Bethel University

2023

# Responding to Disruptive Behaviors in Educational Environments

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## Recommended Citation

RESPONDING TO DISRUPTIVE BEHAVIORS IN EDUCATIONAL ENVIRONMENTS

A MASTER'S THESIS

SUBMITTED TO THE FACULTY

OF BETHEL UNIVERSITY

BY

KELSEY BLACK

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

MASTER OF ARTS IN EDUCATION

MAY 2023

BETHEL UNIVERSITY

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May 2023

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Abstract

Disruptive behaviors are a key factor in classroom management and student progress. Current research focuses on identifying the antecedents for such behavior in order to determine the style of intervention that will best support the student in self regulation and striving toward positive behaviors. Staff response to behavior is impactful on how students operate in the classroom. This paper and the accompanying application materials review recent studies on the subject and organize them into useful training to support school staff in choosing appropriate interventions for their students. Interventions for both general and special education students were surveyed and synthesized to make the training accessible for teacher and staff in all school roles.

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**CHAPTER I: INTRODUCTION**

Behavior management is the cornerstone of any well-functioning classroom. In recent years, teachers have rated behavioral difficulties as the main obstacle to instructional progress (Bruhn et al., 2017). Disruptive behaviors not only derail the learning of the disruptive student, but they also impact the learning of their peers and the flow of instruction (Dunlap et al., 2010). Lower-level behaviors, such as talking out of turn, making unexpected noises, or quiet refusals, may have limited effects on peers' learning while still affecting the overall learning environment. Higher-level behaviors, like verbal aggression, property destruction, self-injury, or physical aggression against others, derail learning for longer periods of time and can make for a traumatic classroom environment. In special education and general education classrooms with many unique learners, staff must seek to balance the needs of the disruptive students and their peers while keeping everyone safe (Sobeck & Reister, 2020).

Positive behavior supports are currently considered the best response to these disruptive behaviors. The literature has well documented that admonishments, shaming, and punishments have negative effects on student well-being (Caldarella et al., 2021). This style of response negatively impacts the teacher-student relationship and can lead to the student feeling unsafe at school, contributing to the cycle of misbehavior. Caldarella and others (2021) found that reprimands did not decrease unwanted behavior and did not build a strong teacher-student relationship. On the other hand, positive behavior support systems are found to decrease the intensity and frequency of unwanted behaviors in addition to building a strong teacher-student relationship (Norozanick & Blair, 2019). The Positive Behavior Intervention and Supports (PBIS) system is pervasive in the U.S. education system and considered a best practice in

response to disruptive behavior; PBIS has been shown to decrease problem behaviors and increase academic progress (Bruhn et al., 2017).

PBIS offers three tiers of support to students, and decision-making at each part of the process is made by reviewing concrete data (Feinberg et al., 2021). Tier one addresses the proactive support of all students within the classroom, tier two provides more in-depth support for at-risk individuals, and tier three is for students who need very individualized support (Feinberg et al., 2021). This system has been shown to be effective in general education and special education classrooms. While the idea of positive behavior support is important in all classrooms, special education staff need to have in-depth knowledge of those higher-level, individualized supports; these include differential reinforcement, lower-slower-less, and function-based interventions (LeGray et al., 2013).

Readers should know terms related to behavior intervention and management to support their comprehension of this work. A target behavior is a behavior that a student exhibits that the team is targeting to extinguish. These may be lower level behaviors that disrupt their learning (work avoidance, procrastination) or they may be higher level that also disrupts the learning of others (yelling, physical aggression). An antecedent is whatever happens directly before a behavior occurs. Antecedents may also be referred to colloquially as a trigger. Consequences are what happens directly after a behavior. These may be assigned by a staff member or natural consequences (i.e. if a student elopes the consequence is that they avoid a task demand for a period of time. Other terms related directly to the subject of some sources will be defined as the source is reviewed in chapter II. Many acronyms are used in the behavior intervention world and will be used after being defined in each section.

**Research Questions**

The guiding question for this thesis is: How can school staff respond to challenging behaviors across environments? While exploring this question, there will be three areas of focus. First, the use of positive behavior supports across educational environments, age groups, and functional levels must be considered. Second, targeted interventions considering specific behaviors present in general education and special education classrooms will be explored. Third, the role of intensive interventions will be considered for students who show severe or dangerous behaviors and are resistant to conventional interventions.

## CHAPTER II: LITERATURE REVIEW

Upon researching this subject, there were two types of research to be focused on. Synthesis style research papers and individual studies. Simonsen and colleagues did a large synthesis study on evidence-based practices for classroom management (Simonsen et al., 2008). Looking at past research, they found 20 evidence-based practices that had sufficient supporting research to show they may be effective in today's classrooms. Included studies had to have clear procedures outlined in the research, use empirical validation, use accepted experimental designs, and be replicable. The following practices had multiple supporting studies considered valid by Simonson and colleagues. Brief descriptions will be included here as these practices will be explored more deeply using additional research later in this paper. Maximize structure: This includes using the classroom's physical arrangement and structured teaching arrangements to support student independence and the following of routines. Active supervision: This strategy includes posting rules, actively teaching how students can meet expectations, reviewing those expectations daily, and providing feedback on whether students are meeting those expectations. Actively engaging students: These strategies use active engagement to encourage positive interactions, including opportunities to respond (OTR), response cards, direct instruction of needed skills, computer-assisted instruction, classwide peer tutoring, and guided notes. Using a continuum of strategies to reinforce wanted behaviors: specific and targeted praise, classwide group contingencies, behavioral contracts, and token economies. Using a continuum of practices to avoid reinforcing unwanted behaviors: error correction, performance feedback, differential reinforcement, planned ignoring, contingent praise, response cost, and time out from reinforcement. Simonson and colleagues (2008) identified that future research should include varied sample sizes and environments for exploring the utility of these interventions across

learning environments and age groups.

School Wide Positive Behavioral Interventions and Supports (SWBPBIS) uses a system of evidence-based responses to student behavior, designed to decrease undesired behavior and increase expected behaviors (Norozanick & Blair, 2019). This system has three tiers of actions, categorized by the type of behaviors and the level of support needed to respond. While there are several evidence-based strategies on each tier, this study focused on tier two interventions. Tier two supports are supplementary and a step above interventions used universally with all students. The strategy tracked in this study is the Class Pass Intervention (CPI) (Norozanick & Blair, 2019). The first component of CPI is to give Class Passes to disruptive students, allowing them to take a break from academic demands when they give the teacher a pass (providing negative reinforcement for asking for a break). Since the students are given a certain number of passes, component two involves the students being able to exchange passes they didn't need for a preferred reinforcer (providing positive reinforcement for not using the pass/needing a break). This study aims to test the usefulness of the intervention on students with disabilities, since three past studies have focused on those without disabilities (Norozanick & Blair, 2019). The research question was as follows: to what extent would the CPI impact student behavior of those who were not responding to tier 1 intervention? The researchers also wanted to explore if component one of the intervention may be able to stand on its own, without the positive reinforcement provided by component two. The research team hypothesized that the CPI would be effective with students who needed tier two support and that component one of the intervention would be able to stand on its own as a support (Norozanick & Blair, 2019).

The sample included three elementary students in three different classrooms at the same school (Norozanick & Blair, 2019). Two of the students received services under the Autism

disability category, and one was classified with a speech-language delay. Functional behavioral assessments (FBAs) for the students found the function of their behavior to be escaping unpreferred academic tasks. They were selected for the student due to the presence of disruptive behavior and the function of escape, which CPI is specifically designed to address. Behavior data from teachers was collected using the Individualized Behavior Rating Scale Tool (IBRST) in addition to observational data.  This is a five-point Likert style scale. Baseline data was collected during whole group instruction, while teachers used pre-existing interventions. Teachers and students were then given a 30-minute training on the intervention. This was followed by a period of baseline data collection for the target behavior. Finally, data was collected during a fading of the intervention, in which the students received fewer passes. Results were given as percentage intervals of academic engagement during observation periods and percentage intervals of disruptive behavior during those times. The results showed that, for all three subjects, the use of component one of the CPI aligned with increases in on-task behavior and decreases in disruptive behavior. The team initially planned to introduce component two, but component one was so effective on its own, further reinforcement was not needed for these students. The research team advised that the second component may be necessary for those behaviors that are maintained by social reinforcement rather than negative reinforcement in the form of escape like these students (Norozanick & Blair, 2019). Future studies should look at component two, follow larger numbers of students, and examine different educational environments.

For a bird's eye look at School Wide Positive Behavior Supports (SWPBS), Sobeck and Reister synthesized the preventive strategies explored in past literature and broke them into ten concepts that can be used in any classroom (Sobeck & Reister, 2020). Literature was chosen from evidence-based, peer reviewed content that referenced SWPBS and Multi-Tiered System of

Support (MTSS). The same guidelines were used as the Simonson study, in addition to a time limit of studies 20 or less years old. The first five strategies were prevention-based. The first strategy explored through the literature was the use of choice, including choosing the sequence of events, type of learning (large group, small group, independent), or reward. Second, increasing the predictability of the classroom environment is another strategy through visual schedules/timers, color coding, creating visual boundaries, and structured activity stations. Using scheduled non-contingent attention was the third strategy for use when behavior is motivated by attention. The teacher schedules time throughout the day to give the student positive attention regardless of the challenging behavior, thus ensuring their need for attention is met to decrease the challenging behavior. Precorrection is the fourth tool, in which the teacher pre-teaches the desired behavior before the student is presented with the opportunity to engage in predictable undesired behavior. The student is provided reinforcement during the teaching phase for not engaging in the undesired behavior when the opportunity is presented.  Fifth is the high probability request sequences system, uses the concept of behavioral momentum to influence a students behavior. The student is presented with several prompts they are likely to respond appropriately to in quick succession, followed by a prompt they are not likely to comply with. The teacher provides reinforcement for each instance of compliance using the positive reinforcement from the previous prompts to encourage compliance to the undesired prompt.

The final five strategies were instructional-based. Providing students positive opportunities to respond (OTR), using positive and negative reinforcement to increase desired behaviors, giving behavior-specific praise, using mystery motivators to gamify behavior improvements, and using good behavior games to provide reinforcement using the game rules. OTR and reinforcement strategies will be explored further later in this paper.

Caldarella and colleagues conducted a short-term longitudinal study on the use of teacher reprimands in response to disruptive behaviors (2021). Many teachers resort to this when the appropriate positive behavior supports are not in place. The research team explored four research questions relating to reprimands and students at risk for emotional behavioral disorders (EBD). Do teacher reprimands decrease disruptive behavior? Are future teacher reprimands increased by student disruptive behavior? Do reprimands increase engagement? Are future reprimands increased by a lack of student engagement? The research team predicted that teacher reprimands would correlate negatively with students' engagement and positively with disruptive behavior (Caldarella et al., 2021). Three hundred eleven student participants in Missouri, Tennessee, and Utah were selected from 19 elementary schools. All were considered at-risk for EBD using the Systematic Screening for Behavioral Disorders (SSBD). Researchers used direct observations to compile data on student engagement, disruptive behavior, and teacher reprimands using the MOOSES handheld computer system (Caldarella et al., 2021). Researchers collected frequency data on disruptive behavior and teacher reprimands while also collecting duration data on student engagement. This was accomplished by observing students identified as at-risk by the SSBD in 15-minute sessions within whole group instruction. The time of day and subject were kept consistent. Videos were taken from the session so that they could be coded by other researchers (with 85% inter-researcher accuracy) (Caldarella et al., 2021).

A cross-lag model was used to analyze the three variables over three weeks of observation, showing both frequency and percentage during each observational session (Caldarella et al., 2021). Results showed that teacher reprimands and student engagement were negatively correlated, while student engagement and praise were positively correlated. Teacher reprimands and student disruptive behaviors were positively correlated to a small but statistically

significant degree (Caldarella et al., 2021). Researchers found in this study that reprimands were more common than praise and that reprimands were commonly associated with escape-related behavior (Caldarella et al., 2021). Reprimands did not improve engagement or positively impact disruptive behavior. Therefore the researchers deem them as an ineffective intervention for students at risk for EBD (Caldarella et al., 2021).

Research into more severe disruptive behaviors can be addressed by individual case studies. A review of differential reinforcement of other behavior (DRO) and differential reinforcement of alternative behavior (DRA) was completed by Beare (2003) in this manner. This study aimed to determine if DRA and DRO could be employed to reduce stereotypic behavior to help a male with developmental delays who displays self-injurious behavior to work outside a highly controlled setting for the first time (Beare, 2003). Researchers asked whether DRA could be used to teach functional behavior while using DRO to decrease maladaptive behaviors. The team predicted that DRA and DRO could combine to increase positive behaviors and decrease self-injurious and stereotypical behaviors. The subject was selected due to his presence in a segregated workshop environment for work training combined with his status in the severe profound developmental delay range (Beare, 2003). He could not complete self-care, used limited language, and showed many Autism-ike characteristics. He required around-the-clock supervision due to his decision making abilities and tendency to self injure. Interviews with the students' staff were completed to gather anecdotal information about his behavior while a functional behavior assessment was run in his adapted work classroom. His most common maladaptive behaviors were self injurious behavior (SIB, head hitting) and clothing manipulation (Beare, 2003).

Baseline data were collected on the frequency of these behaviors, in addition to the use of

positive stimulus (food reinforcer) which was already in place in his program. Four dependent variables were tracked: SIB slapping, on-task behavior, clothing manipulation, and self-restraint (Beare, 2003). The subject's job coach was trained in the data collection measures and took data when working 1:1 with him through the full duration of his work program (six hours with lunch and two 15-minute breaks). During the implementation stage, the student received positive reinforcement for on-task behavior and self-restraint. The final stage included moving the subject to a less restrictive environment in the community and fading the 1:1 contact with his job coach. Results were compiled using visual data analysis, comparing each dependent variable over the number of work sessions. The subject's engagement increased significantly from baseline to the final stage, as well as his ability to show self-restraint. Intervals of clothing manipulation were almost completely extinguished by the final stage, while slapping decreased significantly. These results made it possible for the student to work in a less restrictive environment, using less staff support and supervision (Beare, 2003).

Token economies are another way to provide reinforcement, often used with younger students or those with developmental disabilities (Conyers et al., 2004). Conyers and colleagues explored the effects of response cost versus DRO procedures used to implement token economies. In the response cost plan, children started with a certain amount of tokens and lost them when exhibiting problem behaviors. In the DRO plan, children gained tokens for *not* exhibiting problem behavior for a set duration. Researchers wanted to determine which plan worked best for decreasing disruptive behaviors within a preschool classroom. This was a continuation of previous research with a smaller sample size, so the team hypothesized that DRO would initially decrease disruptive behaviors but that response cost would be more effective over time. The study participants were 25 preschool students (4 girls, 21 boys) in North Dakota. The

class was chosen because it consisted of many students who displayed high-level disruptive

behaviors, including crying, screaming, throwing objects, and noncompliance with teacher

directives (Conyers et al., 2004).

Researchers began by observing and coding different types of disruptive behaviors using

a 10-second interval recording system. Interobserver agreement during baseline sessions was

93% and 92% during the intervention phase (Conyers et al., 2004). During the intervention

phase, an ABAB alternating treatment model was followed. Response cost and DRO sessions

were implemented on alternating days for a 2 month duration. During the response cost sessions,

15 stars were placed on the board beside each student's name, and they would lose a star for each

instance of disruptive behavior. The behaviors were defined for the students prior to beginning

the session and the students had to maintain at least 12 stars to gain an edible reward (candy).

For the DRO sessions, the spaces next to the students' names were empty, and they received stars

for showing no disruptive behaviors during a random length session (between 30 seconds and 90

seconds). In the response cost sessions, students were told why they lost a token, and the students

who kept tokens were given verbal praise. During the DRO sessions, no feedback was given to

those that did not earn a token, but those who did received the star along with verbal praise. No

additional consequences were given for behaviors outside of the experimental parameters. In the

baseline measurements, disruptive behaviors were present at 64% of intervals. During response

cost sessions, behaviors decreased to a 5% mean over the last six sessions, as compared to 27%

in DRO sessions. When response cost was reintroduced, levels once again dropped to 10% or

lower. In response cost sessions there was also a decrease in the number of students engaging in

those challenging behaviors. A drawback of both interventions is the labor intensive nature of

full implementation; future studies should examine ways to implement full classroom measures

with less adult labor. A shortcoming of this study was that in the response cost plan, students received verbal feedback on problem behaviors but did not during DRO. The differences could be related to the loss of tokens, being provided direct feedback, or some combination of the two. A future study should include an exploration of the impact of verbal feedback on both styles of intervention. There are also concerns within educational research about the impact of punishments on students, with the emotional costs leading to unintended side effects. This study supported the concept that response cost didn't create the same emotional response as traditional punishment.

Much like the Conyers study, more researchers are looking into classroom-wide behavior management and the varying effectiveness of interventions. Zoromski, Evans, and others (2015) explored classroom management within the middle school setting, breaking down research into seatwork, group/partner work, whole group instruction, and small group instruction. Classroom Behavior Management (CBM) strategies were the focus, including appropriate commands, labeled/unlabeled, praise, if/then contingencies, strategic ignoring, and more. These strategies were tracked through observation and self-report. There is significant peer-reviewed support for CBM effectively decreasing disruptive behavior at the elementary level, so researchers in the current study looked to determine if similar results could be achieved at the middle school level (Zoromski et al., 2021). They aimed to determine the rates of disruptive/off-task behaviors within the different instructional methods listed above, as well as the rates of effectively implemented CBM strategies. These included appropriate commands, labeled/unlabeled praise, opportunities to respond (OTR), appropriate responses to rule violations, strategic ignoring, and if/then contingencies.

Fifty-eight teachers and their classrooms served as the sample for this study. These were sixth, seventh, and eighth-grade classes in southeastern Ohio. Class sizes ranged from 7 to 31 students. 84% of the teachers were white females. The schools had free/reduced lunch populations higher than the national average (52.1%). Researchers used the Student Behavior Teacher Response-Secondary (SBTR-S) to track observations and CBM strategies. All parameters were defined for the teachers prior to observation and self-report surveys. Two coders would observe 30-minute sessions with an agreement rate of 92.22%. For analysis, disruptive behaviors were sorted by academic context. Results showed that more violations occurred during individual seatwork and whole group instruction, as compared to group/partner activities. The average number of violations per 30-minute session was 18.76. When observing rule violations from observations alongside teacher responses, 36.63% of responses were appropriate according to CBM strategies. Despite noting its efficacy, rates of labeled group praise were very low (.28 per half hour), along with labeled individual praise (1.89 per half hour). The average OTR was 6.63 per half hour, indicating that praise and OTR were not frequently used. Self-reports from teachers showed that they supported the use of CBM strategies as opposed to punishment, but observations indicated that many teachers struggled to actually implement these strategies. When tracking the association of the different CBM strategies, appropriate responses to rule violations were the only variable associated with on-task behavior. This was defined as pointing out the behavior in as private a manner as possible, leaving emotion out of it, and stating expectations for appropriate behavior. No significant connections were found between on-task behavior and OTR, posted rules, and public praise. Therefore the current study found that more research and training must be explored to support appropriate responses to rule violations. The present study

also supports the use of as much small group/partner work as possible, as opposed to a lot of individual seatwork or full group work (Zoromski et al., 2021).

Pivotal Response Treatment (PRT) and Applied Behavior Analysis (ABA) are interventions that are focused on students with Autism. The usefulness of both within the classroom must be explored. Many students with Autism have language or auditory processing delays, which cause difficulty with social interaction and verbal interventions. In this study, Mohammadzaheri and others explored the effectiveness of PRT compared to adult-driven ABA strategies. PRT was defined as language-based intervention including child choice, direct and natural rewards, task variation, reinforcing attempts, and alternating new and familiar tasks. These may be more effective than traditional ABA (reward) strategies because they mimic and encourage intrinsic motivation to learn and interact rather than ones that are extrinsic.

This study focused on thirty elementary students (18 boys, 12 girls) from the ages 6 to 11 (Mohammadzaheri et al., 2015). Each student had the diagnosis of Autism Spectrum Disorder by a child psychiatrist in accordance with the DSM-IV-TR and was receiving services in special education for this diagnosis. Students attended public school in Iran and were referred to Hamaden University for intervention services. The children had no other co-morbid disabilities and were randomized into participant groups by IQ, sex, and age. Sessions were conducted for one hour, twice a week during summer school services over three months. The mean length of utterance (MLU) and disruptive behavior occurrences were tracked. No punishment procedures were used during the implementation of the respective intervention procedures. SLPs were trained in each intervention style and an outside observer tracked MLU and disruptive behaviors. The ABA condition focused on teacher-chosen materials, while PRT used child-chosen items. Rewards were based on child preference and parent reports. ABA provided edible reinforcers,

while PRT reinforcement was focused on chosen items within the room and verbal praise. When data were balanced for age and sex, the PRT data showed a significant decrease in disruptive behavior (41%), while ABA showed a 5% increase in disruption-free time. The MLUs increased with both interventions, but a more significant impact on behavior was shown in the PRT group (Mohammadzaheri et al., 2015). Further research must focus on whether this can be replicated successfully in large group environments and in older age groups. It would also be useful to continue research on whether increasing opportunities for interaction (verbal and nonverbal) can indirectly impact disruptive behavior classroom-wide.

Many of the studies focused on behavioral interventions for those with disabilities have smaller sample sizes. Chen and Ma (2007) did a comprehensive meta-analysis to compare the effectiveness of treatment on disruptive classroom behaviors. Studies were chosen from the *Journal of Applied Behavior Analysis* with descriptors that included disruptive behavior, destructive behavior, aggressive behavior, noncompliant behavior, and inappropriate behavior. As well as, uncooperative behavior, problem behavior, off-task behavior, self- stimulatory behavior, and self-injurious behavior. Researchers narrowed the field to include only studies with the objective of decreasing the target behavior and a single-subject design. Studies were categorized by intervention, and the percentage of data points exceeding the median (PEM) was calculated using the baseline and intervention results. Studies with comparable numerical data points were chosen to ensure the ability to use the PEM to measure effectiveness. The PEM null hypothesis states that if the treatment is not effective, data points have an equal probability (50% vs. 50%) of being above or below the median. If the treatment is effective, the probability of being above the median will increase. To determine the rating, researchers took the time series graphics from each study, drawing a horizontal median line using the baseline data. That same

median was imposed on the intervention data, and the number of data points above that median was used to determine the PEM scores. Researchers found that the PEM scores matched the initial author's analysis of the effectiveness of the intervention, reinforcing the validity of this measure. Differential reinforcement, token economies, and token economies with response cost were shown to have the highest PEM scores at .90. While response cost (.88), punishment (.85), dedicated instruction (.76), and providing preferential tasks (.73) were well above the .5 median level). Multi-component interventions were shown to be the most effective with a .98 PEM.

Social instruction through mentorship is another resource to use for disruptive behavior. Zilka (2020) presented a narrative and qualitative single-subject study tracking aggressive behavior in a 14-year-old student. In the study, aggression was defined as, "antisocial behavior expressed in various ways, such as physical harm, insults, social isolation, and emotional manipulation" (Zilka, 2020, p. 44). An in school mentor (a counselor) conducted 50 meetings with the student that were video recorded. Researchers analyzed the student's responses within the sessions, as well as behavior that occurred outside of the sessions throughout the course of her school day. Observations and content analysis were synthesized to determine the student's receptivity to mentorship and whether that impacted her academic, behavioral, or social status. Through modeling, respectful support, and action plans, the mentor helped the student begin coping with her emotions in a meaningful way, leading to a decrease in her negative emotions about school and social interactions. Throughout their 50 sessions, the mentor and student worked together to decrease the aggression she showed throughout the school day.

Another disruptive behavior affecting classrooms today is elopement. Defined as "leaving caregiver supervision without consent (Call et al., 2011, p. 903)," is especially dangerous for the most vulnerable students with developmental delays. Blocking can be unsafe for students and

staff, so Call et al. (2011) researched the effectiveness of differential reinforcement, with and without blocking, in a single-subject study. The participant was a 5-year-old boy with autism. The student didn't use functional vocational communication but used hand signs for preferred activities. He had a special interest in water, so he often eloped toward water sources, instigating heightened caregiver concern related to this behavior. Researchers tracked elopement (any part of the participant's body passing the plane of the doorway) during functional analysis and treatment sessions in 10-second intervals). Interobserver agreement between the two observers was 99%. During the functional analysis, the student alternated between treatment room A, in which furniture was used to block the exit, and treatment room B, where the student had access to highly preferred items. The hypothesis was that not blocking elopement could result in decreasing the efficacy of an intervention, given its inherent reinforcement (task escape, adult attention, accessing preferred items outside the room). Using the two rooms, with one having preferred items, allowed the team to account for the DRO that elopement naturally provides. In the baseline data, instances of elopement were elevated during the sessions without blocking and dropped during the sessions when blocking was implemented. This remained the same during the treatment phase when DRO was provided to reinforce behaviors other than elopement. According to these results, blocking does make a significant difference in decreasing elopement behaviors along with other interventions. Continued research is required to determine what reinforcement schedule could decrease elopement attempts even further, and to apply these findings to larger sample sizes.

One aspect of differential reinforcement is the withholding of attention and reinforcement for target behaviors, which is called extinction (Athens & Vollmer, 2010). Athens and Vollmer explored the use of differential reinforcement without using the extinction aspect while focusing

on the role of duration, quality, delay, or some combination thereof. Seven students with developmental disabilities who engaged in problem behaviors were the subjects. They had been referred for consultation services at their local elementary schools. Trained clinicians led the treatment sessions 4-16 times a day, five days a week, for 10-minute sessions. Interobserver agreement for those conducting observations was greater than 90%. During the baseline sessions, reinforcement schedules were in place for problems and appropriate behavior. Observers helped track random time intervals and nodded to the clinician to communicate when to reinforce a response. During the duration experiment, researchers explored the effectiveness of using longer durations of access to reinforcers to increase positive behaviors. They found that longer durations of access to a reinforcer correlated with increases in the student's appropriate behavior and a decrease in their inappropriate behavior. During the quality experiment, researchers focused on how using higher-quality reinforcers impacted student behaviors. They found that there was a significant effect. In the delay section of the experiment, clinicians provided immediate reinforcement for appropriate behaviors and delayed reinforcement for positive behavior. This was also found to have an impact. Finally, all three focuses were combined, tracking long duration/high quality/immediate reinforcement against short duration/low quality/delayed reinforcement. This showed similar results to the first three parts of the experiment. Problem behavior decreased, and desired behaviors increased. These results provided support for the use of differential reinforcement aspects (quality, duration, delay) beyond extinction. Future research should examine larger sample sizes, the use of trained teachers instead of clinicians, and the impact of these interventions on behavior upon returning to the classroom.

Some research is exploring the way social dynamics affect disruptive behavior in the classroom environment. Farmer (2018) and colleagues examined clarifying the strategies that

teachers can use to impact social dynamics, specifically for students with disabilities. They focus on the metaphor of the "invisible hand," which is the oversight role the teacher plays in the peer interactions that occur within the classroom. The present study examined pre existing evidence-based research related to the "invisible hand" in a narrative format. Five aspects were gleaned from the literature, including teacher attunement, managing the social ecology, students' social experiences, target students' social synchrony, and students' social features (Farmer et al., 2018). The teacher needs to be aware of the students' roles within the social hierarchy and stay on the alert for intervention with bullying or victimization. The placement of students within the environment, their natural placement within peer culture, and their ability to follow social norms should also be observed by the teacher. Whether the student has acceptance among their peers or positive social interactions. Teachers should be on the lookout for marginalized students and aware of group productivity. Where are the positive and negative models within the classroom, along with the positive patterns? One must be aware of deviancy and coercion that may occur. Finally, when are prosocial, cooperative, and adaptive behaviors present, compared to aggressive, avoidant, and non-compliant behaviors? The invisible hand strategies outlined above provide a strong foundation for teachers looking to guide their classroom management. Further research needs to provide more evidence for how to respond to deficits or difficulties in each of the five domains.

Social dynamics are also at play in the next study. Hanline et al. (2022) examined the use of peers within intervention plans for young students with disabilities. They focused on single case design (SCD) studies and surveyed thirty-nine articles focused on children with ranging from 3-8 years. Researchers focused on three central questions: What were the rigor and characteristics of the studies, was there validity in generalization and maintenance, and were the

interventions feasible from the perspective of the service provider? All studies reinforced the perspective of previous literature, including peers in interventions begets positive results. Positive change could be influenced by academic, play, social, cognitive, and communication behaviors (Hanline, Eldridge, & Robbins, 2022). Unfortunately, consistent rigor could not be found across all thirty-nine studies, so the authors had difficulty comparing validity related to generalization and maintenance. This should be an area of focus for future research. Specifically, more SCD should focus on generalization since they are so common within the special education research domain. Finally, related to the third research question, the feasibility of most of the interventions within classrooms was low. Many of the interventions required 1:1 or 1:2 adult-to-child ratios, which are rare within most classrooms. So though this study confirms the power and importance of peer-supported interventions, more rigor needs to occur in future students to address the difficulties targeted by these researchers.

Jarvis and Seifert explored the impacts of motivation in relation to work avoidance (Jarvis & Seifert, 2002). This study focused on 20 fifth and sixth-grade students that were identified as "work avoidant." They were given goal orientation questionnaires; these were scored to complete a cluster analysis of work–avoidant, performance goal-motivated, and learning goal-motivated factors. Students also participated in a personal interview that further explored motivation and their relationship with the school. A work avoidance checklist was also conducted during these interviews to corroborate the self-report scores in the initial questionnaire. Students self-reported the following motivators for work avoidance: resentment/hostility (due to not liking their teachers), learned helplessness (they do not believe they can do it on their own), and boredom (they are not interested, do not see the worth of tasks). This study supports previous research that teacher-student relationships are integral to

encouraging intrinsic motivation and the importance of student-centered learning to educational buy-in. Further research on teacher impacts on student motivation is necessary to provide more depth of research for newer resources. Student motivation continues to evolve as our educational system changes, so updated modern studies need to be done to bolster this research (Jarvis & Seifert, 2002).

Positive reinforcement is a star player in many evidence-based strategies (DeLeon et al., 2001). One challenge that can arise with these strategies is finding the best reinforcers to work with each student. Student preference can change from day to day- even hour to hour. DeLeon and their research team looked into using preference assessments to give students the opportunity to communicate their preferences on a regular basis. This not only allows for student self-advocacy and choice but can bolster the effectiveness of other interventions by giving the student the chance to show teachers and caretakers what motivates them most. Five students with developmental disabilities were tracked for this study. They were girls and boys aged 9-14 with mild-moderate developmental delays and some maladaptive behaviors (self-injury, non-compliance, aggression). Their primary caretaker took the choice assessment survey, the student took a long form version of the survey, and in the final stage, they did a short form assessment at the beginning of each session. Researchers found that often the long form and short form answers from students did not match up, but this shows that preferences can change over time and from day to day for some students. They found that for 3 of the 5 participants, using the short form assessment survey helped them communicate their daily preferences and gave them access to more reinforcing stimuli during the session. For 2 of 5 participants, their interests stayed fairly stable (giving the same responses each day), so the short form/daily assessment may not have been necessary for them. Additionally, researchers noted that having

choice through access to the assessment may have been reinforcing in its own right, especially

for the students with changing preferences. More research is needed to address these two points.

Reinforcement through relationships is another important avenue to explore. A 2017

study examined the effects of peer and teacher support within the classroom (Wentzel et al.,

2017). Compared to many behavior related studies, this was a large sample size, following 169

middle schoolers and 71 high schoolers in 15 classrooms (from 6 schools). Perceived emotional

support from peers and teachers were both explored, in addition to the teacher's perceived value

of the subject. Self-report questionnaires were used to collect data, in addition to mastery and

performance scales to show student mastery of the subject matter (perceived by the student and

teacher). Factor analysis and coefficient of variation scores were compared on the appropriate

scales, bringing the authors to the following conclusions. Both peer and teacher support were

positively correlated with high levels of mastery. Teacher value of the subject did not have a

positive correlation. Researchers noted that a student's internal values mitigated the influence of

both peer and teacher support, meaning if a student has negative self concept or low intrinsic

motivation, supports are less effective. They also note that the complicated interpersonal

dynamics and internal motivations of each classroom beg for more complex studies and

strategies to be developed to build on the present research (Wentzel et al., 2017). Given the

complex needs of students returning to school after COVID changes, this is a subject ripe for

further research.

Another model within the positive behavior support framework is

"Prevent-Teach-Reinforce" (PTR) (Dunlap et al., 2010). Dunlap and colleagues reviewed past

literature within the PBS field to create the PTR model- meant to be a standardized system to be

used across many environments. Under this model, when a student struggles with behavior in the

educational environment, the team should conduct a functional behavior assessment (FBA), manipulate the antecedents ("Prevent"), provide strategies to the student ("Teach"), and manipulate the consequences ("Reinforce"). The FBA and PTR should be conducted by the team that works with the student and some outside support. Outside supports could be behavior specialists, interventionists, or school personnel who don't work directly with the student. The team should form a plan for the prevent, teach, and reinforce pieces of the framework together based on data collected during the FBA. Once the PTR plan is formulated for the student, additional staff must be trained and coached on implementation. This is then followed by further data taking and evaluation of the intervention. This study provided two case studies that followed the implementation of PTR with 8 and 9-year-old boys; both became more successful in their educational environments after their team went through the PTR. The most important next step in this research is implementing the system for a larger sample size of students, across age groups and educational environments. The authors also acknowledge that these plans may be difficult to implement within average educational environments. Keeping fidelity across the various contexts a student visits throughout their day can be difficult for staff.

　　　　Check-in check-out (CICO) is another commonly used PBS intervention (Drevon et al., 2019). Drevon, Hixson, Wyse, and Rigney did a quantitative review of CICO literature to determine its effectiveness. A meta-analysis using 32 studies showed that CICO interventions improved student outcomes by 1.22 standard deviations. The type of study, setting, whether an FBA was completed prior to intervention, and dependent variable (on-task behavior, academic achievement, referrals, etc.) were all coded for each study. Sixty-four dependent variables were identified, with problem behavior having the biggest effect size in relation to CICO. This study countered previous research that argued similar results were not seen across age groups. Similar

results were seen across elementary and secondary research. Researchers also examined the question posed by previous studies, whether CICO only works for those whose function of the behavior is attention. This was not supported by the current study and the authors urged continued research on the subject (Drevon et al., 2019).

An additional PBS intervention is person-centered planning. Kennedy and colleagues studied the impacts of person-centered planning on three special education students' general education inclusion (Kennedy et al., 2001). One eight-year-old and two six-year-olds students were chosen due to a history of disruptive behavior (noncompliance, repetitive behaviors, aggression, property destruction) that impacted their inclusion in a mainstream setting. Two of the students were at risk for moving to more restrictive programming. Target behaviors for each student were tracked by independent observers during 15 minute intervals to collect baseline data. A team meeting was held for each student to discuss concerns, what the student did well, and the things they liked. Each team member filled out a questionnaire mapping student strengths. Then students were interviewed to determine their thoughts on their strengths and their perspective on the problem behavior. Interventions were determined by the team after reviewing the data, the team information, and the information from the student. The plan was presented to the students' educational teams and implemented. Researchers found that problem behaviors improved for all three students, but for one the improvement was not statistically significant. The authors posit that fidelity of implementation across the educational team was lacking for that third student. They argue that pairing person-centered planning with other PBS strategies leads to positive outcomes (Kennedy et al., 2001). Further study is needed to support widespread implementation and address the difficulties teachers face in getting the whole team to implement an intervention with fidelity.

**CHAPTER III: APPLICATION OF THE RESEARCH**

Schools are always looking for ways to better support their students and staff. The lack of training and access to codified behavior intervention systems is a major obstacle in student outcomes, teacher satisfaction, and retention (Bruhn et al., 2017). Teachers and support staff communicate that they would like access to more behavior intervention training and support. Students show with their behavior that they need the benefits of these additional supports (Bruhn et al., 2017).

The application of this research is a training that could be used for any level of staff working with any student population. The slideshow presents an introduction to a large survey of possible interventions that can be effective across environments, organized by antecedent to the behavior. There are portions specific to developmental cognitive disability (DCD), Autism Spectrum Disorder (ASD), severe-profound disability, and emotional behavioral disability (EBD) populations to go more in-depth than a general mainstream behavior training. There is a note sheet to provide a framework in which staff can reflect on behaviors within their own classroom and take notes on the interventions relevant to their environments.

The slideshow includes a slide with speaker notes detailing the research found in each source of the literature review. Research indicates that antecedent based behavior interventions can improve outcomes (Sam & AFIRM Team, 2016) so sources are organized by relevant antecedent on the first two slides. This allows for the resource to be used as a training in which a facilitator can guide staff through the links, but also to be saved by staff to be used in problem solving situations when searching for interventions post-training

The presentation of the slideshow is meant to be flexible and dynamic. It could be presented in-person or via video. It could be presented all in one session or as a weekly or

monthly training. These flexible options for the training would allow many districts access to the training to use with their existing professional development programming and give as many educators access to the information as possible.

The materials will be aimed at educators supporting students kindergarten through age 21. They provide pertinent information for staff serving students and special education. Many interventions are even applicable to students with high behavior needs as these groups have the least amount of training aimed toward their populations. Knowledge of these interventions help staff at every level of student interaction, from support staff, to administrators, to teachers, and counselors. For licensed staff, the training builds upon a framework of behavior knowledge they were already exposed to in their licensure programs. For unlicensed staff, it provides a survey of interventions with space for connection to their current role so the content is accessible regardless of previous knowledge. Buy-in will be established through problem solving time and those opportunities to connect content back to staff's everyday work.

To construct the slideshow, I used my summaries and notes from each source. I began by sorting the sources into categories based on antecedent. The four types of antecedent were pulled from the PTR content (Dunlap et al., 2010). The relevant studies were assigned based on their effectiveness in responding to the antecedents for behavior (task demand, transition, denied a request, or peer interaction). Several studies fit into multiple groups or applied to all four categories. This is how I determined where each link should be on slides one and two.

The studies outlined on slide three that were applicable to all four antecedent groups or to overall classroom management included: slide 4- a synthesis of evidence based practices (Simonsen et al., 2008), slide 12- the PEM meta-analysis (Chen & Ma, 2007), slide 5- SWPBS (Sobeck & Reister, 2020), slide 7- teacher reprimands (Caldarella et al., 2021), slide 19- positive

reinforcement (DeLeon et al. 2001), slide 21- PTR (Dunlap et al., 2010), slide 22- CICO (Drevon et al., 2019), and slide 23- person centered planning (Kennedy et al., 2001). Each source outlined best practice recommendations which I summarized in the slide and body of the speaker notes. The pros and cons for each slide were based on the outcomes and future research portions of the sources. The body of the antecedent slides were also created by reviewing the implementation recommendations from each study, and the pros and challenges were guided by outcomes and future research portions.

When identifying relevant antecedents in each student I found that peer interaction was the main focus for four sources. Social instruction through mentorship- slide 13 (Zilka, 2020), influencing classroom social dynamics- slide 16 (Farmer, 2018), peer supported interventions- slide 17 (Hamline, Eldridge, & Robbins, 2022), and peer and teacher social supports- slide 20 (Wentzel et al., 2017) fit into this category and were linked accordingly. Sources related to task demand antecedents were the class pass intervention- slide 6 (Norozanick & Blair, 2019), DRO/DRA- slide 8 (Beare, 2003), PRT- slide 11 (Mohammadzaheri et al., 2015), and motivators impacting work avoidance- slide 18 (Jarvis & Seifert, 2002). Slide 14- blocking in response to elopement (Call et al., 2011) fit into the transition antecedent category. Slides 9, 10, and 15 fit into multiple categories. Token economies- slide 9 (Conyers et al., 2004) applied to task demands and transitions. Differential reinforcement- slide 15 (Athens & Vollmer, 2010) related to task demands and denial of a request. While CBM- slide 10 (Zoromski et al., 2021) applied to the task demands, transition, and denial of a request categories. Organizing the sources in this way allows for the slideshow to be a useful document for teachers and other staff to use when researching potential supports for struggling students.

To stay up to date with current interventions and adjust to educational needs, ongoing time to update this research would be required. Access to a university library and educational evidence-based research sources would be vital to keeping the training relevant and up to date. A facilitator with behavior intervention experience would be ideal to support trainees in accessing this knowledge. This could be the creator of the project or teachers with relevant experience within the district that is accessing the content. The materials are clear enough that staff could gain substantial information just by reading them, but having a knowledgeable facilitator would increase the collaborative element that allows trainees to envision future implementation. It also allows for direct feedback and the exploration of interventions that are not mentioned within the presentation but are relevant to the student population being served. Leveled pricing would be available for districts to gain access, including pre-recorded video, virtual facilitation by the creator, in person facilitation by the creator, or simply access to the slideshow. Subscription services would be necessary to continue to provide updated training to districts as changes would be made.

Two elements will be key to the sustainability of this application. The first is collaboration (Zilka, 2020). As the training is used, feedback will be requested. This will allow for additional interventions to be researched and added. It will also expose areas of need that don't have enough evidence-based interventions associated with them. Since the ongoing updating of the training is integral to its usefulness, the input of other educators and researchers will be imperative to meet the needs of those who are active in the field. The second key to sustainability is the interest and support of schools and school districts (Dunlap et al., 2010). As many teachers push for more behavior intervention training (Bruhn et al., 2017), this project is

meant to meet the needs of those teachers while meeting the evidence-based standards necessary to support our students.

**CHAPTER IV: DISCUSSION AND CONCLUSION**

Staff responses to students have a great impact on their behavior. In recent years teachers have reported that behavioral issues are a main obstacle to educational progress (Bruhn et al., 2017).  Having access to appropriate behavior supports and interventions can help teachers make choices to improve student outcomes and the classroom environment as a whole. Punishment, shaming, and public callouts can have negative impacts on student well being and the classroom environment, which contributes to increased disruptive behavior (Caldarella et al., 2021). Positive behavior supports are considered to be the current best practice over punishment and shaming. Many sources support that the implementation of school wide positive behavior support systems is correlated with decreasing target behaviors and building better teacher-student relationships (Norozanick & Blair, 2019).

Considering the implementation of PBS systems, the interventions included in this research paper are pulled from all three tiers. Tier 1 is proactive classroom supports, given to all students  (Feinberg et al., 2021). Tier 2 is in-depth support for at-risk students  (Feinberg et al., 2021). Tier 3 is for students who need individualized, supportive plans and may be resistant to intervention (Feinberg et al., 2021).  It is important for educators to be familiar with and able to implement interventions at all levels. Simonson and colleagues (2008) did a large-scale synthesis of current best practices in PBS. They found that positive student outcomes were associated with teachers' ability to maximize structure, use active supervision, actively engage students, use a continuum of strategies to reinforce positive behaviors and avoid reinforcing negative behaviors. Sobeck and Rester (2020) provided an additional survey examining multi-tiered systems of support. Their findings associated positive student behaviors with having choices, predictable classroom environments, scheduled non-reinforcement based attention, pre-correction, and a

high-probability request system. They also recommend providing OTRs, giving specific praise, using mystery motivators, and playing behavior related games. All of these strategies are helpful across the different tiers of support. Another survey was provided by a PEM metaanalysis by Chen and Ma (2007). Differential reinforcement, token economies, and response cost showed the highest levels of effectiveness across students.

One strategy to increase expected behaviors is the class pass intervention. Positive behavior changes were associated with giving students break passes to use in place of disruptive behaviors (Norozanick & Blair, 2019). When work avoidance was the function of the behavior, this intervention helped students maintain self-regulation to reach the reward (a break). Once students were successful with that intervention, they could then save unused passes for a different reward. Rewards are also a main part of the DRA and DRO interventions. With DRO rewards being provided for time spent without engaging in a target behavior and DRA rewards being provided for demonstrating an alternative behavior, these interventions can be very effective for students with behaviors that can be dangerous to themselves or others (Beare, 2003). Another strategy is CICO, scheduling check-in time with a trusted adult for students who are struggling (Devon et al., 2019). A 32 study meta-analysis showed that CICO could be highly effective for establishing positive relationships and increasing positive behavioral outcomes. Javis and Seifert (2002) showed from student self-reports that student work avoidance was most often related to resentment of their teacher, learned helplessness, and boredom. Interventions like the CPI, token economies, and CICO out may help support these students.

Token economies are an effective way to gamify reinforcement for a larger group of students. They can be especially effective for students with disabilities (Conyers et al., 2004). Students may work for tokens or work to keep tokens and then trade them in for a reward. This

method is a step closer to intrinsic motivation than providing immediate rewards for positive behaviors. Some CBM strategies avoid tangible rewards while still using reinforcement to impact behavior. These include labeled praise, if/then contingencies, OTR, and strategic ignoring (Zoromski et al., 2021). Strategies can be used in concert to help all students or be codified in a plan to help a struggling student. However, Zoromski and colleagues (2021) did not find that any one of these strategies was statistically significant enough to be effective alone.

PRT is a reward system that attempts to shift focus to natural rewards and task variation, paired with traditional reinforcing attempts (Mohammadzaheri et al., 2015). ABA has a strong research base supporting its use with ASD and non ASD students. PRT uses the ABA foundation but looks to natural rewards as a way to start building intrinsic motivation. Social reinforcement through mentorship is another way to provide more natural rewards. Though mentorship is found to be highly effective for students (especially students in the DCD and ASD categories), it can be a difficult intervention to maintain as it depends on willingness and buy-in from peers (Zilka, 2020). Hanline et al. (2022) provide further support for this concept using a survey of 39 studies, though they acknowledge the challenges of implementing this highly effective intervention. Students who felt supported by peers and teachers showed better behavioral and academic outcomes (Wentzel et al., 2017).

Differential reinforcement is another highly effective intervention for our students with special education needs. Extinction can be used to decrease a target behavior through withholding attention and giving it upon doing an alternate behavior (Athens & Volmer, 2010). The duration, quality, and delay of the reinforcer must be considered when examining whether a differential reinforcement intervention is effective. Longer duration, higher quality, non delayed rewards will be more effective than short, low quality, delayed rewards (Athens & Vomer, 2010).

Reinforcement can also be provided by the teacher guiding the social environment within the classroom. Farmer and colleagues (2018) assert that the teacher needs to be aware of the students' social roles and interactions and control the social environment of the classroom. They give very little in the way of concrete steps for doing this, so this area begs for more research.

Reinforcement-based strategies may only work as well as the reward that can be given to the student. Interventions are more effective when students are able to provide their preferences for rewards or engage in a choice (DeLeon et al., 2001). Check-ins must be scheduled as student preferences change. Student choices and preferences are important in the PTR model. Teachers plan to address the antecedents that trigger behavior, teach the student how to deal with them and manipulate the consequences to reinforce positive behaviors (Dunlap et al., 2010). This method helps teachers guide students through triggers they are struggling with and teaches them more adaptive behaviors. Person-centered planning is useful with the PTR model and can be used alongside it. It is simply a process of engaging every planning resource to come up with a system of behavior management that works for each student (Kennedy et al., 2001). Many schools have planning teams that work specifically to complete person-centered planning for students who are struggling.

The professional application for this research is limitless. Knowing a large survey of interventions helps teachers better support their students and work more collaboratively with others. No matter how knowledgeable an educator is, students will always present new and complex challenges, so a collaborative approach is imperative to reaching positive outcomes. This research provides an excellent basis for behavior intervention knowledge and also helps guide educators on where further research is most needed.

The biggest limitation of this research is more depth of support for each style of intervention. Especially for our students with disabilities, sample sizes may be small or not in mainstream school environments. More research is necessary to support our students with intense behavior needs. Another limitation is the need for more "low resource" interventions. The shortcoming of many interventions is the time, resources, or staffing required to implement them is not available in short staffed, underfunded schools. Without the resources they need some educators can only take this knowledge so far. Future studies should focus more on low-resource interventions and classroom support.

This paper has explored many different styles of interventions. These interventions are available to students across disability groups, grade levels, and settings. Specific interventions were explored, and surveys were provided for ideas for future independent research. Some intensive interventions were also explored. The main theme across all interventions was the need for student center planning, resource management, and providing appropriate reinforcement. The research presented would be an invaluable resource to teachers, support staff, and interventions within our schools.

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**APPENDIX A: STRATEGIES OVERVIEW PRESENTATION**

# Common Antecedents or Triggers- & Potential Interventions

**Task Demand**

- Class Pass Intervention
- DRO and DRA
- Token Economies
- CBM
- PRT
- Differential Reinforcement
- Motivators Impacting Work Avoidance

**Transition**

- Token Economies
- CBM
- Blocking in response to elopement

**Denied a Request**

- CBM
- Differential Reinforcement

**Peer Interaction**

- Social Instruction through mentorship
- Influencing Classroom Social Dynamics
- Peer Supported Interventions
- Peer and Teacher Social Supports

# Interventions that Apply to All 4 Categories

and support overall classroom management.

- Survey of evidence based practices and meta-analysis of practices
- SWPBS
- Teacher reprimands (are not effective)
- Positive Reinforcement
- PTR
- CICO
- Person Centered Planning

# Evidence Based Interventions– A Synthesis

- Maximize Structure and Predictability
- Post, Teach, Review, Monitor and Reinforce Expectations
- Actively Engage Students in Observable Ways
- Use a Continuum of Strategies to Acknowledge Appropriate Behavior
- Use a Continuum of Strategies to Respond to Inappropriate Behavior

(Simonsen et al., 2008)

- Maximize Structure and Predictability
    - High classroom structure
    - Physical arrangement that minimizes distraction
- Post, Teach, Review, Monitor and Reinforce Expectations
    - Post, teach, review, and provide feedback on expectations
    - Active supervision
- Actively Engage Students in Observable Ways
    - Rates of opportunities to respond
    - Response cards
    - Direct instruction
    - Computer assisted instruction
    - Classwide peer tutoring
    - Guided notes
- Use a Continuum of Strategies to Acknowledge Appropriate Behavior
    - Specific and/or contingent praise
    - Classwide group contingencies
    - Behavioral contracting
    - Token economies
- Use a Continuum of Strategies to Respond to Inappropriate Behavior

- ○ Error corrections
- ○ Performance feedback
- ○ Differential reinforcement
- ○ Planned ignoring plus contingent praise and/or instruction of classroom rules
- ○ Response cost
- ○ Time out from reinforcement

(Simonsen et al., 2008) table 1

# School Wide Positive Behavior Supports (SWPBS)

- A cohesive system of behavior intervention that is codified and used by the entire school
- Tiers of action based on severity of behavior and level of support needed
- Prevention Strategies
- Instructional strategies
- Pros
- Challenges

(Sobeck & Reister, 2020)

- A cohesive system of behavior intervention that is codified and used by the entire school
- Tiers of action based on severity of behavior and level of support needed
- Prevention Strategies:
  - Use of choice (sequence of events, type of learning, reward)
  - Increase predictability of classroom environment (schedules, color coding, visual boundaries, structured activities)
  - Scheduled attention (set time for positive interactions with teacher regardless of behavior)
  - Precorrection (pre-teach behavior before giving opportunity to engage in it)
  - High probability request system (prime student with several prompts they will respond appropriately to before giving the prompt they're less likely to follow
- Instructional strategies
  - Provide positive opportunities to respond (OTR)
  - Positive and negative reinforcement
  - Behavior specific praise

- ○ Mystery motivators to reinforce behavior improvements
- ○ Good behavior games to provide reinforcement for following rules
- Pros: a system for the whole school to be on the same page with, concrete steps to take, helps new teachers who are unfamiliar with intervention processes
- Challenges: all staff must buy in and use the process, training and check ins to make sure it is being used effectively and to make necessary updates

(Sobeck & Reister, 2020)

# Class pass intervention

- SWPBS Tier 2
- Provides break opportunities to disruptive students; teaches appropriately asking for a break
- Students present their pass to the teacher when a break is needed
- Students may also save passes and trade them for a reinforcer, which helps them associate self control with positive outcomes. This is an optional part of the intervention
- Pros
- Challenges

(Norozanick & Blair, 2019)

- A SWPBS intervention
- Tier 2 is supplementary support, a step above universal interventions. CPI is a tier 2 support
- Provides break opportunities to disruptive students; teaches appropriately asking for a break
- Students present their pass to the teacher when a break is needed
- Students may also save passes and trade them for a reinforcer, which helps them associate self control with positive outcomes. This is an optional part of the intervention
- Pros: teaches an important skill- self regulation
- Challenges: relies on extrinsic motivation to follow social norms, may foster reliance on outward motivators

(Norozanick & Blair, 2019)

## Teacher Reprimands

- Reprimands do not decrease disruptive behaviors
- Reprimands may increase disruptive behaviors
- **Praise increases student engagement**
- Pros
- Challenges

(Caldarella et al., 2021)

- EBD and mainstream population
- Teacher reprimands and student engagement negatively correlated
- Teacher praise and student engagement positively correlated
- Teacher reprimands and disruptive behavior positively correlated
- Reprimands were more commonly used and were correlated with escape beheavior
- Pros: requires no resources, just a shift in thinking
- Challenges: reprimands may be unavoidable with certain unsafe behaviors

(Caldarella et al., 2021)

## Differential Reinforcement of Other Behavior & Differential Reinforcement of Alternative Behavior

- Useful with students who show severe behaviors (like self-injury)
- DRO definition
- DRA definition
- Both plans attempt to drive extinction of the target behavior
- Can used both methods together or individually
- Pros
- Challenges

(Beare, 2003)

- Useful with students who show severe behaviors (like self-injury)
- DRO: provide scheduled reinforcement when student does not perform target behavior
- DRA: provide schedule reinforcement when a student performs a replacement behavior instead of the target behavior
- Both plans attempt to drive extinction of the target behavior
- Can used both methods together or individually. Severe behaviors may necessitate establishing DRO first to teach replacement behaviors, then moving to DRA when closer to extinction.
- Pros: provides opportunities for students to receive rewards for not engaging in unsafe behaviors
- Challenges: requires enough staffing to provide ongoing rewards; risk of a reward losing effectiveness and reinforcement value

(Beare, 2003)

# Token Economies

- Students receive tokens for positive behavior
- Students receive tokens for not engaging in disruptive behavior
- Students start with tokens and lose them when engaging in disruptive behavior
- Pros
- Challenges

(Conyers et al., 2004)

- Intervention for providing predictable reinforcement
- Response cost: students start with a certain number of tokens and lose them when doing a target behavior
- DRO: students receive tokens for not doing targeted behavior during a certain duration
- Pro: gives a framework for providing reinforcement
- Challenge: labor intensive

(Conyers et al., 2004)

# Classroom Behavior Management (CBM)

1) Appropriate commands and responses to rule violations
2) Labeled/unlabeled praise
3) If/then contingencies
4) Strategic ignoring
5) Opportunities to respond

- Pros
- Challenges

(Zoromski et al., 2021)

- Elementary and middle school environments:
  - Seatwork
  - Group/partner work
  - Whole group instruction
  - Small group instruction
- Studies using CBM strategies shows that students are most successful when doing small group/partner work across all strategies, meaning instructional planning has a great impact on how useful interventions are
- Pros: strategies can be implemented without additional resources or pre-teaching
- Challenges: can be hard to remain consistent (human error)

(Zoromski et al., 2021)

# Pivotal Response Treatment

Language Based Interventions:

- Child choice
- Natural and immediate rewards
- Task variation
- Reinforcing attempts
- Alternating new and familiar tasks or preferred/non-preferred tasks


- Pros
- Challenges

(Mohammadzaheri et al., 2015)

- PRT: language based intervention using child choice, natural rewards, task variation, reinforcing attempts, alternating new and familiar tasks
- PRT different from Applied Behavior Analysis (ABA) in aim to mimic intrinsic motivation and avoid reliance on extrinsic motivation
- Pros: more natural than some ABA practices, attempts to establish internal locus of control so students learn they can be in control of their behavior
- Challenges: can require more prep to have options available for task variation, may require stronger staff-student relationships since rewards may be less tangible.

(Mohammadzaheri et al., 2015)

## PEM Meta-analysis

- Focused on decreasing target behaviors (disruptive or self-injurious)
- Most effective interventions:
  - Differential reinforcement
  - Token economies
  - Token economies with response cost
  - Response cost (alone)
  - Punishment
  - Dedicated instruction
  - Providing preferential tasks
- Pros
- Challenges

(Chen & Ma, 2007)

- Behaviors targeted in meta-analysis: uncooperative behavior, off-task behavior, self-stimulatory behavior, self-injurious behavior
- The listed behavior interventions showed positive results at decreasing target behavior. Interesting that punishment is on this list as negative effects have been shown in other studies.
- Pros: meta-analysis provides support for several of the studies explored throughout this research
- Challenges: how do we codify these strategies and make them more accessible to new educators and support staff

(Chen & Ma, 2007)

## Social Instruction through Mentorship

- Shows promise in decreasing escape and aggression behaviors
- Increase prosocial behavior through
  - Building trust
  - Modeling
  - Respectful support
  - Action Plans
- Pros
- Challenges

(Zilka, 2020)

- Useful with students showing low response to intervention with other methods
- Practices: building trust, modeling how to cope with difficult situations, respectful support, building action plans to respond to situations
- Pros: helpful for students who have experienced school trauma and don't trust adults, repeated teaching opportunities for social emotional learning individualized to student's mindset
- Challenges: time and labor intensive, long term relationship must be established between student and staff

(Zilka, 2020)

# Blocking in Response to Elopement

- For vulnerable students who encounter outsized risk when leaving staff supervision
- Use furniture to block by creating a complex path to leave the room
- Use a staff member by placing them between the student and the door
- Pros
- Challenges

(Call et al., 2011)

- Escape of non-preferred activities (academics or social interactions) are a common motivator for students leaving the classroom
- In special education classrooms with vulnerable students, this behavior can be especially risky and necessitate a higher level of response
- Place the eloping student's work area as far from the door as possible, use furniture placement to decrease ease of escape
- Place staff between student and door
- Pros: both styles can greatly decrease the student's ability to leave without permission
- Challenges: placing a staff member may increase possibility of student showing aggression toward staff to get around them

(Call et al., 2011)

# Differential Reinforcement

- Extinction for nonpreferred behaviors
- Positive reinforcement for preferred behaviors
- Impacts of duration, quality, delay
- Pros
- Challenges

(Athens & Vollmer, 2010)

- Extinction: withhold attention and reinforcement of target behavior. Not providing reinforcement should decrease the motivation to take part in the behavior
- Duration: longer exposure to reinforcement correlates with increase of positive behaviors
- Quality: exposure to methods of reinforcement that the student deemed high quality correlates with increase of positive behaviors
- Delay: immediate reinforcement more strongly impacts positive behaviors
- Long duration, quality, immediate reinforcement is most effective. Decrease duration/quality and increase delay to see if student is ready to have supports removed
- Pros: highly effective for students with ASD or developmental delays, can be used at age appropriate levels across the spectrum
- Challenges: may be difficult to remain consistent with duration/quality/delay as student needs change

(Athens & Vollmer, 2010)

## Influencing Classroom Social Dynamics

The "invisible hand" of the teacher

- Teacher attunement
- Managing social ecology
- Student's social experiences
- Target students social synchrony
- Student's social features


- Pros
- Challenges

(Farmer, 2018)

- How classroom management affects social dynamics, which in turn impact disruptive behavior
- Teacher must be aware of student's perceived roles within the social hierarchy, remaining alter for bullying or victimization
- Teacher can shape class experiences and groupings to support the modeling of prosocial behavior to at risk students and avoid potential for triggering behaviors
- Pros: recogizes the unique needs of all students and the fact that social situations have huge impacts on learning
- Challenges: no set of steps to follow, very fluid intervention reliant on student needs and and attitudes, may be difficult to gather quantifiable data

(Farmer, 2018)

# Peer Supported Interventions

- Helpful for students with and without disabilities
- Positive impacts
  - Academics
  - Play
  - Social interactions
  - Cognitive reasoning
  - Communication

(Hamline, Eldridge, & Robbins, 2022)

- Especially effective for students with mild cognitive and social delays. Helps foster prosocial outcomes for them while giving peer mentor a positive opportunity to be a supportive community member
- Peer interactions are often more motivating than other extrinsic motivators, can have huge impacts listed above
- Pros: highly effective and reinforcing
- Challenges: time and labor intensive, requires an active peer participant that is open to training and facilitating an ongoing relationship

(Hamline, Eldridge, & Robbins, 2022)

# Motivators Impacting Work Avoidance

- Resentment/hostility
- Learned helplessness
- Boredom

Building teacher-student relationships and fostering intrinsic motivation as a classroom are vital to the future success of of interventions

(Jarvis & Seifert, 2002)

- Choosing the right intervention is predicated on determining the correct motivation/antecedent for the target behavior
- Across grade levels, we see the following reasons are the most common for students
  - Resentment/hostility (toward the work or the teacher)
  - Learned helplessness (don't believe they can do it on their own)
  - Boredom (not interested in the subject or task)

(Jarvis & Seifert, 2002)

# Positive Reinforcement

- Most effective reinforcement strategies
- Student preferences key to effectiveness
- Short form and long form interest assessments can help increase effectiveness

(DeLeon et al., 2001)

- Positive reinforcement is the most effective part of the reward/punishment system; especially in response to difficult behaviors such as self-injury, aggression, noncompliance
- Choosing highly reinforcing items and activities is important to the effectiveness of of positive reinforcement interventions
- Student preference for reinforcement can shift and change
- Long form interest assessments can provide baseline information
- Daily, short form assessments can provide information on changing preferences, which can lead staff to understand if a student has stable or changing preferences

(DeLeon et al., 2001)

# Peer and Teacher Social Supports

- Student perceptions of teachers
- Student perceptions of peers
- Student self-perceptions
- Pros
- Challenges

(Wentzel et al., 2017)

- Student's perception of support by their teachers was positively correlated with mastery of academic subjects
- Student's perception of support by their peers was positively correlated with mastery of academic subjects
- These results did not apply is students had a negative self-concept
- Pros: fostering positive relationships can impact overall student mastery
- Challenges: more research on complex needs and

(Wentzel et al., 2017)

# Prevent-Teach-Reinforce (PTR)

- Prevent: determine and manipulate antecedents
- Teach: actively teach how to respond to the antecedents
- Respond: provide reinforcement for using taught strategies, avoid reinforcing undesired behaviors
- Pros
- Challenges

(Dunlap et al., 2010)

- Used to standardize responses to difficult behaviors throughout student's day and in various environments
- Conduct functional behavior assessment to identify antecedents and motivators
- Meet as a team to determine how to prevent (manipulate the antecedents), teach (provide strategies on how to respond should the antecedent arise), and reinforce (manipulate the consequences)
- Train the team to implement PTR and provide positive reinforcement for using the strategies taught
- Pros: individualized, teaches coping strategies, addresses reinforcement, addresses what is causing the behavior, adjustable as team meets to determine effectiveness
- Cons: if large team is implementing fidelity with the plan can be difficult to reach, requires engagement from all stakeholders

(Dunlap et al., 2010)

# Check-in check-out (CICO)

- Checking in and checking out with a trusted adult- encourages self monitoring and relationship building
- Useful in many environments
- Useful for various student needs
- Pros
- Challenges

(Drevon et al., 2019)

- Students check in at the start of the day (or class period) and check out at the end of the day with a trusted adult. CICO can be used to monitor behaviors, academics, and emotional states. Sometimes worksheets are used to encourage self reflection.
- Meta-analysis of CICO students show its usefulness across environments and with differing student needs
- Pros: widely research, lots of data to support use in general education and special education classrooms
- Challenges: fidelity across environments/staff members, long term implementation can be difficult because it is time intensive

(Drevon et al., 2019)

# Person Centered Planning

- Individualized interventions
- Student strengths
- Team planning
- Pros
- Challenges

(Kennedy et al., 2001)

- Focuses on the individual student and uses their strengths to build an intervention.
- Begin the intervention with baseline data, then convene the whole educational team. Identify student strengths and potential adjustments that play into those strengths. Takes student opinions into account.
- Team reconvenes as needed to adjust intervention.
- Pros: Responsive to student needs.
- Challenges: Time intensive, requires buy in from all stakeholders.

(Kennedy et al., 2001)

**APPENDIX B: EVIDENCE-BASED INTERVENTION GUIDE**

# Evidence Based Behavior Interventions

| What behaviors do you see most in your classroom? | |
|---|---|
| | |
| **What motivates or triggers these behaviors?** | |

| | |
|---|---|
| **Task Demand** | |
| **Transition** | |
| **Denied a Request** | |

**Peer Interaction**

## Other Interventions
Apply to Multiple Categories or Support Overall Classroom Management