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Utilizing Chart Moves to Increase Students' Work Completion and Decrease their Escape Behaviors

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ARTICLE INFORMATION

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ABSTRACT

Background: Teachers often provide students with independent practice activities, such as completing worksheets or other written assignments, after receiving content-area instruction. Many students understand independent practice is part of a teacher's daily routine. However, some students who display challenging behaviors or who are at-risk for developing an emotional or behavioral disorder (E/BD) often do so during independent academic work activities as a way to escape a task they perceive as unpleasant.

Method: Teachers often respond to continued misbehavior by removing these students from the classroom as a form of discipline. However, their removal only reinforces them engaging in additional misbehavior as a way to escape a task. Unfortunately, the approach of using exclusionary practices takes away from instructional and independent practice time these students would otherwise receive.

Result: Teachers often do not know how to simultaneously positively address increasing work completion while also decreasing inappropriate escape behaviors during these tasks without the use of exclusionary practices.

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Purpose and Conclusion: The purpose of this article is to provide teachers with a fun, positive way to simultaneously increase students' accurate work completion while decreasing inappropriate behaviors that otherwise would be performed to escape the task and result in exclusionary discipline practices.

1. Introduction

Nathan is a fifth grader in Ms. Caldwell's class who has been displaying challenging behaviors during independent practice activities such as completing multiplication and division worksheets. Instead of writing answers, Nathan frequently puts his head on his desk, doddles on the worksheet, tries to talk to peers sitting close to him, does not follow directions, or if pressed by Ms. Caldwell, will write any answer as quickly as possible to complete his worksheets. Ms. Caldwell believes that Nathan possesses the skills to write correct answers because he has done so when called on to complete a problem on the white board at the front of the room. Ms. Caldwell also thinks his challenging behaviors may be due to a lack of motivation or Nathan wanting to escape completing the entire worksheet. However, she is unsure how to increase the number of correct answers while

also reducing the inappropriate behaviors that are preventing him to complete the assignment.

Many students who display challenging behaviors or who are at-risk for developing emotional or behavioral disorders (E/BD) often misbehave when engaging in independent practice activities such as completing worksheets accurately to escape those tasks. Escape behaviors simply refer to any type of behavior that functions, or serves the purpose, for a student being able to be removed from an instructional activity they may find unpleasant. For example, Maag (2019) conducted a meta-analysis of 44 functional behavioral assessment (FBA) studies with participants who were either at-risk (i.e., displaying challenging behaviors) or identified with a high-incidence disability (e.g., learning disability, E/BD, OHI). The results were both interesting and informative. The most frequent challenging behaviors displayed by students were talking to others, being out of seat/walking around, and not following directions. The most common setting in which these behaviors were displayed was in the general education classroom during independent practice activities—specifically, completing worksheets. One of the two most common functions for displaying these behaviors was to escape a task perceived as unpleasant.

Displaying escape behaviors is fairly common for students who dislike completing independent practice activities such as worksheets (Maag & Daly, 2024). There are two reasons why students would display challenging behavior to escape such tasks. First, they may have a skill deficit. That is, they do not possess the requisite subskills and strategies to successfully complete worksheet assignments during independent practice. The typical approach for addressing a skill deficit is to determine the missing subskills-often by using curriculum base measurements (CBMs) to pinpoint the academic deficiencies-and provide remedial instruction. The other reason for displaying challenging behaviors during independent practice activities is a performance deficit. Namely, a student possesses the academic skills to complete the task correctly but chooses not to, usually because they find the task aversive (e.g., boring, contextually irrelevant). In these instances, teachers should find methods for increasing student motivation to complete the assignments accurately. Maag (2019) found that out of the 44 studies reviewed, only four had academic instruction as the intervention developed from the FBA while the other 40 studies had interventions to increase motivation to complete independent practice activities accurately which may suggest, at least for the participants in that meta-analysis, that performance deficits appear more often than skill deficits when students at-risk or have a high incidence disability are required to complete worksheets during independent practice activities.

The two most common methods for increasing student motivation when a performance deficit is the problem, and who are displaying challenging behaviors to escape, are positive reinforcement and negative reinforcement (Daly *et al.*, 2020). Positive reinforcement occurs when a consequence is introduced after a behavior is performed and results in a future increase of that behavior. In general,

positive reinforcement is delivered using either verbal praise from the teacher, token economies, behavioral contracts, or group-oriented contingencies such as the Good Behavior Game. The idea for combating escape-related behaviors is to find positive reinforcers that are more reinforcing than the reinforcing value of escaping a task perceived to be unpleasant. Negative reinforcement occurs when the consequence for displaying a behavior terminates something unpleasant and results in a future increase in that behavior. Basically, it feels good to perform a behavior that stops something that feels bad. For escaperelated behaviors, negative reinforcement is usually delivered via differential negative reinforcement of alternative behavior (DNRA). DNRA uses the very same consequence (escaping the task) as a reinforcer for completing assignments-either by taking breaks for partial work completion or being able to escape a second portion of an assignment by correctly completing the first part (e.g., Goehring & Maag, 2020; Holtz & Daly, 2021).

There are some drawbacks using either positive reinforcement or negative reinforcement to address escape behaviors. First, it is difficult to find a positive reinforcer that is more powerful than the reinforcing value of escaping unpleasant academic tasks. Second, the use of DNRA to address escape-related misbehavior has two main disadvantages (Maag & Daly, 2024). If a student is permitted to escape a second portion of an assignment contingent upon meeting a performance criterion on the first part, but fails to meet that criterion, then misbehavior may escalate out of frustration. Also, if the "taking a break" approach is used in which students can have short breaks for completing increasing portions of an assignment they may not want to return to complete the remainder of the task and further escalate engaging in inappropriate escape behaviors.

It may be possible to avoid the drawbacks of using either positive reinforcement or negative reinforcement in isolation by combining both to combat students displaying inappropriate behaviors to escape a task perceived to be unpleasant and increase work completion. This approach is rarely used and there does not appear to be much, if any, extant research on this combination. Some research exists on comparing the differential effectiveness of positive reinforcement techniques versus negative reinforcement techniques for escape behavior (e.g., O'Connor & Daly, 2018; Piazza *et al.*, 1996), but not combining the two.

The purpose of this article is to first explain more thoroughly positive reinforcement in an easy practical way while differentiating it from ways to *deliver* positive reinforcement because they are sometimes incorrectly used interchangeably. The intent of this discussion is to help teachers better understand the nature of chart moves and their use of both positive and negative reinforcement. Second, chart moves, a novel way to deliver reinforcement, will be described to improve students' accurate work completion and eliminate inappropriate escape behaviors along with implementation guidelines and practical examples for application. It is important to note that this article provides practical guidelines for teachers and is not an empirical study but draws heavily on the extant empirical research.

2. Positive Reinforcement and Reinforcement Delivery Systems

There is, arguably, no more misunderstood term in education than positive reinforcement. Misconceptions regarding positive reinforcement abound—it is not a reward, it is not bribery, it is not coercive, and it is not a manipulative tool wielded to make people engage in behaviors chosen by others (Maag, 2018). Yet to many, it still carries a negative connotation and, hence the reason for demystifying it and presented as an integral part for addressing students displaying inappropriate escape behavior during academic tasks.

3. Demystifying Positive Reinforcement

There are two defining characteristics of positive reinforcement. First, it is not a "thing" but an effect. When a behavior is performed, whatever comes after that behavior is called a consequence. If the effect (i.e., consequence) increases future occurrences of the performed behavior, then that consequence is positive reinforcement. Conversely, if the effect decreases future occurrences of the behavior, then that consequence is punishment. Negative reinforcement is not punishment, rather it occurs when a student performs a behavior in order to escape some unpleasant stimuli in any environment and doing so increases the future probability that the behavior that terminated the aversive activity subsequently increasing.

Reinforcement is not good and punishment is not bad—labeling them as such provides no useful information. Rather, it is the effect that determines which one is which. For example, a student who writes10 correct answers on an arithmetic worksheet in five minutes results in the teacher providing verbal praise by saying "Nice job," only to observe the student subsequently writes three correct answers during the next five minutes. The consequence of the teacher saying "Nice job" functioned as punishment because the behavior subsequently decreased. When individuals understand that reinforcement and punishment are defined based on their effect on behavior, then societal labels such as reinforcement is good and punishment is bad, or vice-versa, become superfluous.

The second defining characteristic of reinforcement and punishment is that they are naturally occurring phenomena in the environment. B.F. Skinner did not "invent" positive reinforcement any more than Isaac Newton "invented" gravity. Rather they discovered their properties. We cannot see gravity; we can only observe its effect-releasing a pencil from your hand has the effect of it falling to the ground-gravity. Similarly, positive reinforcement cannot be seen or heard, only its effect can be observed. It is ironic when some teachers say "I don't believe in using positive reinforcement, students should behave well because it's the correct thing to do." Here is a question to ask this teacher: "Would you prefer to run the risk of positive reinforcement occurring haphazardly and potentially increasing students' inappropriate behaviors (e.g., attention from peers) or proactively use it to improve appropriate behavior?"

4. Reinforcement Delivery Systems

There needs to be some mechanism to deliver positive reinforcement when a student performs a behavior a teacher wants to see increase. For example, if a student finds teacher verbal praise reinforcing, then the delivery system would be overt speech via the teacher. However, there are other reinforcement delivery systems—some more complicated than others and they all have their advantages and disadvantages (Maag, 2018).

Token economies have been used for decades (e.g., Kazdin, 1977) and requires operationally

defining behaviors to be reinforced, selecting a medium of exchange (i.e., type of tokens), and identifying back-up reinforcers students can purchase with their earned tokens. They have been used effectively in both general and special education classrooms (Kim *et al.*, 2022). Advantages of a token economy are that it bridges the time gap from when a student performs a behavior to later purchasing reinforcers, multiple behaviors can be targeted, and a variety of back reinforcers can be obtained. A drawback is that they are time-intensive and difficult to create and implement in the absence of expertise in applied behavior analysis.

Behavioral contracts have also been used for many decades (cf., Rutherford & Polsgrove, 1981). They are written documents that specify required behaviors of the student and adults participating in the contract. They tend to work well with older students such as those in high school. However, they are also timeintensive because the target student must be an equal participant in the process of developing the contract for it to be maximally effective. This participation means that portions of a contract must be negotiated and those are skills many students do not possess and would need to be taught.

A group-oriented contingency involves the presentation or loss of a reinforcer based on whether an individual student within a group, a portion of students within a group, or all the students in a group perform the targeted behaviors (Cooper et al., 2007). The most common approach is the Good Behavior Game (Barrish et al., 1969) which originally involved a teacher dividing a class into two groups. Misbehaviors were tallied on a poster board such as "walking around" and "talking to others." Random beeps would sound and if a student was engaging in any of those target behaviors, a tally mark was made on a chalkboard. Students were reinforced if they only displayed the behaviors of talking to others or walking around 10 or fewer times for the first session and five or fewer times for subsequent sessions. There are two problems with this approach. First, certain students could refrain from engaging in the target behaviors but engage in other inappropriate behaviors such as poking peers or throwing objects and still help their team win the game. A second problem is that some students may find the negative attention from peers reinforcing by sabotaging the contingency.

5. Chart Moves as a Novel Approach

The important point about any reinforcement delivery system is that students can satiate on them (i.e., bored of the format) the same way they can of the actual reinforcers themselves. However, the good news is there are simpler, quicker, and just as effective reinforcement delivery systems as those described previously that decrease the likelihood of satiation occurring and the disadvantages associated with them. One such method is chart moves. The use of chart moves is not new. The Tough Kid Book described unique reinforcement delivery systems including chart moves over three decades ago (Rhode et al., 1992). In fact, published reports of chart moves date back even farther (e.g., Jenson & Sloane, 1979). However, the description of chart moves was very short, The Tough Kid Book is currently out of print, and did not include procedural implementation steps teachers could follow. However, they have received more attention recently but teachers are still not typically aware of them (Maag, 2018). Nevertheless, related research has been conducted on the use of various behavioral charts to reduce students' problem behaviors and help improve teachers' responses to disruptive behaviors (e.g., Barnes, 2020; Poole, 2020; Taylor& Abernathy, 2016).

A chart move is a modification of a token economy, but instead of students earning and accumulating tokens after performing target behaviors, they move around a chart. Figure 1 shows the simplest type of chart move-connect-the-dots. As a student performs a behavior to a predetermined criterion, they connect one dot to the other. The circled dots represent where the student can obtain small reinforcers to maintain their interest and motivation, with the larger reinforcer being administered when all the dots are connected. The most important consideration when creating a chart move is that the picture, or "theme" is something the student likes or finds interesting. Figure 1 shows a picture of a dinosaur. A dinosaur was chosen because this particular student enjoyed reading about dinosaurs, visiting museums with dinosaur bones, and watching movies about dinosaurs. Almost any existing board game can be turned into a chart move. The key is to find a theme a student would find interesting, such as their favorite movie, sports team, or music group. Table 1 provides some

examples of chart move themes for children at the preschool, elementary, and secondary levels (Maag, 2018).

 Table 1: Themes for Chart Moves for Students at Different Grades/
 Ages

PRESCHOOL	ELEMENTARY	SECONDARY
Mr. Potato Head: Facial features are added	Treasure Map: Each clue is revealed	Football Helmet: Stickers on helmet
Farm Animals: A plastic animal is moved from the barn to the corral	Football: Ball moves from end zone to "touchdown"	Concert T-Shirt: Dates and cities are added (real or virtual t-shirt)
Fish Bowl: A fish is moved from a net to a bowl	Baseball diamond: Player moves around the bases	Food Drive: Number of canned goods compiled
Apple Tree: An apple is moved from a tree to a bushel	NASCAR: Car moves around the track	Build a music playlist

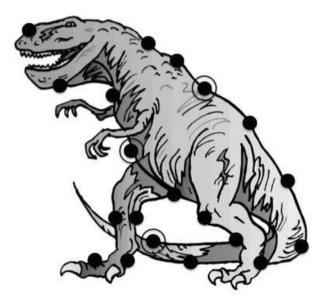


Figure 1: Connect-the-Dots Chart Move

6. Benefits of Using Chart Moves

There are two benefits of using chart moves. First, they offer considerable flexibility—especially within the framework of multi-tiered systems of support (MTSS) which are typically organized as Response to Intervention (RTI) for academics and Positive Behavior Interventions and Supports (PBIS) to address students' challenging behaviors. Both RTI and PBIS are tiered approaches that move upwards in intensity and individuality of interventions. For example, in the PBIS tiered system, tier one refers to school-wide supports that involves developing a universal set of behavioral expectations that applies to students and staff across all school settings. Tier two focuses on the class-wide or group level for students who do not respond to tier one interventions. Tier three addresses students who display the most challenging behaviors and involve developing an individual intensive intervention, usually based on a functional behavioral assessment (e.g., Lee & Gage, 2020). Chart moves can be adapted to work with groups of students at the tier two level or further individualized for students who need a tier three intensive intervention.

A second benefit is that chart moves provide students with a visual representation of their progress. In a token economy students can see the accumulation of tokens, but they are simply used to later purchase back-up reinforcers when a "store" is open—typically once a week, although that can fluctuate. The main advantage of having a visual representation allows the student the experience of playing a board game such as Candy Land, Chutes and Ladders, the Game of Life, Trouble, or Sorry. All these common board games have a beginning point and end goal. The student can move around a board just like playing any of those other games. A chart move can be most effective when a teacher creates one that reflects the interests of certain students.

7. Developing a Chart Move

Developing a chart move requires some work, but more so a large dose of teacher creativity. The first step is to meet with the student and find out what they like in terms of movies, sports, games, hobbies, or anything in which they are interested. This meeting will provide the teacher with some ideas of how to theme the chart. The second step is to determine what target behavior a teacher wants to see a student improve—the focus of this article is to address accurately completing worksheets during independent practice activities, although chart moves can be used for other behaviors and situations as well. The third step is to determine how many moves should be on the chart and where to place small intermittent reinforcers. These small intermittent reinforcers serve two purposes. First, they keep students motivated by administering positive reinforcement using a fixed ratio schedule (e.g., every four correct answers and corresponding moves in the chart results in a small reinforcer). Second, to incorporate negative reinforcement, students are told that when they reach one of the moves that indicate access to a small reinforcer, they have two choices: they can either continue on the chart to earn more positive reinforcement or they can take a short break in order to temporarily escape a portion of the worksheet. There is ample empirical support for using positive reinforcement and negative reinforcement techniques to improve the quality and quantity of students' work completion (e.g., Goehring &Maag, 2020; Holtz & Daly, 2021; Kastner et al., 2023; O'Connor & Daly, 2018).

Once the chart is made, the teacher can pull the student aside and privately explain how it works:

I made a chart based on your favorite football team, the Green Bay Packers. You will be able to move the football around the chart for writing correct answers on your math worksheets. You can begin moving after writing seven correct answers on the 25-problem multiplication and division worksheet. The reason to begin moving after seven correct answers is because that is the average number of correct answers you have written on previous multiplication and division worksheets with 25 problems. You can move one space for every correct answer you write above seven. Look at the chart with me and notice that there are four goalposts on certain spaces. These are very important, and you have a fun decision to make when you reach one. You can either have the reward for that goalpost and continue on the chart by writing more correct answers or you can have a two-minute break from the assignment to work on a crossword puzzle or draw something on the back of the worksheet.

This initial introduction of the chart move to the student has both aspects of positive and negative reinforcement. Figure 2 provides an example of how to construct the type of chart move mentioned in the above scenario. Figure 3 shows the completed chart move. The actual chart move can be kept in a private place out of sight of other students. When the student reaches a goal post, the teacher and student can go to that place, count up the number of correct answers, and move the appropriate number of spaces on the chart. If the student reaches a goal post, they can decide whether to receive the reinforcement and continue on the chart or stopping for a break before resuming work until the end of the independent practice session.

Nathan is a fifth grader in Ms. Caldwell's class. Ms. Caldwell concludes that a major problem is that he completes his multiplication and division worksheets extremely quickly and makes numerous mistakes even though he possesses the skills to write correct answers. Ms. Caldwell gives students a new 25-problem worksheet to complete during the last 20 minutes of each math period. Ms. Caldwell wants to increase the number of correct answers Nathan writes on each worksheet. She collects five of Nathan's previously completed worksheets. He received scores for correct answers written of 8, 5, 6, 7, and 9 for an average of 7 correct answers per worksheet. She also collects the scores for five average performing students on one of their worksheets apiece. Their scores were 22, 18, 20, 16, and 23 for an average of 20 answers correct (19.8 rounded up to 20). Ms. Caldwell decides to make a chart move to motivate Nathan to write more correct answers. She determines the chart should have 25 moves since that is the number of problems on each worksheet. She also decides to spread four small reinforcers evenly across the chart to ensure Nathan's motivation remains high. The goal is to have Nathan write at least 20 correct answers—the average of the five peers. Talking with Nathan, she obtained several items, activities, and interests:

- He is a huge Green Bay Packers fan
- His favorite board game is the Game of Life
- He likes to play Uno and Yahtzee
- His favorite candy is Starbursts, but he also likes Snickers and Milky Ways.

Given this information, Ms. Caldwell decides the theme of the chart move should be the Green Bay Packers football team. Since Nathan averages 7 correct answers per worksheet, she decides Nathan can begin moving on his chart after writing 7 correct answers.

Figure 2: Creating a Chart Move

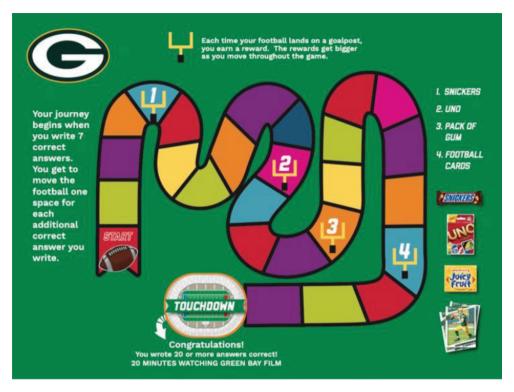


Figure 3: Chart Move Ms. Caldwell Created

When the independent practice time is over the teacher has a decision to make. If the chart has been completed, then the easy decision would be to start the chart over for the next independent practice activity. However, what should the teacher do if the student does not make it all the way around the chart to get the final reinforcer? One solution to this problem is that the teacher could decide that if the student reaches the halfway mark or less on the chart that they can stay at the point for the next independent practice time. The original contingency would still apply that the next move on the chart would occur after the student writes seven correct answers. However, if the student gets farther than halfway, the teacher can decide that they will have to start at the beginning of the chart for the next session. The rationale for this condition is that if they go farther than halfway, the student has already received at least two small reinforcers or breaks and, hence, their motivation should not be quashed for beginning the chart over the following day. In addition, keeping them more than halfway through the chart for the next independent practice activity may mean the student is far enough along so as not to complete as many correct answers to move to the end of the chart to obtain the final reinforcer.

8. Procedural Considerations using Chart Moves

Like all reinforcement delivery systems, chart moves are not perfect and modifications are typically required either before or once it is implemented. Chart moves, as previously stated, are usually kept in a private place so they do not attract undo attention of other students. Teachers should consider when to let a student move around the board and obtain smaller reinforcers or chose to take a short break once they reach one of the designated moves. A typical approach is to wait until the end of the independent practice activity, bring out the chart board, the student moves the earned number of spaces and landing on or passing a designated reward then they receive it immediately, such as stickers, special erasers, pencils or pens. However, a problem with this approach is if the student chooses instead to take a short break (i.e., receive negative reinforcement) then the "break" would be delayed until the next independent practice session and would negate the negative reinforcement.

A teacher could address this problem by only using positive reinforcement on the chart move for writing more correct answers. However, this approach fails to address the escape aspect of a student's behavior and motivation to complete more problems to earn a break. One solution to this conundrum is for the teacher to make tally marks on a piece of paper during the independent practice, look at the board, and determine if the student would reach one of the smaller reinforcers. If so the teacher can pull the student aside, let them move on the chart and decide if they want a break or the reinforcer.

There is another potential problem that may arise using a chart move during an independent practice activity: What does the teacher do if the student is engaging in other inappropriate behaviors such as walking around the room, doodling, or putting their head on the desk regardless of whether the function is to escape the assignment or to obtain teacher or peer attention? These behaviors will also interfere with writing more correct answers. The teacher could add a response cost (i.e., fine) to address those types of behaviors such that every time the student puts their head down, they must back up one space on the chart. However, fining the student can severely curtail their motivation. Consequently, there is a simple, positive way for the teacher to address these types of behaviors by incorporating into the chart move differential reinforcement of other (DRO) behavior simply known as reinforcing the absence of targeted inappropriate behaviors. The steps for incorporating this approach in conjunction with a chart move appear in Figure 4.

When the teacher divides the amount of time allocated for independent practice (e.g., 20 minutes) into the number of times the student puts their head down on the desktop (e.g., 5 times), she is calculating interresponse time which is the average amount of time that passes between the student's head being on the desktop during the 20-minute independent practice session $(20 \div 5 = 4 \text{ minutes})$. The idea is to reinforce the absence of "head on desktop" by requiring the student to go longer periods of time without engaging in that behavior and, by doing so, is able to move additional spaces on the chart. Therefore, the student is moving on the chart for both writing more correct answers and going longer periods of time without putting their head on the desktop. This approach eliminates the need to punish the student for putting their head on the desktop which may otherwise cause an argument or get the student angry and purposely putting their head down either more often or for longer periods of time as the preferred way to escape the task of writing correct answers.

Situation:

During the 20-minute independent practice activity in which students are to be completing the 25-problem worksheet, Nathan is also putting his head on the desktop thus not permitting him to continue writing answers.

Steps:

- 1. The teacher determines how many times the student puts their head on the desktop during the 20 minutes of independent practice.
- 2. The teacher then divides that number by the length of the session. For example, if the student's head is on the desktop five times then 20 minutes divided by five $(20 \div 5)$ equals an average of four minutes between each episode of head on desk.
- 3. The teacher tells the student that for every five minutes without putting their head down they get to move an additional space besides those earned for writing more correct answers.

Figure 4: Steps for Reinforcing the Absence of Inappropriate Behavior

Like all reinforcement delivery systems, there is no way to know what problems will occur when the intervention is implemented. In the case of incorporating DRO, the word "other" refers to the fact that when delivering reinforcement for the absence of the inappropriate behavior, the student is also being reinforced for whatever they are doing at that time. For example, if the student is writing answers when reinforcement is delivered for not putting their head on the desk, then they are also reinforced for continuing to write answers. This situation may seem like a "win-win" in which both the appropriate behavior and absence of the inappropriate behavior are being reinforced, and in some instances this does happen. However, what should a teacher do if they are about to deliver reinforcement for the student not engaging in the inappropriate behavior, but at that moment the student is engaging in other non-targeted inappropriate behaviors?

The simple solution would be to wait until the student was engaging in either a positive or neutral behavior. But that raises the question of how long to wait? If too much time passes, then the contingency, or connection of the reinforcer to the absence of the inappropriate behavior, is broken. The solution, although not ideal, is to remind the student they are wasting time for earning reinforcement by not writing additional answers. Once the student begins writing answers, the teacher can say, "And thank you for not putting your head on the desk, so you can move one more space on your chart." The reason for this solution not being ideal is that any teacher attention provided directly after an inappropriate behavior is displayed could inadvertently reinforce the unwanted behavior. It is important to remember that no interventionneither the delivery system or obtained reinforcersis without both benefits and costs. However, incorporating negative reinforcement and DRO into a chart move clearly outweigh any costs to the overall program.

Conclusion

Addressing students who display challenging behaviors during instructional activities does not have to be an onerous and unpleasant task. It can be a relatively easy, fun, creative, and visually appealing activity to motivate students to perform appropriate behaviors while simultaneously addressing inappropriate behaviors in a positive fashion. Further, developing and implementing chart moves is a way for teachers to use their creativity and actually enjoy behavior management as much as they do teach academic content and the types of lessons developed. Using chart moves as a reinforcement delivery system focuses on a student's interests and can be modified in any number of ways. This last point is important because students can satiate just as easily on the reinforcement delivery system as they can on the actual reinforcers themselves. Therefore, teachers need to understand that it is normal, and preferable, to change the reinforcement delivery system as much as it is to change the reinforcers for which the system delivers. A final point is the power of the reinforcement delivery system in and of itself. Students can find the novelty of the delivery system just as reinforcing as the actual reinforcers themselves. Both are powerful and novel tools for promoting appropriate and accurate performance of both academic and social behaviors while simultaneously decreasing inappropriate behaviors without the use of negative consequences.

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References

- Barnes, Aya E. (2020). One day dictated so much: A qualitative Study on the long-term effects of behavioral management charts. Knoxville, TN: University of Tennessee, https://trace.tennessee.edu/utk_gradthes/6063
- Barrish, H. H., Saunders, M., & Wolf, M. M. (1969). Good behavior game: Effects of individual contingencies for group consequences on disruptive behavior in a classroom. *Journal of Applied Behavior Analysis*, 2(2), 119–124. https://doi.org/10.1901/jaba.1969.2-119
- Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). *Applied behavior analysis* (2nd ed.). Pearson. https://www.goodreads.com/book/show/55644226applied-behavior-analysis-2nd-edition-by-john-ocooper-pearson
- Daly, E. J., III, Hoff, N., Kane, E. J., Hawkins, J., Kruger A. M., Bricko, N., Heifner, A., & Scanlan, L. (2020). Functional assessment of the academic environment 30+ years later. *Contemporary School Psychology*, 24(1), 1–15. https://doi.org/10.1007/s40688-019-00251-2

- Goehring, N., & Maag, J. W. (2020). Efficacy of differential negative reinforcement of alternative behavior to improve reading comprehension. *Psychology and Behavioral Science International Journal*, 15(4), 1–8. https://doi.org/10.19080/PBSIJ.2020.15.555917
- Holtz, J. W., & Daly, E. J., III. (2021). An evaluation of an instructional and motivational treatment package on writing revisions. *Contemporary School Psychology*, 25, 243–259.

https://doi.org/10.1007/s40688-019-00247-y

- Jenson, W. R., & Sloane, H. N. (1979). Chart moves and grab bags: A simple contingency management. *Journal* of Applied Behavior Analysis, 12(3), 334.http://pascalfrancis.inist.fr/vibad/index.php?action=getRecordDet ail&idt=PASCAL8050250077
- Kastner, K. M., Tiger, J. H., & Gifford, M. R. (2023). A comparison of fixed and incrementing reinforcement durations during schedule thinning for individuals with escape-maintained problem behavior. *Education* & *Treatment of Children, 46*, 23–37. https://doi.org/10.1007/s43494-023-00087-9
- Kazdin, A. E. (1977). The token economy: A review and evaluation (1st ed.). Plenum. https://link.springer.com/book/10.1007/978-1-4613-4121-5
- Kim, J. Y., Fienup, D. N., Oh, A. E., & Wang Y. (2022). Systematic review and meta-analysis of token economy practices in K-5 educational settings: 2000 to 2019. *Behavior Modification*, 46(6), 1460–1487. https://doi.org/10.1177/01454455211058077
- Lee, A., & Gage, N. A. (2020). Updating and expanding systematic reviews and meta-analyses on the effects of school-wide positive behavior interventions and supports. *Psychology in the Schools*, *57*(5), 783–804. https://doi.org/10.1002/pits.22336
- Maag, J. W. (2018). Behavior management: From theoretical implications to practical applications (3rd ed.). Cengage. h t t p s : //d o k u m e n . p u b / b e h a v i o r management-from-theoretical-implicationst o - p r a c t i c a l - a p p l i c a t i o n s - 3 n b s p ed-2016930141-9781285450049-9781337096218. html

- Maag, J. W. (2019). Effectiveness and social validity of FBAs for youth at-risk or with high incidence disabilities: A meta-analysis. *Journal of Educational and Developmental Psychology*, 9(1), 41–58. https://doi.org/10.5539/jedp.v9n1p41
- Maag, J. W., & Daly, E. J., III (2024). Turning the tables: Using students motivation to escape work to improve task productivity. *Beyond Behavior*, *33*, 120-129. https://journals.sagepub.com/doi/abs/10.1177/10742 956241259628?journalCode=bbxa
- O'Connor, M. A., & Daly, E. J., III. (2018). Selecting effective intervention strategies for escape-maintained academic performance problems: Consider giving 'em a break! *Journal of School Psychology*, 66, 41–53. https://doi.org/10.1016/j.jsp.2017.09.003
- Piazza, C. C., Moes, D. R., & Fisher, W. W. (1996). Differential reinforcement of alternative behavior and demand fading in the treatment of escape-maintained destructive behavior. *Journal of Applied Behavior Analysis*, 29(4), 569–572. https://doi.org/10.1901/jaba.1996.29-569
- Poole, E. A. (2020). *Student perceptions of the color clip chart behavior management system*. Masters of Education in Teaching and Learning. 29.

https://digitalcommons.acu.edu/metl/29

- Rhode, G., Jenson, W. R., & Reavis, H. K. (1992). *The tough kid book: Practical classroom management strategies*. Sopris West. https://www.ancorapublishing.com/wp-content/uploads/2018/08/ToughKidBook.pdf
- Rutherford Jr, R. B., Polsgrove, L. J., Rutherford Jr, R. B., Prieto, A. G., & McGlothlin, J. E. (1981). Behavioral contracting with behaviorally disordered and delinquent children and youth: An analysis of the clinical and experimental literature. *Severe behavior disorders of children and youth*, *4*, 49-69. https://eric.ed.gov/?id=ED221976
- Taylor, S. S., & Abernathy, T. V. (2016). Behavior intervention flow chart: A strategic tool for managing challenging behaviors. *Creative Education*, 16, 2423-2432.10.4236/ce.2016.716232



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