Cividini-Motta, 2021). For the version of CPI that included the ability for students to collect unused passes to be later exchanged for backup reinforcers, the checklist for these sessions consisted of six procedural steps, on the days that the exchange occurred. This checklist included the five steps previously described plus a sixth step (f) student exchanges unused passes for items from their reward menu at the end of the school day (Narozanick & Blair, 2018).

Treatment Acceptability

The study examined student and teacher participants' treatment acceptability for both versions of the CPI. The Intervention Rating Profile (IRP-15; Martens et al., 1985) was used to assess teacher's perceptions of treatment acceptability for the two versions of Class Pass. The IRP-15 contains 15 Likert-scale items, inquiring about the acceptability of the intervention and implementation. The responses range from 1 (strongly disagree) to 6 (strongly agree), and items cover topics related to the intervention, such as practicality, effectiveness, and risks to students. Teacher participants completed one IRP-15 for each version of Class Pass. IRP-15 scores range from 15 to 90, and scores above approximately 53 are considered to reflect intervention acceptability (Martens et al., 1985).

The Children's Intervention Rating Profile (CIRP; Witt & Elliot, 1985) was used to assess the children participant's perceptions of each version. The CIRP contains 7 items, with the same Likert-scale ratings for items as the IRP-15. The CIRP evaluates the intervention in terms of fairness, harshness and whether the individual likes it. Student participants also completed a CIRP for each version of Class Pass. Both measures have been widely used in assessing behavioral interventions, including CPI, in schools and have demonstrated adequate levels of reliability and validity (Elliot, 1986; Lane et al., 2009). Scores on the CIRP range from 7 to 42, and higher scores indicate greater levels of treatment acceptability (Witt & Elliot, 1985).

Experimental Design and Procedures

This study employed a multiple-treatment reversal design to examine the effect of the different applications of CPI on decreasing disruptive behaviors and increasing academic engagement for elementary students. The phases in the multiple treatment reversal design included baseline (A) where no intervention was implemented, the implementation of Class Pass excluding the ability to exchange unused passes (B), and the use of Class Pass with the ability of students to collect unused passes and exchange them for backup reinforcers (C). An A/B/C/B/C reversal design was used with two participants, while one participant received the counterbalanced version, an A/C/B/C/B design. Treatments were counterbalanced across the participants to control for order effects. Phase changes occurred based upon the stability of the participant's data during each phase, with particular emphasis placed on academic engagement, the primary dependent variable. Further information on each phase is described in later sections. In

addition, participants were made aware of the phase that they were in through the schedule and fidelity checklists provided and updated weekly by the PI (see Appendix C). The PI also contacted teacher participants via email each week, to notify them of phase changes and to determine times to deliver the corresponding materials for each phase of the study.

Student Training

Student training took place during baseline phases, and directly prior to treatment phases beginning. Students were trained on both versions of CPI during the same, single training session. Training was conducted by the school psychologist, with supervision from the PI. The researchers instructed the students on how to use their passes (e.g., raise their hand to ask for a break or hold pass in the air), as well as situations where they should use a pass (i.e., feeling bored, frustrated, or starting to disrupt the class) and situations where they should not use a pass (i.e., within 15 minutes of having already used one, within 15 minutes of lunch or recess, or during exams). It was also established that if students were choosing not to take a break at a time that they should, and their teacher felt that they were being disruptive or distracting, their teacher could take one of their break passes and enforce that the student takes a break. This is where the opportunity for rule-governed behavior in the student participants may have been established, as it was communicated that behaving in a certain way resulted in a loss of a Class Pass, and this established the rule may have governed the students to no longer behave that way in their classrooms (Miltenberger, 2008; Sturmey et al., 2020).

Because both versions of CPI were trained simultaneously, student participants were also instructed on the parameters of exchanging unused passes for backup reinforcers and the schedule of this exchange (e.g., every Tuesday and Thursday during these weeks) was also explained. During CPI phases, students were reminded at the beginning of the week which version of Class Pass they were receiving that week. Students were provided reminders throughout the week as needed (i.e., save your passes, collect your reward today, etc.). The teacher, students, and researchers gave input as to how many unused passes were needed to obtain each reinforcer on each student's reward menu. Behavioral Skills Training (Hogan et al., 2015) was also used in student training, where researchers explained and modeled the exchange of a pass for a break, and backup reinforcer exchange. The student training took no longer than 20 minutes and did not conclude until student participants were able to obtain 100% fidelity based on the previously mentioned fidelity checklists (Collins et al., 2016; Cook et al., 2014; Narozanick & Blair, 2018; Zuniga & Cividini-Motta, 2021).

Baseline (A)

Baseline data on each student's dependent variables (i.e., disruptive behavior and academic engagement) were collected by the PI and the school psychologist. During baseline, students participated in their general education classrooms and daily activities as all typical students would be expected to. No student participant received any other intervention, special education services, or other services during the baseline phase. Observations during baseline took place shortly after (e.g., approximately 10-15 minutes) the school day began. Penny was observed first, just after her class finished breakfast and

began their morning meeting or story time. This tended to be a difficult transition time for Penny, as she took some time to adjust to the school environment, indicated by higher rates of her problematic behaviors. Kyle was observed after Penny during baseline sessions. Kyle was observed during his math lesson for all baseline sessions, a time where he tended to exhibit higher rates of problem behaviors as well. Finally, Sean was observed after Kyle, also during his daily math time, as this was a time that Sean also struggled with his behaviors.

Students were not informed or trained on the interventions until baseline was nearly or had already been completed. Data collection was conducted using systematic direct observation procedures, both MTS and PIR as outlined previously. Toward the end of the baseline phase, teacher and student participant training took place in the manners described previously. Stability of baseline data was sought after, with a minimum of three data points being collected during this phase for each participant. The first intervention phase began following the development of student reward menus, break activity preferences, CPI training, and sufficient baseline data collection. Students were then randomly selected to receive either CPI with no pass exchange (B) or CPI with a pass exchange (C) first. These phases were counterbalanced so that two participants were administered the B phase first and one participant was presented with the C phase first to control for order effects.

Class Pass Without Exchanging Unused Passes (B)

For all sessions during this phase, students were provided with three Class Passes at the beginning of their school day, every day of the school week. They were able to

exchange their passes to take a break each day of the week, throughout the entirety of the school day, but within the parameters established during training (i.e., not during tests, within 15 minutes of another pass, or within 15 minutes of lunch or recess). When students chose to use a pass at any time during these phases, they were expected to report to their designated break area (i.e., the hallway or back of the classroom) to engage in their preferred break activity for 10 minutes. Student participants did not have the option to exchange unused break passes for items on their established reward menus in this phase. Timers (e.g., hourglass) were provided in each students break box. Students were expected to take their break box to their designated break location. Their break activity choices were also contained in their break boxes. As soon as the 10-minute timers ran out, students were expected to put everything back in their break box and return to class. If their teacher enforced that the student needed a break during these sessions, the student was expected to comply with the request by exchanging a pass for a break. Teachers were asked to track how many passes their student used daily, with the use of previously mentioned tracking area on the weekly schedules.

Observations during this phase took place approximately two times per week, in the same manner as baseline, using 20-minute observation periods and 15-second PIR and MTS intervals. They often took place in the same participant order and time frame as baseline. Specifically, participants were observed during approximately the same class periods or times of day, and they were observed in the same order (i.e., Penny, Kyle, then Sean) as baseline. Students were expected to engage in their class activities throughout the entire school day like any student, but they could choose to use breaks and had them

available to use at any time. Thus, they were also expected to be engaged in their classroom activities and expectations when they were being observed during these phases as well unless they were taking a break. If a break occurred during observation phases, those intervals were not counted toward the percentages of intervals that the dependent variables were recorded during.

Class Pass Plus Exchanging Unused Pass (C)

The procedures in this phase were nearly the same as those in phase B. That is, students were provided with three Class Passes at the beginning of their school day, each day of the school week. The major difference was that during these phases, students had the option to collect and exchange their unused Class Passes for backup reinforcers on Tuesdays and Thursdays (Cook et al., 2014). Passes could still be exchanged for a break within the same established parameters as the other phases. Timers and break boxes were provided during these phases to ensure breaks were lasting the designated amount of time and students were engaging in appropriate break activities. Teachers could still enforce that student use their breaks in these sessions if the student was being disruptive and not taking a break on their own. Teachers tracked how many passes their student used daily during these phases in the same way as all other CPI intervention phases (see Appendix C). Specific to these sessions, backup reinforcer exchange took place every Tuesday and Thursday, in the school psychologist's office. Students were able select their desired reward from their established menu if they had enough passes saved to attain that reward. As mentioned previously, exchange ratios for backup reinforcers were developed for each student's rewards menus, in collaboration with students, teachers, and researchers.

As with the other phases within this study, observational data were collected in the same manner as all other phases, during 20-minute observation periods divided into 15-second intervals. Data were collected on academic engagement and disruptive behaviors using the same PIR and MTS methods described previously. The order and time of day that observational data collection took place for each participant in these sessions were the same as other phases. Like the other intervention phases, students were expected to engage in the activities that their class was expected to for the entire school day, apart from times that were taking a break, whether the break were by choice or teacher enforced. As with the other intervention phases, if a break occurred during observation phases, those intervals where the break was taking place were not counted toward the percentages of intervals that the dependent variables were recorded during.

Intervention fidelity checklists were meant to be completed by the teachers daily, according to which phase of the study their students were in. Teachers completed checklists for 85% [range = 68% - 100%] of intervention days but indicated high rates of fidelity when they did complete the checklist, with 100% fidelity reported. Fidelity checklists were also intended to be completed by researchers when they were observing students taking a break or teachers enforcing taking a break. This occurred only three times during data collection, because students were only observed to take breaks while the researchers were present three times throughout all data collection phases and observation periods. Researchers observed 100% fidelity from all participants during these three occasions where they were able to observe participants engaging in a break. Fidelity checklists were not able to be completed during times that IOA data were

collected, with multiple researchers present, as none of the three occasions where the student took a break with researchers present occurred during IOA data collection.

Chapter 3

Results

Dependent variable data were recorded in terms of the percentage of intervals where the student was engaged in on-task behavior, and the percentage of intervals where the participant engaged in disruptive behaviors. The individual graphs for Penny, Kyle, and Shawn can be found in Appendix E. Visual analysis of graphed data for on-task behavior and disruptive behaviors were conducted across participants to evaluate the effects of both versions of Class Pass. Specifically, level, trend, and variability across treatment phases were visually analyzed for each participant. Level refers to the average or median score for each independent variable in each phase, typically indicated by a horizontal line running through the mean, median, or "level" for that phase. Levels can then be compared across phases, which helps evaluate changes in data between phases. Variability was also be examined, in terms of the extent that data points within the same phase are similar. For variability within phases to be acceptable, 80% of the points within a phase should be within $\pm$ 25% of the median value in that phase (Ledford et al., 2018). Variability may also be examined between phases. Finally, trend can be determined by analyzing the direction of data lines within a phase. A trend can be evaluated by creating regression lines for each phase or by connecting the first and last data points in a phase and determining the direction of the trend (i.e., positive, negative, no change; Engel & Schutt, 2016). For example, for the scope of this study, researchers hoped to see an

increasing overall trend in academic engaged behaviors, and a decreasing trend for disruptive behaviors.

Percentage of non-overlapping (PND) data were also analyzed across treatment phases. PND is a measure of effect size for single-case design, where the number of data points that do not overlap with the highest or lowest data point in the previous phase (e.g., typically baseline) is divided by the total number of data points, yielding a percentage or ratio (Carlin & Costello, 2021). For the percentage to be considered effective, PND should be between 70-90%. PND greater than 90% is considered to be extremely effective, and less than 70% is considered to be questionable. PND less than 50% is deemed ineffective (Carlin & Costello, 2021). PND was used to measure the effect of both versions of Class Pass on the dependent variables.

Research Question 1

Visual analysis and PND were used to determine to what extent the implementation of CPI with and without rewards affected students' academic engagement and disruptive behaviors. Participant's data were compared between baseline and subsequent intervention phases. Academic engagement was considered the primary dependent variable throughout this study, similar to previous implementations of Class Pass (Collins et al., 2016; Cook et al., 2014; Narozanick & Blair, 2018; Zuniga & Cividini-Motta, 2021). Following the introduction of CPI, a notable change in level change occurred for each participant for both dependent variables. A more detailed analysis for the three participants is provided in the subsequent sections.

Penny

Penny's academic engagement and disruptive behaviors are depicted in Figure 1E. During baseline, her academic engagement during observed intervals averaged 56%. Penny's academic engagement had a decreasing trend as her behavior dropped from 71% to 38% throughout baseline. When looking at the level of Penny's on-task behaviors across all intervention phases, Penny was academically engaged for a mean of 85% of intervals (range = 59 – 95%). Specifically, during the two phases where Penny was receiving CPI without rewards, her average on-task behavior was approximately 85% (range = 59 – 95%), the same as her overall average for intervention phases. During the two phases where Penny was receiving CPI with rewards, her average academic engagement was 84% (range = 76 – 93%). Therefore, Penny's level of academic engagement was 29% higher than her mean academic engagement during baseline. When analyzing Penny's first phase of Class Pass without rewards to baseline, PND fell within the acceptable range for effectiveness at 83% (Carlin & Costello, 2021) as 5 of the 6 data points exceeded the baseline range. A detailed discussion about Penny's performance between the intervention phases will be discussed in the upcoming Research Question 2 section.

When analyzing CPI's effect on Penny's disruptive behaviors, a gradual decrease was noted throughout the study. During baseline, Penny's disruptive behaviors ranged from 65% to 23% with a mean of 43% of observed intervals. Across all Class Pass phases, Penny's disruptive behaviors occurred during a mean of 28% (range = 16 – 49%) of intervals. Specifically, during phases where Penny was receiving CPI without rewards, her disruptive behaviors were exhibited during an average of 29% of the intervals (range

= 16 – 49%). During phases where she was receiving CPI with rewards, Penny's disruptive behaviors occurred during an average of 27% (range = 18 – 41%) of intervals. Comparing baseline to all intervention sessions, Penny's mean percentage of disruptive behaviors decreased by 15%. When comparing Penny's first Class Pass without rewards phase to baseline, Penny's PND was 33% as only 2 of the 6 data points fell below her baseline range. This percentage falls within the ineffective range for an intervention. It should be noted that Penny's behaviors were highly variable within the first two phases of the study. During the final two phases of the study, Penny's disruptive behaviors averaged 23% (range = 22 – 24%) for phase 3 (i.e., CPI without rewards) and 24% (range = 18 – 30%) for phase 4 (i.e., CPI with rewards) of intervention. The variability in her disruptive behaviors decreased during the last two phases of the study and became more stable. More specifically, Penny's level of disruptive behaviors decreased from 43% during baseline to 24% of observed intervals in the last intervention phase.

Kyle

Kyle's academic engagement and disruptive behavior data across all phases are shown in Figure 2E. For the initial baseline observation session, Kyle was academically engaged during 64% of the observed intervals. This percentage increased to 80% in the second session and became more stable for the remaining two sessions. Kyle's academic engagement throughout the baseline phase averaged 74% of the observed intervals, with a range from 64% to 80%. Stability in Kyle's academic engagement over two weeks of baseline data collection indicated readiness for a phase change. In further analyzing Kyle's academic engagement across all intervention phases, his mean of on-task behavior

was 86% (range = 68% - 93%). Specifically, during Kyle's two phases receiving CPI with rewards, his academic engagement averaged 86% (range = 68 – 93%). During the two phases where he received CPI without rewards, Kyle's academic engagement was 88% (range = 84 – 92%). This indicates that on average, the implementation of CPI increased Kyle's average academic engagement by 12%. When evaluating Kyle's performance between baseline and the first CPI with rewards phase, PND was 75% as 3 of the 4 data points exceeded the baseline range which falls within the acceptable range for intervention effectiveness.

Kyle engaged in disruptive behaviors, on average during 40% (range = 26% - 55%) of observed intervals throughout baseline. Across all intervention phases, Kyle's average of disruptive behaviors was 22% (range = 9% - 46%) of the intervals. Specifically, Kyle's mean of disruptive behaviors during the two CPI with rewards phases was 27% (range = 11 – 46%). His average disruptive behaviors in the two CPI phases without rewards was 16% (range = 9 – 23%). This indicates that from baseline to CPI phases, the implementation of CPI decreased his average of disruptive behaviors by 18%. Kyle's PND, when comparing his first CPI phase to baseline, was 25% for disruptive behavior. This PND percentage indicates that Class Pass was ineffective in decreasing Kyle's disruptive behavior. However, visual analysis and changes in Kyle's overall mean data indicate his disruptive behavior decreased throughout the study. That is, his average of disruptive behaviors was 40% (range = 26 – 55%) during baseline and dropped to an average of 13% (range = 9 – 20%) in the final intervention phase.

Sean

Sean's academic engagement and disruptive behaviors data are presented in Figure 3E. When analyzing Sean's performance during baseline, academic engaged behaviors occurred during an average of 54% of intervals, with a range of 41% to 61%. Despite some variability, Sean's academic engaged behaviors depict a relative increasing trend throughout the first three intervention phases. Across all intervention phases, Sean was observed to have been academically engaged during an average of 70% (range = 28 – 96%) of intervals. This is an increase of 16% across the averages of all intervention phases. Specifically, during both CPI phases without rewards, his academic engagement was 72% (range = 44 – 96%). During both phases with rewards, his academic engagement averaged 59% of observed intervals (range = 28 – 79%). Sean's PND for academic engagement between his first Class Pass without rewards phase and baseline was 75%, as 3 of the 4 data points exceeded his baseline range. This percentage is considered acceptable, indicating intervention effectiveness.

When looking at the other dependent variable, Sean engaged in disruptive behaviors for an average of 57% of intervals during baseline, with a range of 45% to 80%. Sean's disruptive behaviors during baseline was high and variable. Across all intervention phases, Sean demonstrated disruptive behaviors for an average of 16% of intervals, with a range from 1% to 36%. This is a 41% decrease between baseline and intervention phase averages of disruptive behavior for Sean. Specifically, for the two phases where Sean received CPI without rewards, his average disruptive behavior was 12% (range = 1 – 24%). For the two phases where he received CPI with rewards, his disruptive behavior was 22% (range = 10 – 36%). When analyzing Sean's disruptive

behavior data between his first Class Pass phase without rewards and baseline, PND was 100% as all 4 data points were below the baseline range. Therefore, Class Pass could be considered very effective at reducing Sean's disruptive behaviors. It should be noted that during Sean's third intervention phase (i.e., CPI without rewards), his average disruptive behaviors were 8% (range = 1 – 19%), the lowest average throughout the study. During his final intervention phase, Sean's disruptive behaviors increased and were extremely variable, occurring during an average of 22% of intervals (range = 10 – 36%).

Research Question 2

To determine whether one version of CPI was more effective at increasing academic engaged behaviors and reducing disruptive behaviors compared to baseline, visual analyses of data were examined and PND was calculated between individual intervention phases. Notable differences between phases across participants was not consistently observed.

Penny

Penny's data indicate little to no difference in averages for both academic engagement and disruptive behaviors across all CPI phases (see Table 1). When comparing both phases of Class Pass without rewards to both phases of Class Pass with rewards, means for both dependent variables across the phases were very similar. When visually analyzing Penny's data in Figure 1E, this notion was further supported as no detectable patterns or differences between the two versions of Class Pass were observed. In addition, PND between intervention phases were analyzed. PND for both academic engagement and disruptive behaviors between Penny's first CPI phase (i.e., without

rewards) and her second CPI phase (i.e., with rewards) was 0%. All the data points overlapped between these two intervention phases. From Penny's second CPI phase (i.e., with rewards) to her third CPI phase (i.e., without rewards), PND was 33% for academic engagement and 0% for disruptive behavior. Only 1 of the 3 data points during Penny's second CP without rewards phase exceeded the range of academic engagement data during her initial CP with rewards phase. Lastly, PND from Penny's third CPI phase (i.e., without rewards) to her final CPI phase (i.e., with rewards) was 0% for academic engagement and 25% for disruptive behaviors. PND between all phases of alternating versions of CPI suggest that there were not significant differences in effect between the two versions of Class Pass on Penny's dependent variables.

Table 1

Penny's Average Dependent Variable Levels Across Treatment Phases

	Class Pass without Rewards		Class Pass with Rewards		Class Pass without Rewards		Class Pass with Rewards	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Academic Engagement	83	13.49	84	7.14	90	4.73	85	3.77
Disruptive Behavior	32	13.72	29	10.28	23	1.00	24	4.92

Kyle

Similar to Penny, Kyle's data did not depict marked differences in academic engagement between the intervention phases (see Table 2). Levels for his academic engagement were fairly consistent across the two versions of CPI. When visually analyzing Kyle's data in Figure 2E, there were few detectable differences in academic

engagement between the intervention phases (see Appendix E). When analyzing Kyle's disruptive behavior data, there are slight differences between CPI implementations. During the two phases where Kyle received CPI with rewards, his average disruptive behavior was 27% (range = 11 – 46%). His average disruptive behaviors in the two CPI phases without rewards was 16% (range = 9 – 23%), indicating an 11% difference. Kyle's reduction in disruptive behavior during phases without rewards may indicate that it is a better version for him.

PND was calculated for Kyle between each intervention phase change. From his first CPI phase (i.e., with rewards) to his second CPI phase (i.e., without rewards), PND for the dependent variable of academic engagement was 25% and for disruptive behavior it was 0%. From the second CPI phase (i.e., without rewards) to his third CPI phase (i.e., with rewards), PND for Kyle's academic engaged behavior was 33% and PND for disruptive behavior was 0%. Finally, between Kyle's third CPI phase (i.e., with rewards) and final CPI phase (i.e., without rewards) PND for academic engagement was 0% and PND for disruptive behaviors was 75%. This is considered an acceptable PND score to determine that an intervention is effective, which is consistent with his mean disruptive behaviors during the phases without rewards, suggesting greater effectiveness for Class Pass without rewards. In addition, if Kyle's disruptive behavior for the eighth session (i.e., during CPI with rewards) were not so low, it would have provided further evidence that Class Pass without rewards were more effective at reducing disruptive behaviors.

Table 2

Kyle's Average Dependent Variable Levels Across Treatment Phases

	Class Pass with Rewards		Class Pass without Rewards		Class Pass with Rewards		Class Pass without Rewards	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Academic Engagement	83	10.15	87	3.95	87	6.56	88	1.83
Disruptive Behavior	31	14.85	19	5.68	23	5.77	13	4.79

Sean

Sean's data did not depict notable differences between CPI phases and their effectiveness at increasing academic engagement and reducing disruptive behaviors. Sean's academic engagement data were following an increasing trend for the first three intervention phases while his disruptive behaviors were decreasing throughout these three phases. However, Sean's target behaviors were highly variable during the last intervention phase, and his academic engagement was not more stable when he was in the two CPI phases where he could exchange unused passes for rewards and the two phases where he could not (see Table 3). Although, there does seem to be a pattern in his disruptive behavior. In the two phases where he could not exchange unused passes, his average for of disruptive behaviors was for 15 % and 16% of intervals. During phases where Sean could exchange passes for rewards, his average of disruptive behaviors was for 20% and 23% of intervals (see Table 3). Further, visual analyses of Sean's graphed data in Figure 3E depict a pattern with his disruptive behavior. A decreasing trend appears during the sessions where he was not permitted to exchange his unused passes for rewards. PND was analyzed between phases to determine effectiveness as well.

PND from the first CPI phase (i.e., without rewards) to the second CPI phase (i.e., with rewards) was 100% for academic engagement and 0% for disruptive behaviors. PND from the second phase (i.e., with rewards) and the third phase (i.e., without rewards) was 50% for academic engagement and 75% for disruptive behaviors. Finally, PND from the third intervention phase (i.e., without rewards) to the final intervention phase (i.e., with rewards) was 0% for both academic engagement and disruptive behaviors. Sean's PND indicate that CPI without rewards was more effective than CPI with rewards, especially in terms of disruptive behavior. Sean refused to take breaks during intervention, therefore, it is difficult to say the change in his behavior was a direct function of the implementation of Class Pass.

Table 3

Sean's Average Dependent Variable Levels Across Treatment Phases

	Class Pass without Rewards		Class Pass with Rewards		Class Pass without Rewards		Class Pass with Rewards	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Academic Engagement	63	12.78	77	3.21	81	14.62	61	28.31
Disruptive Behavior	16	5.50	20	4.04	15	8.08	23	13.01

Research Question 3

To analyze which version of Class Pass was preferred by both teacher and student participants, data from the IRP-15 and CIRP were analyzed. Higher scores on either measure indicates a greater level of acceptability. Scores on the IRP-15 were out of a

possible 90 and scores on the CIRP were out of 42. Participants were also asked directly which version of Class Pass they preferred.

Penny

The school psychologist completed the CIRP with Penny following data collection and intervention phases. For CPI without rewards, Penny's score was a 14 out of a possible 42 points. Her average score per item was a two, which indicated general disagreement with the fairness, acceptability, and helpfulness of the intervention. For the version of CPI with rewards, Penny's CIRP score was a 31 out of a possible 42 points. Her average score per item was a 4.4, indicating general agreeability with the acceptableness of the intervention, apart from the item reading, "Class Pass with rewards will not cause problems with my friends." Penny described to the school psychologist that she disagreed because it caused jealousy for her classmates. When asked which version of CPI that she preferred, Penny's preference was for the version with rewards. Her CIRP data were consistent with her choice of preferred CPI version.

Penny's teacher completed both versions of the IRP-15 independently. For CPI without rewards, Penny's teacher's score was 53 out of a possible 90. This score falls right on the cusp of the range to be considered acceptable. The average score per item reported by Penny's teacher was a 3.5, with most indicating slight agreement. For CPI with rewards, Penny's teacher's score was 41 out of 90, the average rating per IRP-15 at a 2.7. This indicates general disagreement that the intervention is acceptable. Overall, this teacher had a slight preference for the version of CPI without rewards, but still may not find it to be an appropriate intervention to address disruptive behaviors in students.

Kyle

The school psychologist completed both versions of the CIRP with Kyle, approximately three weeks after intervention data collection was completed. For CPI without rewards, Kyle's CIRP score was a 33 out of a possible 42, with an average score of 4.7. These scores indicate treatment acceptability and a degree of agreement with all items on the CIRP. His CIRP score for CPI with rewards was a 34 out of a possible 42 points. The average score per CIRP item was a 4.9, indicating treatment acceptability. Kyle's scores did not fall below a 4, which means that Kyle reported some level of agreement on every CIRP item. Kyle's scores were slightly higher for the version with rewards, but they were not markedly different than scores for CPI without rewards. When asked directly which version he preferred, Kyle reported CPI with rewards. He described to the school psychologist that he was very proud to show his family what he had earned with his passes.

Kyle's teacher completed the IRP-15 for both versions of Class Pass independently. His score for the version of CPI without rewards was 72 out of 90. His average score per item was a 4.8. These scores indicate high treatment acceptability and agreement per item. Kyle's teacher's score for the CPI with rewards was an 82 out of 90 points possible, and his average score per item was a 5.4. Together, these indicated high treatment acceptability and high levels of agreement per item. His teacher indicated preference for CPI with rewards, and his IRP-15 scores align with this preference.

Sean

Sean's CIRP data were not able to be collected due to a change in parental placement. He was unenrolled from the school district before the PI and school psychologist were able to complete the CIRP.

Sean's teacher completed both versions of the IRP-15 independently and returned them to the researchers. For the version of Class Pass where students could not exchange unused passes for rewards, Sean's teacher's score was a 69 (i.e., out of a possible 90), with an average rating of 4.6 per IRP-15 item. She indicated varying levels of agreement across the questions, apart from item 15, which states, "Overall the intervention was beneficial for the child," where she indicated slight disagreement. This response is most likely because Sean did not engage in breaks. For the version of Class Pass with rewards, Sean's teacher's IRP-15 score was a 61, with an average rating of 4.1 per item. His teacher indicated slight disagreement on the same item as the previous IRP-15, but she also indicated slight disagreement on the item, "This was an acceptable intervention for the child's problem behavior." This may have been because Sean was not engaging in the breaks but was still able to exchange his unused passes for rewards in this phase. Overall, Sean's teacher indicated that her preference was for Class Pass without rewards.

Chapter 4

Discussion

This study examined if a version of Class Pass was more effective at improving student performance and if one was more preferred by staff. CPI includes elements of positive reinforcement, negative reinforcement, and choice which are impactful for a variety of behavioral functions. The version of Class Pass with rewards, where students

can exchange unused passes for backup reinforcers, includes more materials and added steps of intervention. Thus, if this element does not yield greater effects, the version of CPI without rewards may be better suited for a standard protocol approach to Tier II behavioral interventions in schools. Several findings were discovered in this study that warrant discussion.

Research question one asked whether either version of CPI was effective at increasing academic engagement and reducing disruptive behaviors for elementary students. Results suggest both versions of CPI were effective at increasing academic engagement and decreasing disruptive behaviors. That is, when examining academic engagement, all three participants increased their on-task behaviors when CPI was implemented. Specifically, Penny's mean academic engagement increased 29% from baseline to CPI phases, Kyle's mean academic engagement increased by 12%, and Sean's mean academic engagement increased 16% even though he never exchanged a Class Pass during the study. When evaluating the participants' percentage of nonoverlapping data points for academic engagement, Penny's PND was 83%, Kyle's was 75%, Sean's PND was 75% from baseline to the initial intervention phase, which are all within an acceptable range for effectiveness.

When examining disruptive behaviors within the context of the first research question, CPI implementation resulted in decreases across all participants. Penny's mean disruptive behaviors decreased by 15% from baseline to CPI phases, Kyle's mean disruptive behaviors decreased by 18%, and Sean's mean decreased by 41%. When evaluating PND for participants' disruptive behaviors, Penny's was 33%, Kyle's was

25%, and Sean's was 100%. These effect sizes are more questionable given that Penny and Kyle's PND were not within an acceptable range.

It should be noted that Sean did not voluntarily engage in the intervention. That is, he was willing to collect a reward for his unused passes when the school psychologist offered during the appropriate weeks, but Sean did not choose to engage in any breaks. Sean was still offered his break passes daily throughout all CPI phases and his teacher reported 100% fidelity on each checklist that she completed on intervention days. An increase in Sean's academic engagement and a decrease in his disruptive behaviors were observed throughout the study, despite him never using a pass. It was discerned that perhaps the option to take a break despite never needing (i.e., his teacher reported that she never felt the need to enforce that he takes a break) or taking one, may have proven effective for behavior change for him. Thus, the element of choice within the CPI may have been most effective for Sean. In addition, Sean's dependent variable changes may also be explained by rule-governed behaviors. Sean was trained on the intervention and explained that if he was being disruptive or making poor choices for his behavior in class and not using a break, that his teacher could enforce that he used one. His understanding of this rule and the contingencies associated with breaking it ultimately may have caused the reduction in his disruptive behaviors, even though it was never enforced that Sean takes a break throughout intervention conditions (i.e., he never faced the established contingency). This is essentially the definition of rule-governed behaviors (Miltenberger, 2008; Sturmy et al., 2020). Finally, Sean experienced several absences during data collection, which cause several shortened phases and schedule adjustments.

Overall, these data suggest that CPI could be responsible for the increases in academic engagement and decreases disruptive behavior across participants. These findings are consistent with all previous applications of Class Pass. This effect could be due to the components of CPI that can address various functions of behaviors (Collins et al., 2016; Cook et al., 2014; Narozanick & Blair, 2018; Zuniga & Cividini-Motta, 2021). Including intervention components that can address multiple functions of behavior, especially when the function of behavior is unknown, ensures that you are addressing the function in some capacity. Since this application of CPI demonstrated that it is not necessary to know or analyze the hypothesized function of students' behaviors to see positive effects, this study supports Class Pass as acceptable intervention for a standard protocol approach to Tier II. These results continue to suggest that CPI may address both attention and escape-maintained behaviors, because the function of Penny, Kyle, and Sean's disruptive behaviors were unknown. Additionally, allowing students to escape unwanted tasks in a socially acceptable manner has also proven effective in past literature (Collins et al., 2016), and may explain why CPI was effective across participants, grade levels, genders, and race. This is consistent with past research findings (Collins et al., 2016; Cook et al., 2014; Narozanick & Blair, 2018; Zuniga & Cividini-Motta, 2021), where Class Pass has been effective with diverse populations of students.

Research question two examined if one version of Class Pass would be more effective than the other version at producing desired student outcomes. Specifically, the added element of students being able to exchange their unused break passes for backup reinforcers was evaluated to see if more robust intervention effects would be produced.

Penny's data did not indicate notable patterns in level or trend when comparing the two versions of CPI, one with rewards and one without rewards. Her PND scores between each of the reversals within intervention phases were not within an acceptable range. Kyle's academic engagement data presented similar results as Penny, but his disruptive behavior data suggest CPI without rewards may have been more effective. Kyle's mean percentage of intervals engaged in disruptive behaviors during CPI without rewards was lower (i.e., nearly 11%) than the mean for CPI with rewards. The PND score from Kyle's third and fourth phases of Class Pass were within an acceptable range when looking at his disruptive behaviors, which may further indicate that CPI without rewards was more effective. However, there is little differentiation in Kyle's overall data to support this.

Sean's data follow a similar pattern as Kyle. That is, no difference was found between CPI versions with regard to academic engagement. However, Sean's disruptive behavior was slightly lower during Class Pass without rewards. Sean's behavior returned to baseline levels in his fourth intervention phase. Despite some acceptable PND ranges across variables and between some phases of CPI, Sean's data are too variable to say any differences are the result of either version of CPI. In addition, Sean did not take a break throughout the intervention phases, so his data may not be fully representative of the effectiveness of Class Pass. Although, his performance may support that the option to take breaks is sufficient to produce behavior change. Finally, counterbalancing which version participants received first also did not produce a significant difference. Penny and Sean began with CPI without rewards and Kyle started with CPI with rewards. Therefore,

the findings of this study did not suggest a difference in effectiveness between Class Pass with rewards and Class Pass without rewards.

These data indicate, consistent with the findings of Narozanick & Blair (2018), that the backup reinforcement element of CPI is not necessary to produce the desired results of the intervention. This is important when schools are looking to adopt the standard protocol approach to Tier II, as the backup reinforcement element results in a lot of individualization of rewards and rules for backup exchange. Eliminating this element has the potential to make CPI a stream-lined intervention that is easy to implement, as all students would follow the same rules and the only necessary element is allowing them daily break passes to take breaks at times of their choosing. Streamlining CPI this way then further establishes it as an effective, simple intervention that can easily for standard protocol frameworks.

Treatment acceptability ratings were inconsistent across raters and versions of Class Pass. For student participants, both Penny and Kyle indicated a preference for Class Pass with rewards. For teacher participants, Kyle's teacher indicated preference for Class Pass with rewards, while both Penny and Sean's teachers indicated preference for Class Pass without rewards. These results are variable, but it is interesting that two of the three teachers reported CPI without rewards to be the preferred version. The creators of Class Pass (Cook et al., 2014) predicted that teachers would find it unfavorable to allow students to take breaks at any time, because students had the potential to miss out on 30 minutes of instructional time each day. In addition, they predicted that adding an incentive to remain in the room would combat this and increase treatment acceptability

for teachers. This element had never been explored through treatment acceptability measures in past applications, but ultimately it is difficult to say whether one version of Class Pass was preferred in terms of acceptability. Consistent with previous CPI applications, participants mostly found that the treatments were acceptable, regardless of the inclusion of rewards. This finding is also important when CPI is being considered for a standard protocol Tier II intervention.

Implications

There are important implications that can be taken from this study. First, the findings of this study expand the literature base on Class Pass, further demonstrating effectiveness when implemented with diverse student populations. For example, previous applications of Class Pass had never been implemented with a female student. The current study demonstrates effectiveness across genders and expands the evidence-base for use with elementary aged students. Next, this study contributed to the literature base by demonstrating that Class Pass is effective when FBAs have not been conducted and the function of behavior is unknown (Collins et al., 2016). These findings together demonstrate that CPI is a good option for a standard protocol approach to Tier II of PBIS.

Findings from this study did not support one version of CPI being superior to the other. Social validity results suggested a stronger teacher preference for CPI without rewards, but a stronger student preference for CPI with rewards. Student data indicated some evidence of CPI without rewards demonstrating greater efficacy in reducing disruptive behavior, but data are variable. Results suggesting that both CPI versions produced similar outcomes may be helpful for individuals considering implementing

Class Pass. They may want to opt for CPI without rewards as this version is simpler. More specifically, CPI without rewards requires less materials and planning, it has been shown to be just as effective as Class Pass with rewards, and teachers more often preferred this version over CPI with rewards. As discussed previously, teachers are often implementing interventions with students and greater ease of implementation yields better results for a standard protocol approach to Tier II.

Limitations and Future Research

The most impactful limitation to this study was Sean's behavior throughout Class Pass sessions. Specifically, Sean was offered his three passes each morning upon arriving to his classroom, but he never chose to engage in a break. His teacher's fidelity checklists do not indicate that she ever felt that Sean's behaviors escalated to the point of needing to enforce a break, and each day that she completed the pass tracking (i.e., for 87% of intervention days), she indicated that 0 break passes were used. Data collection continued for Sean due to the change in dependent variables that was noted with the systematic implementation of Class Pass. His data were stable for several weeks throughout intervention, but during the final phase, there was a notable return to baseline for one observation session. Sean also had several absences throughout the study, and his schedule had to be adjusted multiple times based on those absences and stability of his data. Because Sean's data were indicative that CPI had some desired effect on his behaviors, as mentioned previously, it may support that providing students the option or choice to take breaks may be sufficient to improve student behaviors in schools. Further research on choice and its implications in the school environment should be explored.

Sean's data also indicated that his changes in the dependent variable may have been the result of self-imposed rule-governed behavior when he received training on CPI. It is necessary to describe to student participants that teachers may take passes if students are acting inappropriately, but this may create rule-governed behaviors. It is difficult to say whether Sean's behavior was a result of this, but further exploration into rule-governed behavior with Class Pass training should also be explored.

The school environment in general provided the next limitation to this study because researchers were unable to control for several potential confounding variables. For example, despite observations taking place for each student at a similar time of day, activities that the class was engaged in during these times varied significantly across sessions. Penny's class would sometimes be reading a story or sometimes be working independently on a work sheet. Sean's class alternated between small group instruction with the teacher and with peers, and his behavior was notably different when his group was slated to work with the teacher. Researchers combatted this by completing the observations around the same time of day, while also observing students in the same order throughout all data collection phases.

Another limitation of this study was the instability of teacher participants. The teacher who carried out the intervention for Penny was not the same teacher who nominated her as a candidate for CPI and originally volunteered. Although the new teacher began at a time that did not present a confound for the implementation of Class Pass, and she graciously agreed to carry out the intervention anyway, it was not necessarily her choice. Buy-in and fidelity may have been affected. Similarly, Kyle had a

substitute teacher carry out the final week of his intervention phases, due to his teacher's emergency leave. The substitute teacher received a brief explanation and training session on Class Pass to deliver it to Kyle for the week, and she filled out the checklist indicating 100% implementation fidelity for that week.

The next limitation is that this study only included three participants, one of whom was not engaging in the intervention. Limited number of participants and participant participation presents difficulty for generalizability of the results. Attempts were made to recruit students in districts in both Minnesota and Wisconsin. Lack of teacher interest proved to be a barrier in Minnesota and of the seven nominated students from chosen Wisconsin school, only three parents consented to CPI. Parental consent was also a barrier to attaining more participants. In addition, the three participants in this study were representative of three different grade levels (i.e., 3rd, 4th, and 5th), which could also result in another confound for the generalizability of the results. Differences in age and grade level may have impacted the engagement with Class Pass. For example, Sean was the eldest participant in the study, and he did not engage in Class Pass, which represents a potential age effect.

A final limitation was the number of IOA data that were able to be collected across all phases and all participants. The PI and school psychologist were only able to collect IOA data for 23% of all observation sessions. Several times, the school psychologist collected data independently from the PI, therefore both researchers completed independent observations for each student at different times throughout data collection. The school psychologist attained 92% IOA during training, so it was

acceptable for her to complete independent data collection. High levels of IOA (range = 84 – 100%) attained during baseline and CPI phases mitigates the confound of lack of recommended number of IOA sessions. Future research should still include more IOA sessions, especially with further comparison of the specific elements within each version of Class Pass.

Ultimately, future research should continue to examine the effectiveness of Class Pass in the context of a standard protocol approach to Tier II. Further exploration into whether the backup reinforcement element of CPI is necessary to produce desired results is warranted. Future research should also consider isolating the element of choice in the intervention, to determine if that component is what is most effective for Class Pass. Previous applications have called for examination of the components of CPI and determining which were most effective, and to further support intervention development within Tier II. This study supports that the escape component (i.e., the ability to take breaks) alone is effective in itself, but isolating choice from that may provide more information regarding effective Tier II interventions in school. Future research should also focus on larger sample sizes and more females for Class Pass implementation, to further expand on the generalizability of the intervention.

Conclusion

This study demonstrated the effectiveness of both versions of Class Pass at increasing academic engagement and reducing disruptive behaviors. It also revealed that CPI is a socially valid Tier II intervention for a variety of behaviors and behavioral functions, and the added element of being able to exchange unused break passes for

rewards or backup reinforcers may not be necessary to produce the desired results of the intervention. This is important for Tier II intervention delivery, and specifically the standard protocol approach to Tier II, because eliminating that element results in greater ease of implementation, streamlined rules for implementation, and fewer resources used by a school to operate effectively within Tier II.

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Appendix A

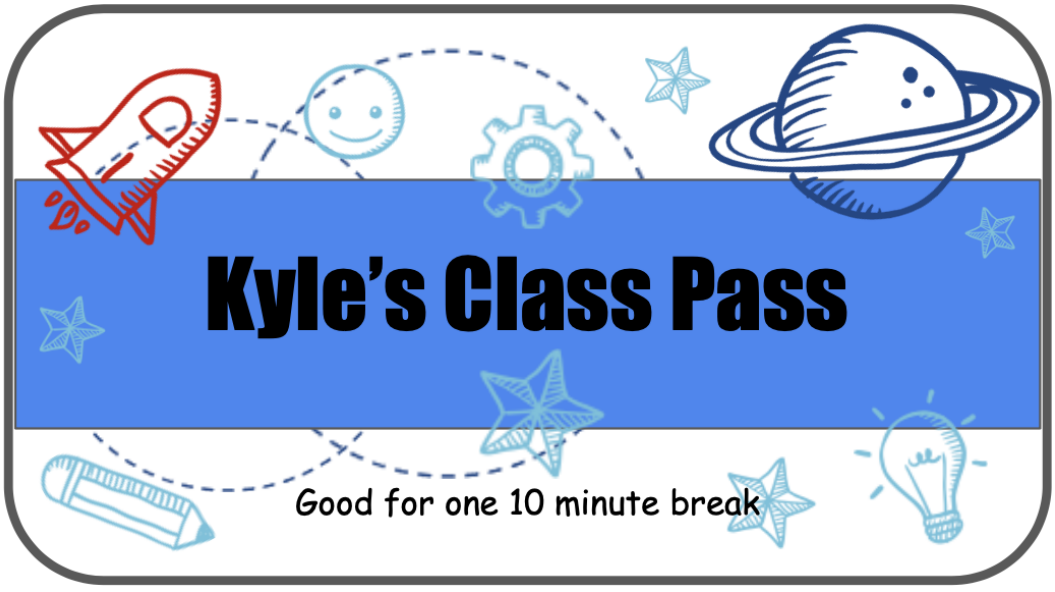
Break Passes for Class Pass

Figure 1A.

Penny's class pass

Figure 2A.

Kyle's class pass



Appendix B

Preference Assessment Sample

Figure 1B.

Preference assessment for break activity options

Break Activity Assessment

Please draw a star next to the choices that you would like to have when you take breaks:

1. Reading a book or magazine
2. Stretching
3. Coloring or drawing
4. Helping the school secretary
5. Playing with fidgets
6. Movement break in the hallway
7. Talking to a trusted teacher or staff member
8. Sitting quietly
9. Working on something else
10. Laying down on the floor

Appendix C

Class Pass Schedule

Figure 1C.

Teacher's weekly schedule including phase, fidelity checklist, and pass tracker

Penny's Class Pass - January 30-February 3rd, 2023				
This week - Class Pass w/ **NO** Rewards				
Monday - 1/30	**Tuesday - 1/31**	**Wednesday - 2/1**	**Thursday - 2/2**	**Friday - 2/3**
Daily Fidelity Check: **place an "x" next to each item if it occurred**	**Daily Fidelity Check:** **place an "x" next to each item if it occurred**	**Daily Fidelity Check:** **place an "x" next to each item if it occurred**	**Daily Fidelity Check:** **place an "x" next to each item if it occurred**	**Daily Fidelity Check:** **place an "x" next to each item if it occurred**
1)___ Distribute 3 class passes to Penny's desk before school day begins.	1)___ Distribute 3 class passes to Penny's desk before school day begins.	1)___ Distribute 3 class passes to Penny's desk before school day begins.	1)___ Distribute 3 class passes to Penny's desk before school day begins.	1)___ Distribute 3 class passes to Penny's desk before school day begins.
2)___ Teacher prompted Penny to use class pass if she began to display any disruptive behavior.	2)___ Teacher prompted Penny to use class pass if she began to display any disruptive behavior.	2)___ Teacher prompted Penny to use class pass if she began to display any disruptive behavior.	2)___ Teacher prompted Penny to use class pass if she began to display any disruptive behavior.	2)___ Teacher prompted Penny to use class pass if she began to display any disruptive behavior.
3)___ When Penny used a pass, she went directly to break location and engaged in appropriate break activity.	3)___ When Penny used a pass, she went directly to break location and engaged in appropriate break activity.	3)___ When Penny used a pass, she went directly to break location and engaged in appropriate break activity.	3)___ When Penny used a pass, she went directly to break location and engaged in appropriate break activity.	3)___ When Penny used a pass, she went directly to break location and engaged in appropriate break activity.
4)___ Penny returned directly to classroom after break time ended.	4)___ Penny returned directly to classroom after break time ended.	4)___ Penny returned directly to classroom after break time ended.	4)___ Penny returned directly to classroom after break time ended.	4)___ Penny returned directly to classroom after break time ended.
5)___ Teacher records how many passes Penny used at the end of the day.	5)___ Teacher records how many passes Penny used at the end of the day.	5)___ Teacher records how many passes Penny used at the end of the day.	5)___ Teacher records how many passes Penny used at the end of the day.	5)___ Teacher records how many passes Penny used at the end of the day.
	****School Psych Data Collection Day****		****School Psych Data Collection Day****	
Total # of passes used today_____/3	**Total # of passes used today_____/3**	**Total # of passes used today_____/3**	**Total # of passes used today_____/3**	**Total # of passes used today_____/3**

Appendix D

Class Pass Direct Observation Data

Student Name: _____ **Observer(s):** _____

Date of Observation: _____ **Time Observed:** _____

D = column for recording ***disruptive behavior*** for each 15s interval (partial interval recording – if any disruptive behaviors occur *during* those 15s, mark a "1" in the D-column of that interval. If no disruptive behaviors occur during the 15s, mark a "0" in the D-column of that interval).

E = column for recording ***academic engagement*** at the end of each 15s interval (momentary time sampling – if at the *end* of each 15s, the student is engaged in what is expected for their class during that time, mark a "+" in the E-column of that interval. If the student is off-task, mark a "-" in the E-column of that interval).

If the student uses a class pass and takes a break during the observation, mark all intervals the student engaged in a break with a "B".

D	E	D	E	D	E	D	E	D	E	D	E	D	E	D	E	D	E	D	E	D	E	D	E
0:15		0:30		0:45		1:00		1:15		1:30		1:45		2:00		2:15		2:30		2:45		3:00	
3:15		3:30		3:45		4:00		4:15		4:30		4:45		5:00		5:15		5:30		5:45		6:00	
6:15		6:30		6:45		7:00		7:15		7:30		7:45		8:00		8:15		8:30		8:45		9:00	
9:15		9:30		9:45		10:00		10:15		10:30		10:45		11:00		11:15		11:30		11:45		12:00	
12:15		12:30		12:45		13:00		13:15		13:30		13:45		14:00		14:15		14:30		14:45		15:00	
15:15		15:30		15:45		16:00		16:15		16:30		16:45		17:00		17:15		17:30		17:45		18:00	
18:15		18:30		18:45		19:00		19:15		19:30		19:45		20:00		20:15		20:30		20:45		21:00	

D = # of D-intervals marked "1"/80: **E** = # of E-intervals marked "+"/80: **IOA** = # of intervals in agreement/80:

Appendix E

Graphed Results

Figure 1E.

Penny's Results

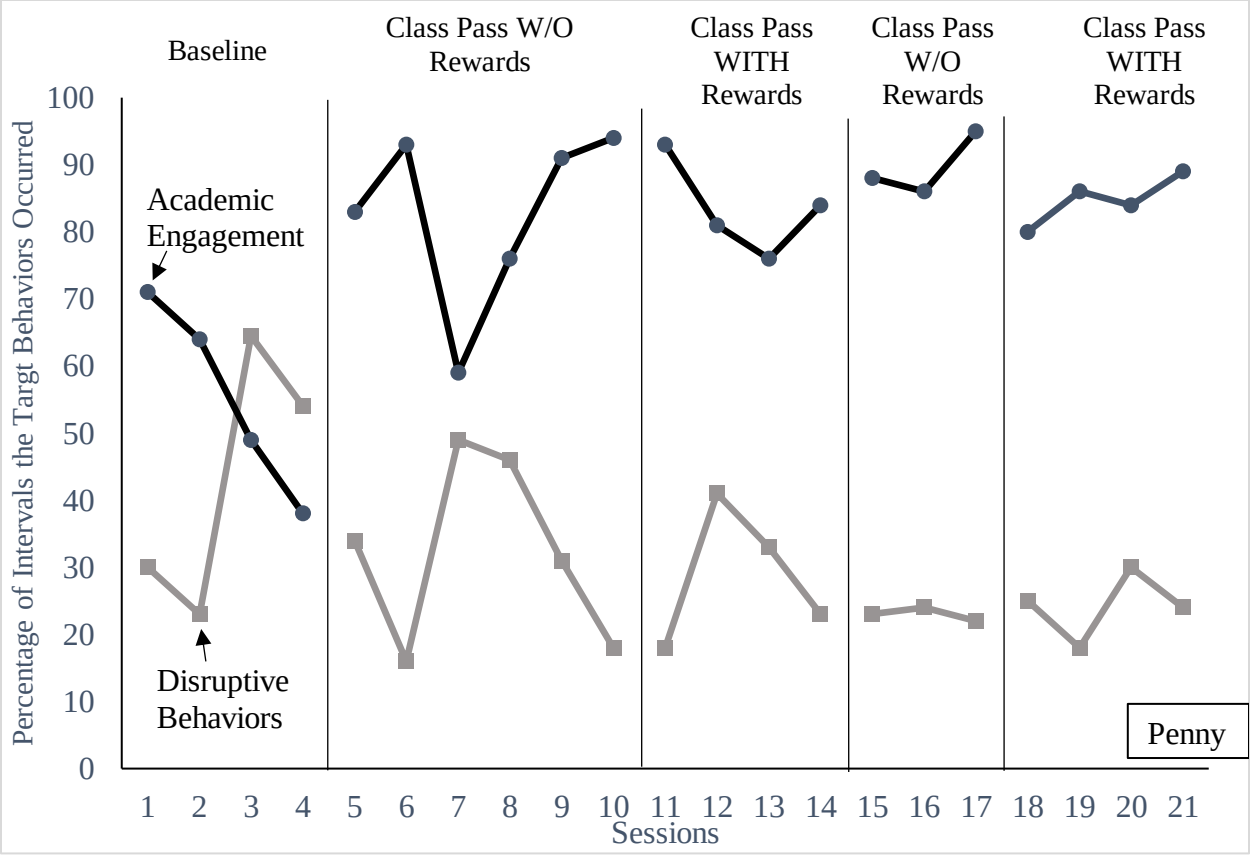


Figure 2E.

Kyle's Results

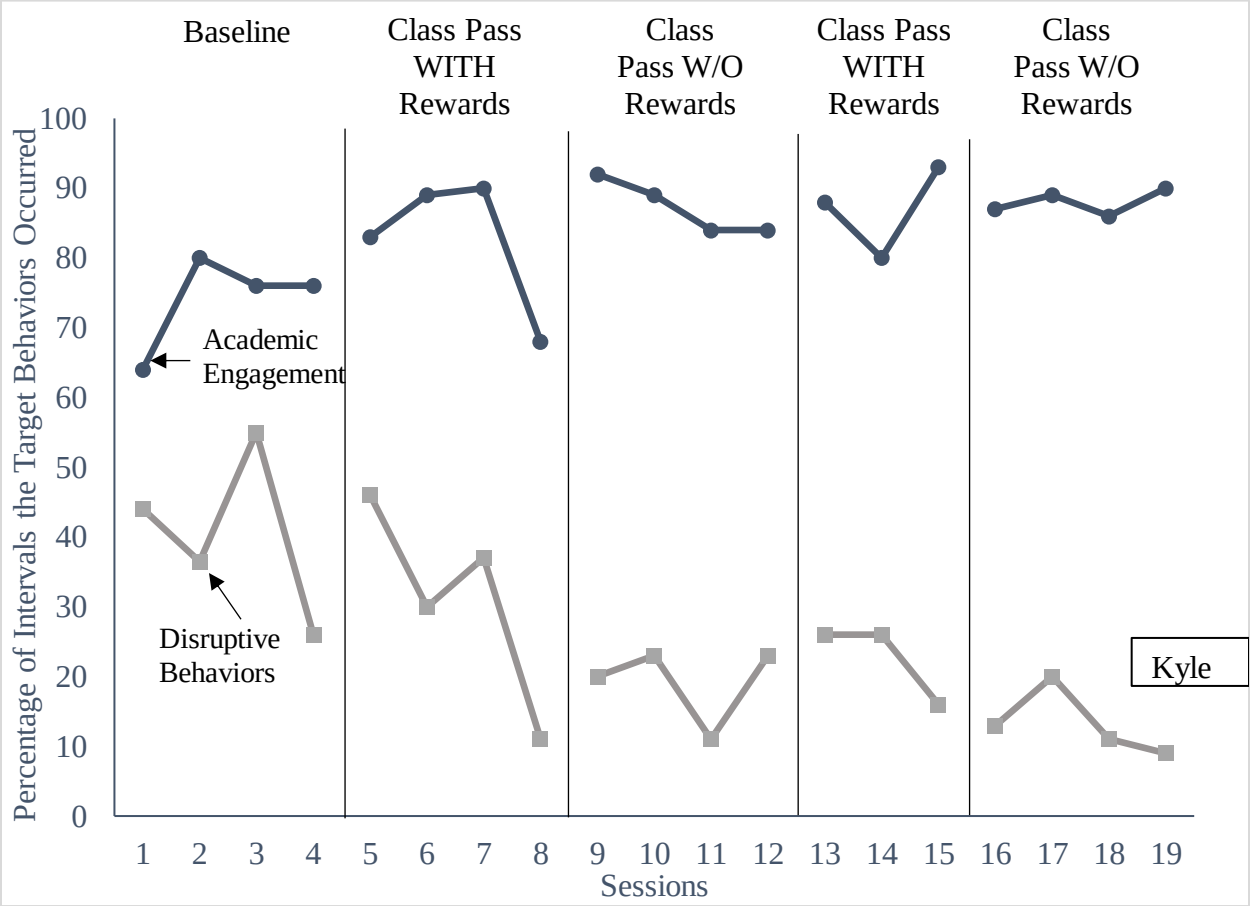


Figure 3E.

Sean's Results