Journal of Education and Human Development
December 2015, Vol. 4, No. 4, pp. 177-187
ISSN: 2334-296X (Print), 2334-2978 (Online)

Published by American Research Institute for Policy Development
DOI: 10.15640/jehd.v4n4a21
URL: http://dx.doi.org/10.15640/jehd.v4n4a21

# Teaching Teachers the Five Principles of Behavior Reinforcement: Changing Challenging Behaviors in the Classroom

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**Abstract**

This study examined teachers' use of the five principles of behavior reinforcement. Thirty-four elementary level teachers, in their second year of teaching, completed a pre-course survey regarding their level of confidence when working with challenging student behaviors. They also addressed their self-perceived abilities to make behavior changes for students with challenging behaviors, their ease of data collection for identifying baseline and post data, and capacity for fidelity of interventions on targeted student behaviors. All teachers enrolled in a 15-week class on behavior management that focused on the use of the five principles for behavior reinforcement. The course project was a functional behavioral intervention involving a challenging behavior targeted for behavior change reinforcement through the implementation of the five principles. Teachers completed the post survey after finishing the course project. The results of a paired-samples t-test identified significant statistical difference from pre to post survey regarding the teachers' self-perceived use of five principles for the change of challenging student behavior.

**Keywords:** Behavior, Reinforcement, Teacher Preparation, Principles of Behavior

Teaching Teachers the Five Principles of Behavior Reinforcement:
Changing Challenging Behaviors in the Classroom

Gallup polls consistently report that disruptive behavior and discipline problems in school are at the top of the list of nuisances and concerns identified by school staff, parents, and community members (Gallup, 2011). Problems with students' misbehavior are also among the most common reasons teachers give for leaving the field (Bogen, 2009). Teachers in both special and general education have historically requested support for behavior management more often than any other educational strategy (Elam, Rose, & Gallup, 1996; Rose & Gallup 2005). For a new teacher, the first few weeks of school may lull them into the thinking that student misbehaviors are rare. Once the excitement and novelty for students wears away, the first of the misbehaviors rear their ugly heads and without realizing what has occurred the teacher finds him/herself repeating the same corrections time after time, increasing their voice volume, and haranguing students to correct behaviors and/or follow directions given. The repetition of directions, corrections, and statements can quickly lead to feelings of frustration by the teacher and the students, valuable time, and the interrupted flow of academic instruction (Nelson, et al., 2001; Parke, 1969; Piazza et al., 1999).

It is essential that teachers know how to use effective techniques for behavior prevention, correction, reinforcement, and maintenance. Effective classroom management is related to prevention (Greer-Chase, Rhodes, & Kellam, 2002) and if teachers have established, taught, and reinforced classroom specific rules, upon seeing misbehavior displayed they can react with automaticity by using the principles of behavior reinforcement for immediate correction.

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Their response can help avoid fruitless effort that lead to exhaustion both emotionally and professionally and most importantly keep the flow of instruction smooth (Patricia & Stanley, 2008). The long-term benefit is also to students, who when allowed to continue displaying misbehavior often become disengaged, leading to dropping out from school and possibly experiencing other psychological and legal ramifications (Sweeten, 2006).

Most teachers do not lack the knowledge that they should use positive reinforcement (Renshaw, Christensen, Marchant, & Anderson, 2008); however, when faced with nuisance and/or inappropriate behavior, their desire is to immediately stop the misbehavior rather than reinforce a new desirable behavior (Shea & Bauer, 2012; Van Houten et al., 1982; Wolfgang, 2001). Punitive interventions are the first response many teachers react with when faced with a challenging behavior. Ironically, the very behaviors teachers attempt to eliminate through the use of disciplinary interventions are those that typically increase in frequency or degree (Mayer & Sulzer-Azaroff, 1990). Initially, the use of punitive actions seems effective, as the behavior usually immediately stops, although it is not a long-term effect and punishment does not provide students with new skills or new ways of behaving. While punitive interventions can create a temporary sense of relief for teachers, they do not provide the lasting effect of healthy behaviors or life-long skills that students can use in future situations (Bach & McCracken, 2006).

When teachers perceive themselves as lacking the preparation to effectively deal with students who present challenging behaviors their levels of stress increase (Abidin & Robinson, 2002; Westling, 2010). As stress increases teachers attempt to use techniques that often increase student misbehavior (e.g., ignoring, verbal and non-verbal reprimands, punishment, loss of student privileges/response cost, and physical exclusion). The misbehavior of the student often leads to labels such as chronic behavior problem, with the result of removal from the current educational setting. A vicious cycle is replayed of student misbehavior reacted to by adult punishment which is repaid in kind by more student misbehavior (Sulzer-Azaroff & Mayer, 1994) and often teachers only see removal as a solution to the continual disruption.

The teacher-student cycle typical ends with the student who is exhibiting the most challenging behaviors being excluded from the educational setting. This exclusion may not occur immediately as a physical isolation. Instead, it may present as an emotional or psychological one. The emotional distancing of an adult from a student is often a cue to other students to isolate "the culprit" as well from their social circle. Long-term social rebuffs cause psychological damage for students who are already vulnerable. Physically removing the student provides the teacher with a sense of relief and reinforcement for using punitive or aversive consequences. If the teacher lacks the automaticity to implement positive techniques to address misbehavior, he/she is more than likely to repeat the use of punitive/aversive techniques in reaction to a similar behavior displayed by another student or when/if the student returns to the educational setting.

**Importance of the Study**

Students do not learn better ways of behaving when a teacher uses punitive/aversive consequences for misbehaviors (Sugai & Horner, 2002, 2009). The immediate and/or temporary halting of the student misbehavior reinforces the teacher to use the aversive consequence. If the response by the teacher continues to provide a sense of relief, the reaction is then justified and there is no reason to reflect or develop a different approach. Relief and justification also lead to less consideration of teaching the student new skills. Teachers are reinforced to use the same techniques which provided relief earlier in order to avoid the cycle of struggling with students. They do not recognize the relief is often short-term and are not reinforced to find a different reaction to their students' misbehavior (MacDonald & Speece, 2001).

To successfully address inappropriate behavior and teach students new skills and better ways of behaving, the teacher will need to teach acceptable or new behaviors in a consistent and positively reinforcing manner. Teaching students new behaviors requires that the teacher use principles that include positive reinforcement for the behavior change while concomitantly creating opportunities for the students to use the new learning (Rancifer, 1995).

Five principles of behavior reinforcement and maintenance were taught to teachers for the management and change of students' misbehavior in the classroom. These principles have a long history of research showing that when consistently used, behavior changes and students' use of newly learned skills are maintained. A major premise is that the consistent implementation of the principles is critical to establishing a positive learning environment. This environment is where every student can become proactive, productive, participatory, and can successfully change behavior and learn new skills.

The effectiveness of these principles is predicated on the belief that teachers will reinforce and teach the desired new behaviors rather than focus on punishing the misbehaviors. The only fallacy is the human error factors; specifically, the adult's inconsistent implementation of principles, misidentification of what is increasing behavior, and reverting to negative/aversive consequences when faced with frustration.

## The Objectives of the Study

The five principles that teachers must use in order to reinforce effective behavioral change are: (1) the teacher must see the desired behavior before reinforcement can be given; (2) the teacher must reinforce the desired behavior immediately after seeing the student perform it; (3) the teacher must reinforce the desired behavior each time the student performs it; (4) if a tangible reinforcer is used, it must be paired with a social reinforcer; and (5) once the teacher is satisfied with the student's display of the desired behavior, he/she can begin reinforcing intermittently (Shea & Bauer, 2012). These principles lay the foundation for making changes to challenging misbehaviors that cause interruptions to learning and undermine academic success as well as the underpinnings of creating a safe classroom environment. The objectives of this study are to examine teacher use of these principles.

## Methodology of the Study

The participants were 34 teachers (15 males and 19 females) in their second year of elementary grade teaching while simultaneously working on their master degrees in special education. They taught elementary grades ranging from 3 through 6 grade in inclusive classrooms for students with and without disabilities. All teachers provided information confirming that they currently had at least one student with challenging behaviors in their classroom who had been removed for behavioral reasons more than once during the last three months. Each teacher completed a pre-course survey regarding their level of confidence when working with challenging student behaviors, their self-perceived abilities to make behavior changes for students with challenging behaviors, their ease of data collection for identifying baseline and post data on targeted student behaviors, and capacity for following fidelity of behavioral change techniques for intervention.

All teachers enrolled in a 15-week class on behavior management that focused on the use of the five principles for behavior reinforcement. The course project was a functional behavioral intervention involving a challenging behavior targeted for behavior change support through the implementation of the five principles. Teachers completed the post survey after finishing the course project.

### Course Components for Using the Five Principles

The principles of behavior reinforcement taught in the course are dissected in the following pages with a detailed explanation of implementation effectiveness and the conceptual foundation of each principle. Each explanation is followed by a description, the research basis, and an example and nonexample of a teacher implementing each principle. Critical factors in the successful application of the principles are the timing of reinforcement; specifically in terms of immediacy and consistency, systematic implementation with fidelity, understanding reinforcing behavior(s) (Maag, 2001), and then the scheduling and maintenance of the desired behavior (Fisher, Piazza, & Roane, 2011).

### Reinforcement is Only Given when the Behavior is Seen

If the teacher wants a student to behave a certain way, he/she must see the student perform the desired behavior, or at the very least some portion of it, before he/she can reinforce it. This principle may seem simplistic in its statement; however, very often teachers try to reinforce a behavior that the student either does not have in their skill repertoire or the student does not know all of the steps for skill completion. Therefore, the teacher must take caution to be sure he/she is only reinforcing the behavior he/she want to see (Walker, Shea, & Bauer, 2004), rather than the misbehavior. Once the teacher sees the desired behavior performed, he/she must reinforce it if he/she wants to see it more often (Mather & Goldstein, 2001). It is essential that the teacher reinforces the student only after he/she performs the desired behavior (Kerr & Nelson, 1989). Teachers may give reinforcement when they have no intention to do so. They may mistakenly reinforce when they don't mean to and should be clear in the intentional use of reinforcement for the behavior they want to see displayed.

For example, Madsen et al., (1968) found that when teachers used verbal reprimands and told students to sit down, the students being observed increased the number of times they got out of their seats. In their study, the action by the teachers of using a verbal reprimand became the reinforcement for the students to get out of their seats. By using the negative verbal reprimand, instead of a positive reinforcement for staying in their seats, the teachers thwarted student's learning a new behavior or skill; staying in their seats during independent work time by teacher coercion reinforced an unintended behavior (Shores, Gunter, & Jack, 1993). The first principle emphasizes that the teacher must see the desired behavior performed by the student and then reinforce that behavior after he/she see it. Reinforcing the behavior he/she desires to see more often will promote the student to display it more often. If the only time the teacher notices the student is when he/she is out-of-seat, the opportunity to reinforce in-seat behavior has passed. Also, the teacher must understand what is reinforcing the student. In the study described above, the students were reinforced by the teachers providing negative verbal attention; thus, if the teachers in the study had used verbal praise when the students were in-seat (e.g., the desired behavior), there would have likely been a different outcome in the classroom behaviors during independent work time.

The barrier to using this principle is when the student "never" performs the behavior that the teacher wants to see. One example that often occurs is that the student is not compliant when a teacher makes a request, so the teacher is unable to give a positive reinforcement for that behavior. Ways in which to implement this principle effectively and to overcome the barrier of the unseen behavior will be discussed in further detail in the discussion section.

Beneficial outcomes demonstrate the importance of implementing this principle for both the teacher and the student. Initially, the student is taught a new behavior and when using the new behavior that is desired by the teacher is reinforced by the teacher for that use. The student's use of this new behavior should also earn reinforcement from other individuals, such as peers or personnel in the educational environment. Thus, as the student acquires this new behavior as a skill, uses it in a variety of environments while receiving reinforcement, the use becomes part of the student's regular repertoire of behavior. As the behavior becomes a consistent pattern of use, which is referred to as automaticity by Csikszentmihalyi (2008), the teacher gains benefit by recognizing that positive reinforcement of the desired behavior is effective in getting the student to show the behavior he/she wanted to see. There is less stress felt by the teacher, and in turn, by all students with whom the teacher has contact. As the teacher repeatedly provides positive reinforcement and sees a desired behavioral increase by students, his/her use of positive techniques is promoted and reinforced (Mather et al., 2001). New behaviors are required by both the teacher and the student for either to receive reinforcement from the other (Wright, 1994). If this first principle is not implemented effectively, trying to implement the other principles will be useless for positive long-term outcomes. See Figure 1 for an example and nonexample of a teacher implementing this principle, first, in an effective way and then, in a way that defeats the principle use. Therefore, this principle is considered the initial step in teaching new behaviors and in reinforcing desired behavioral displays. The successful application of the first principal allows the teacher to use the next two principles which focus on consistent and immediate reinforcement.

**Figure 1: The Example and Nonexample of Reinforcing a Desired Behavior When It Is Seen**

Mr. Mike is an elementary school teacher with a student named Nancy. Rather than using words, Nancy cries out when she wants something. Mr. Mike knows that Nancy can verbalize the words for things she wants and he desires to hear Nancy talk when she wants something. Mr. Mike prompts Nancy to talk each time she cries and then waits; only reinforcing Nancy when he hears her use words. As result, Nancy talks more often and uses words to ask for what she wants.

Mr. Mike has a paraeducator who also works with Nancy in his room. When Nancy begins to cry, the paraeducator will hold up and name different objects for Nancy's selection. Nancy cries until the object she wants is presented to her by the paraeducator. When Nancy takes the object the paraeducator names the object again and praises Nancy for selecting the object. Nancy rarely uses any words with the paraeducator.

Teacher Reinforces Immediately When the Behavior is Seen

If the teacher wants to see the desired behavior used often by the student, he/she must reinforce the student immediately after he/she sees the behavior displayed (Walker et al., 2004). The reinforcement provides a greater chance that a clear message is delivered to the student of which behavior is desired by the teacher.

This principle emphasizes that reinforcement must be provided right after the occurrence of the behavior you want because the positive reinforcement strengthens the desired behavior when it is given immediately after the behavior is performed (Martin & Pear, 1978). The teacher must reinforce without delay if the goal is to see the student exhibit the desired behavior frequently, and he/she must provide the positive reinforcement immediately if he/she want to see the positive impact of the reinforcement. There is a systematic relationship between the desired behavior and the consequences (Kerr & Nelson, 1989). Again, the reminder is provided for the teacher; the reinforcement provided by the teacher to the student must be viewed as desirable by the student (Haring & Phillips, 1972).

If the teacher delays giving reinforcement immediately upon seeing the desired behavior, he/she risk having the student not understand which behavior is being reinforced (Mather & Goldstein, 2001). This principle requires that the teacher gives reinforcement for a desired behavior immediately to get the student to use the desired behavior more often leading to its use with automaticity.

The importance of this principle is demonstrated by the beneficial outcome of the student using a new desired behavior. During the initial stages when teachers want to see a desired behavior, the principle of immediately reinforcing the behavior with consistency is essential (Walker et al., 2004). Benefits of this principle for the student is that it immediately provides him/her with the understanding of what the teachers want him/her to do and the reinforcement promotes the student's generalized use of new desired academic behaviors and/or new social behaviors (Ryan, Pierce, & Mooney, 2008). The example and nonexample in Figure 2 provide a typical teacher dilemma when trying to provide reinforcement immediately to control fidelity. Providing reinforcement immediately and consistently when the behavior is seen provides necessary feedback. The feedback encourages the occurrence at the level of automaticity and the likelihood that the increased behavior will be used in other settings beyond the initial reinforcement setting.

**Figure 2: Example and Nonexample of Reinforcing Immediately When the Behavior Is Seen**

Mr. Anderson is attempting to increase the number of times Jack raises his hand when he wants to talk in class. Mr. Anderson immediately reinforces Jack when he raises his hand by giving him a favorite game card and praising him. The first week, Jack raised his hand and received the reinforcement immediately. During the week, he significantly increased the number of times he used his hand to get permission to talk. During the second week, two things occur that made reinforcement inconsistent. Mr. Anderson sometimes allowed a particular student to just begin talking without raising his hand and whenever class was chaotic and hand-raising was requested, reinforcement for Jack's hand-raising was totally forgotten or delayed. As a result, Jack frequently talked without raising his hand for permission. Mr. Anderson realized, because he had been inconsistent in giving the reinforcement, Jack was not raising his hand to get permission to talk. Mr. Anderson recognized that he had created the reoccurring problem of Jacking not raising his hand and began immediately and consistently reinforcing Jack's hand-raising behavior.

Teachers Must Reinforce Each Time They See the Behavior

If the teacher wants to reinforce a new behavior, so the student is doing it as often as the teacher desires, then during the initial stages the behavior must be reinforced each time the teacher sees the student perform it (Walker et al., 2004). Even if that behavior is seen many times in the same day, the teacher must reinforce it each time, especially when he/she first sees the student initiating the display.

This principle and the previous one are often viewed as synonymous with one another. When teachers first hear them they do not recognize the separateness of steps because of the dependency the principles have upon one another; each principle is an individual entity. The importance of this principle is consistency while the other is immediacy. When the teacher begins to sees the behavior demonstrated consistently by the student he/she can be assured that he/she is applying the principle correctly. The goal of using this principle is to get the student to perform the behavior more often because the more the behavior is performed, the more natural it becomes. An academic example for this principle is a student who receives reinforcement each time for spelling words correctly. The student will put forth more effort to correctly spell all words if he/she feels correctly spelling words is rewarding and if he/she views the reinforcement being given as reinforcing (Brownell et al., 2012).

This student's increase in performance will also be highly noticeable if the teacher is reinforcing the new behavior each time he/she sees it because the new learning will be demonstrated quickly by the student. The fastest way to get a student to display the new spelling behavior is to provide the reinforcement they desire each time they display the desired spelling behavior. If the teacher is delivering reinforcement each time the student is doing the desired behavior, the behavior will be performed by the student easily and eventually without prompting from the teacher. The student's use of the behavior will become habitual and will eventually be done with automaticity. The behavior has a greater chance of being performed if it is something useful, natural, or helps the student get the desired reinforcement.

The example in Figure 3 describes how Mr. Meyers identifies a specific behavior and provides reinforcement that will allow the student to perform the behavior more often and continue to do so without a prompt. In the nonexample, the second teacher, Mrs. Williams does not reinforce each time the behavior is seen. A nonexample is provided to ensure that the reader can identify the difference between both the use of consistent reinforcement for the desired behavior and the lack of student consideration by the teacher for the desired reinforcement. It is clear that the word "Good" is not considered as reinforcement by the student.

**Figure 3: Example and Nonexample of Reinforcing Each Time When the Behavior Is Seen**

Mr. Meyers wants Joni to join in the science class discussions with comments relevant to the topic. Each time Joni provides a relevant comment during a class discussion, Mr. Meyers provides reinforcement about the specific way in which Joni added to the discussion. Social reinforcement is consistently given for two weeks every time Mr. Myers hears Joni contribute a relevant comment during class discussion. Mr. Meyers continues reinforcing Joni's discussion behavior until Joni is able to join in the class discussion in a relevant without prompting. Mrs. Williams also wants Joni to join in her social studies class discussions with relevant comments. Each Joni provides any comment during class discussion Mrs. Williams corrects Joni if her comment is not relevant or says "Good" when Joni's comment is relevant. Mrs. Williams corrects Joni if her comment is not relevant. Mrs. Williams often simply moves on with the discussion after a comment without any recognition one way or the other. Joni increases his nonrelevant comments in Mrs. Williams' class.

If the Teacher Uses a Tangible Reinforcer, Then Pair it with a Social Reinforcer

There are times a student needs motivation or an incentive to begin using a behavior he/she does not use or has not been taught previously. Tangible reinforcement can be powerful and sometimes is necessary to move a student toward displaying an uncomfortable or unfamiliar behavior. The tangible must be an item that the student desires and sees as rewarding. Eventually, teachers will want to stop giving the tangible reinforcement and have the student use the behavior without a prompt (Dozier et al., 2012). Social reinforcement is usually desired by the student from a designated individual or a peer group. The designated individual may not be the teacher, and thus, the individual who provides the social reinforcement must be identified as desirable to the student (Jones et al., 2014).

Many teachers think of reinforcement as a tangible and believe reinforcement should be given rarely and only when the students are doing something extraordinary to earn it. Tangibles have quite a controversial history and eventually the teacher will want to move away from using tangible reinforcement and use the power of the social reinforcement to maintain the behavior performance (Gable & Hendrickson, 2003). If a tangible is necessary to support the initiation of the behavioral display, the teacher can stop using the tangible reinforcement once the student uses the desired behavior at the satisfactory level. The level of satisfaction is set when the teacher first identifies the behavior he/she wanted to see the student display. Reinforcement must still be given to maintain the student's use of the behavior. The continued use of the social reinforcement, whether given by the teacher or by others such as paraeducators, administrators, or peers, depending on who students find most potent, can be very powerful in maintaining the desired behavior (Jones et al., 2011). Once the tangible reinforcement is faded and no longer given, the social reinforcement should be continued to maintain the desired behavior. To achieve effective maintenance, pair a tangible, if used, with a social reinforcer.

The ultimate importance of this principle is to get the student to use the desired behavior and then, to continue using it, supporting the student's automaticity in the decision to use it when needed. See Figure 4 for an example and nonexample of teachers using a tangible with a social reinforcer.

The example demonstrates that by initially pairing a tangible with social reinforcement the desired behavior can be maintained after the tangible is no longer given. In the nonexample, the science teacher provides a tangible, however, fails to target a behavior to reinforce consistently and did not pair a social reinforcer with the tangible.

**Figure 4: Example and Nonexample of Pairing Tangible and Social Reinforcement**

Mr. Jackson works with Alexia who is not able to write a simple sentence. Mr. Jackson desires to see Alexia write a simple sentence; he begins by first explaining what a simple sentence includes and then provides an example. Mr. Jackson uses this teaching method dai
ly for 1 week and then has Alexia write her own simple sentence. Each time she writes a sentence successfully, Mr. Jackson reinforces her by giving her a RTI school ticket and a big smile. Alexia tells Mr. Jackson she loves getting the tickets and enjoys his class. After two weeks Alexia begins writing her own sentences and showing them to Mr. Jackson even when it was not writing time. The teaching sessions, with reinforcement, are continued for 1 month. By the end of the month, Alexia is independently writing three simple congruent sentences. Mr. Jackson continued to give her the ticket paired with a smile as reinforcement each time she produced sentences of that quality level. Mr. Jackson shared what he was doing with the science teacher. The science teacher desired to see Alexia write in his classroom. The science teacher told Alexia to write sentences for her science assignments and when she wrote any words on her paper he gave her a RTI school ticket the following day. Alexia did not perform well in writing sentences in science. Mr. Jackson explained the need for immediacy and consistency in reinforcement and the possibility of needing to pair a tangible with a social reinforcer to the bewildered science teacher.

Tangibles are often used by teachers without considering whether they are needed or even desired by the students. The main purpose for using tangible reinforcement is to initiate the student's use of a specific behavior, especially if he/she does not initially use the skill. The implementation of this principle will benefit and assist the student in reaching satisfactory use of the desired behavior and benefit the teacher in understanding tangible reinforcement does not need always to be used to support student use of new behaviors (Walker et al., 2004).

Once the Behavior Reaches Satisfaction, Teachers Do Not Need to Reinforce All the Time

The teacher must have previously decided what level of performance he/she would be satisfied with when he/she see the student perform the desired behavior to know when to begin to reinforce intermittently. This decision is made by the teacher before the student shows the desired behavior consistently. Mr. Jackson, in Figure 4, preset his level of satisfaction for Alexia by examining her baseline and predicting how long she would need to be reinforced to accomplish the task he was teaching. He considered her initial level of motivation to perform the task when he decided a tangible was also necessary. Knowing the baseline of the behavior displayed by the student can help teachers predict levels of satisfaction with student performance. If personnel are collaborating on the student behavior, the group can predict at what level or to what degree the student can achieve the desired behavior. Once the student performs the desired behavior at the level of satisfaction, it is no longer reinforced each time or immediately after the teacher sees the display (Martin & Pear, 1978). The teacher makes the decision to provide reinforcement only every nth time the behavior is seen. The intermittent reinforcement could be given, for instance, every 3rd time the teacher sees the student display the behavior. As the student continues to display the behavior, the teacher begins to fades the reinforcement at an increasingly intermittent rate. If the reinforcement was a tangible paired with a social, the tangible is faded first, and the social reinforcer is continued at a consistent rate until satisfaction is met.

This principle of intermittent reinforcement is important to use after the student's behavior has reached the satisfactory level of performance that the teacher wants to see. The teacher will no longer give the reinforcement each time and immediately because the student is showing the learned behavior as a natural behavior without being prompted to use it (i.e., automaticity). The teacher calculates how much effort he/she provides so enough reinforcement is given to sustain or maintain the student's use of the desired behavior (Walker et al., 2004). It may be necessary not to fade the reinforcement as quickly as first predicted; the rate of intermittent reinforcement is indicated by the student use and maintenance of the behavioral display.

See Figure 5 for an example of intermittent reinforcement with a plan for fading the tangible and continuing the utilization of the social reinforcer. Also included in Figure 5 is a nonexample of the way to effectively use intermittent reinforcement. The emphasis for using this principle is to promote the student's use of the behavior as his/her own and in a way that allows him/her to get reinforced naturally. The use of this principle by the teacher indicates that the student is performing the desired behavior at a level that is seen as natural and commensurate with same age or developmental age peers. The student may need to be directly taught that the use of this behavior can be used in other settings as well as with other individuals if he/she is not using it elsewhere.

**Figure 5: Example and Nonexample of Reinforcement after Behavior Has Reached Satisfaction**

Ms. Williams wants to increase the number of addition problems Mike completes correctly during seatwork time. Ms. Williams is reinforcing Mike each time and immediately upon his completion of each correct addition problem. Mike is not excited to do seatwork and in the past has been able to avoid it by being openly noncompliant. Ms. Williams provides a powerful incentive by combining a tally mark (exchangeable for a tangible) and a pat on the back when Mike completes a problem. Mike feels rewarded by both the tally mark and the social pat on the back. Ms. Williams uses Mike's baseline work (i.e., up to 15 problems) completion to decide that her satisfactory level would be reached when Mike displays completing 20 addition problems independently. After Mike is able to complete the 20 problems correctly during independent seatwork, Ms. Williams plans to reinforce him in intervals rather than each time, watching to ensure that Mike stays motivated and consistent with his work.

A nonexample would occur if Ms. Williams decides one day to wait and reinforce Mike when he completes 5 problems correctly rather than each problem. If Mike performed that day by completing 5 problems without receiving reinforcement immediately and each time and this caused Ms. Williams to decide he could do the rest without reinforcement, then he may begin to perform as inconsistently as the teacher reinforces. As a result Mike would not reach a satisfactory level and Ms. Williams would not be satisfied. Mike would more than likely not become independent during seatwork and Ms. Williams would believe the technique "did not work".

Other school personnel should also prompt and socially reinforce the student when they see him/her performing the behavior in other settings. The teacher can support colleagues' understanding that they also help strengthen the behavior through reinforcing the student's intrinsic appreciation of performing the behavior and through the extrinsic reactions from others seeing the student perform the behavior. By having teachers and others reinforce the desired behavior, it will help the student to continue performing it (Zirpoli & Melloy, 1993).

## Results

The primary intent of this study was to determine whether there was any differences in teacher perception of their confidence and ability to work with students' with challenging behaviors before and after training and practice using the five principles of behavior reinforcement. Teachers responses regarding their level of confidence when working with challenging student behaviors, perceived abilities to make behavior changes in students with challenging behaviors, ease of data collection for identifying baseline and post data on targeted student behaviors, and fidelity of behavioral change techniques for intervention were analyzed by a comparison of means using a paired-sample t-test to evaluate the null hypothesis.

The t-test results indicate that there is a statistically significant difference between the teachers' confidence, perceived abilities, data collection, and fidelity of implementing behavior change and working with students with challenging behaviors before and after the classroom management course focused on the five principles of behavior reinforcement. As displayed in Table 1, there are statistically significant differences, at the .05 significance level, in pre to post scores on the survey for teacher perceived confidence, ability and use of the five principles of behavior reinforcement. Results show that confidence, perceived ability and technique use increased. The increased in perception regarding ability and technique use was positively correlated with the teachers' graded project where they demonstrated the ability to use of the five principles to reinforce behavior change.

Results of the paired samples t-test show that mean survey differs before taking the course and implementing the five principles ($M = 2.44$, $SD = 1.014$) and after taking the course and implementing the five principles ($M = 3.62$, $SD = .793$) at the .05 level of significance ($t = -7.50$, $df = 33$, $n = 34$, $p < .05$, 95% CI for mean difference 1.51 to -.860, $r = .531$). (See Table 1).

**Table 1: Paired Samples t-test: Teachers Perception Before & After the Five Principle Use**

| | Before Five Principles | | After Five Principles | | | 95% CI for Mean Difference | | | |
|---|---|---|---|---|---|---|---|---|---|
| Outcome | M | SD | M | SD | n | | R | t | df |
| | 2.44 | 1.014 | 3.62 | .793 | 34 | -1.51, -.860 | .531* | -7.50* | 33 |

* $p < .05$.

## Discussion

Behavior change and reinforcement are integral to teachers' everyday success and ability to continue the flow of instruction without interruption. Much stress and lost academic time can be alleviated when teachers begin their classes with the mindset of using the principles of behavior that reinforce, sustain, and maintain the desired student behavior displays. Teachers must be introduced to or reminded of the effectiveness of the well-researched use of the principles of behavior reinforcement and maintenance. Using the five principles for behavior reinforcement and maintenance has to be intentionally and consistently used in order for teachers and students to be successful.

### An Example of All Principles Use

If class rule-breaking behaviors occur, a teacher can begin by reminding the student of the rules and if necessary, then implement the principles of behavior reinforcement with *a focus on the behavior that needs to be seen* (Principle 1). Once the teacher can reinforce the behavior, he/she desires to see the student perform they must consistently use the principles to *reinforce the behavior immediately* (Principle 2) *and to reinforce each time* (Principle 3) *when the behavior is seen*. If the teacher believes the student needs support to begin using the desired behavior, he/she must first ensure that the reinforcement provided is viewed as reinforcing to the student. If support is still necessary, provide a tangible seen as desirable by the student. The teacher can then implement the principle of *when a tangible is given it must be paired with a social reinforcer* (Principle 4). The tangible will be faded while continuing the social reinforcer to maintain the behavior throughout the intermittent reinforcement stage. Upon seeing the behavior performed by the student *to the teachers' satisfaction, the teacher can begin to intermittently reinforce the behavior* (Principle 5). The follow-through of the five principles implementation by the teacher will prevent, alleviate, and eliminate the display of low-level challenging behaviors by their class or individual students.

The teachers in the study felt increased confidence to deal with challenging behaviors. Teaching the desired behavior requires the teacher to know and understand the steps involved in the skill or behavior they desire to see. The typical barrier for reinforcing Principle 1 was trying to get the student to display any part or step of the skill or behavior if they never used it. The process of dissecting the skill into teachable steps is referred to as a task analysis (Clark et al., 2012). When students fail to display a part of the behavior or the entire behavior initially, a task analysis of the steps involved in doing the behavior must be outlined. The teacher can begin by directly prompting the student to perform the behavior step-by-step. It is appropriate to use prompts to get the student to perform a step of a behavior so that it can be reinforced when teachers never see the entire behavior performed. If the student does not respond to prompting, modeling by the teacher or a peer can be used showing one or a variety of ways to perform the behavior (Bandura, 1981). Self-as-model through video-taping the student performing the behavior and having the student watch themselves performing the behavior well and being reinforced for doing so is another research-based practice that is effective (Axelrod, Bellini, & Markoff, 2014).

The teachers' perceived abilities to make behavior changes in students with challenging behaviors increased significantly, especially in the area of tangible reinforcer use. They became aware and recognized when to use tangibles. If the student does not respond as the teacher desires, a tangible paired with social reinforcement can be used to get the student to initiate performing the behavior. Ensure that the reinforcement being used is one that is desired and is viewed as rewarding by the student. Given the many responsibilities teachers have, teachers in this study found it difficult to collect data with ease in a systematic and consistent way. Techniques for more ease of data collection are necessary as teachers in this study found having baseline to work from was essential in predicting how long before students would display behaviors at a satisfactory level. Having ease of data collection will also provide confirmation on the fidelity of behavioral change techniques for intervention being used by all school personnel involved.

Teachers in the study indicated needed clarity on these essential environments in order to implement the five principles effectively. For teachers to increase the maintenance and transfer of the skills or behaviors learned, there must be multiple opportunities and settings for students to use the behavior. For the teachers to orchestrate situations in the student's educational setting where the student can use the behavior and where it can be reinforced by others when displayed, they must have cooperation from others within the setting. Further use of and research into collaborative techniques teachers can use with colleagues in educational settings is needed to create authentic situations that will promote student maintenance and transfer of skills and behaviors. The results of this study indicate that once teachers have the opportunity to learn and practice the five principles for behavior reinforcement that they can implement and effect change for the students' benefit in both social and academic settings.

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