THE USE OF REINFORCEMENT OF VERBALIZATION TO IMPROVE ACTIVITY ENGAGEMENT FOR ELEMENTARY SCHOOL CHILDREN WITH ADHD IN CLASSROOM SETTINGS

A Thesis

Presented in Partial Fulfillment of the Requirements for

the Degree Master of Arts in the

Graduate School of The Ohio State University

By

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ABSTRACT

Reinforcement of verbalization (RFV) was investigated as an intervention to increase activity engagement of three first and second grade children who had diagnoses of Attention-Deficit Hyperactivity Disorder (ADHD) or who presented classroom behaviors consistent with ADHD diagnoses. A multiple baseline design across participants was used to manipulate the RFV procedure. RFV consisted of the students telling the teacher the appropriate behaviors they would exhibit and then receiving consequences from the “Happy Sack”, a bag that contained different types of activity rewards or small trinkets written on slips of paper. To promote generalization to a different setting and teacher, a picture of the “Happy Sack” was placed in a location within the same classroom in which the students received instruction, but with a teacher who did not implement RFV procedures. Additionally, teacher attention was monitored throughout the study. Results showed significant increases in engagement for all participants upon implementation of RFV. Improvements were seen for two participants in the generalization setting. Teacher attention was at low levels throughout the study for all participants, independent of whether or not they exhibited appropriate engagement. The results showed that RFV was effective at improving engagement for children with a diagnosis of ADHD, or who exhibited classroom behaviors consistent with ADHD.
DEDICATIONS

Dedicated to my loving husband, Gary
ACKNOWLEDGMENTS

I wish to thank my adviser, Dr. Pamela Osnes, for all support, encouragement, and solid dedication to deadlines, which made this thesis possible. I thank you also for teaching me to be successful.

I wish to thank Dr. John Cooper for his support and help as my second reader.

I wish to thank my wonderful husband Gary. Without his love, support, and dedication to this process, I may have quit. Thank you for your belief in me. You helped me believe in myself.

I wish to thank Mary Cornell for helping with data collection and moral support throughout the entire process. Thank you also for the tripod save.

I wish to thank Joel Vidovic for his help on the graphs.

I wish to thank my step-sons, Andy, Randy, and Austin for putting up with my need for quiet computer time and for their support at my oral defense.

I wish to thank my parents for prayerful support throughout my college education.

I wish to thank Donna Villareal and Gwen Dwiggins for their help in the beginning stages.

I wish to thank Dr. Nancy Neef for all that I learned in her research class.

Without that knowledge, this process would have been much more difficult.
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Cartledge, R. Gardner III, L. D. Peterson, S. B. Hersh, & J. C. Dardig (Eds.), Focus on
behavior analysis in education: Achievements, challenges, and opportunities. Upper Saddle
River, NJ: Prentice Hall/Merrill.

FIELD OF STUDY

Major Field: Education

Area of Specialization: Special Education, Applied Behavior Analysis
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CHAPTER 1

LITERATURE REVIEW

Attention-Deficit/Hyperactivity Disorder

Attention-Deficit/Hyperactivity Disorder (ADHD) is a disorder that affects 3-5% of children in the United States (American Psychiatric Association, 2000). Students diagnosed with ADHD require special instructional practices in classrooms because behaviors associated with the diagnosis tend to result in increased activity levels, impulsivity, and inattention (NIMH, 2000). "The essential feature of Attention-Deficit/Hyperactivity Disorder is a persistent pattern of inattention and/or hyperactivity-impulsivity that is more frequently displayed and more severe than is typically observed in individuals at a comparable level of development" (American Psychiatric Association, 2000, p 85).

ADHD is exhibited in a variety of ways, and can be especially noticeable within a classroom setting when the expectation is for a child to sit and attend for relatively long periods. Students with ADHD tend to exhibit inattention in the classroom, which can be described as the inability to complete a task before moving on to a new task or having difficulty with organization (i.e. notebook or desk organization, and lack of preparedness). Some characteristics of inattention include not attending to detail, not completing school work or tasks, not listening, disorganization, and exhibiting a dislike for mental tasks, tasks that require focused attention which can be observed as increased
avoidance behaviors (Reis, 2002). These displays of socially inappropriate behavior may cause increased social issues for children diagnosed with ADHD. Unfortunately, these difficulties can cause peers to avoid the child with ADHD. Peers may shun these children during social situations due to impulsivity during play and inability to wait their turn to talk or in turn taking play. Colton and Sheridan (1998) refer to children with ADHD as having major difficulties with peer relationships and social skills. In fact, “Children with ADHD are often described as bossy, intrusive, aggressive, and disruptive” (p 5).

A variety of treatments is available for children diagnosed with ADHD. They include medical, behavioral, and cognitive-behavioral interventions, and various combinations. In cooperation of the National Institute of Mental Health (NIMH) and the Office of Special Education Programs (OSEP) of the United States Department of Education, six groups of research teams studied multiple interventions for ADHD. The study compared four types of treatments using a total of 579 children diagnosed with ADHD. The four treatments were medical management alone, intensive behavioral intervention alone, a combination of medical management and behavioral intervention, and community care alone. Medical management (for both medical alone and combined treatments) included a strictly monitored medical intervention involving a titration phase consisting of various doses of medication and placebos given three times a day. Treatment response and side effects were monitored throughout the study. The
behavioral intervention package included parent training, child-focused treatment, and school-based intervention. Parent training involved meeting with a behavior therapist as many as 35 times in mostly group settings. The therapists made visits to schools to meet and consult with teachers and personal aides. Additionally, the children attended an 8-week treatment program camp where intensive behavior therapy was used to improved behavior. Overall, the results showed that medication showed the most results for children with ADHD. However, a combination of medical management and behavioral treatment showed a better two year outcome in the areas of social skills, academics, and parent-child relationship.

*Medical Interventions for ADHD*

The most well known intervention for ADHD is medication (Searight, Nahlik, and Campbell, 1995). There are several types of medication available, including psychostimulant medications or Tricyclic antidepressants. Prescription drugs such as Methylphenidate (Ritalin) and amphetamines (Dexedrine, Dextrostate, and Adderall) comprise some of the possible stimulant medications (NIMH, 2000, p 4). Each medication has potentially negative side effects such as loss of appetite, weight loss, and difficulty sleeping. In addition, these medications need to be closely monitored in order to be most effective. According to the NIMH (2000), “Different doctors use these
medications in slightly different ways” (p. 4). In order to safely use medical management of ADHD, a parent must have confidence that the child's doctor prescribes medications while using the best possible approach.

Many professionals purport that, “A combination of carefully monitored stimulant use and intensive behavioral training reaps promising benefits for children diagnosed with Attention Deficit Hyperactivity Disorder” (Bower, 1999, p. 388). Rushton, Fant, and Clark (2004) conducted a survey of physicians in Michigan in order to determine how well they followed the published guidelines of the American Academy of Pediatrics (AAP) for diagnosis of ADHD and treatment of children with ADHD. Findings showed that pediatricians were more likely to consider and adhere to AAP guidelines than family practitioners. When considering overall adherence to a combination of all AAP guidelines, a minority of primary care physicians were found to routinely use all guidelines for diagnosis and treatment. Limitations to this study include both the secluded region of study (Michigan) and the use of self-report.

_Behavioral Interventions for ADHD_

There has been a multitude of behavioral interventions investigated for potential use to suppress behaviors associated with ADHD. Some that have shown promise include the use of positive reinforcement contingent on appropriate behaviors and reactions to situations in both home and school settings by parents and teachers, behavior
management techniques taught to parents and other caregivers, and cognitive-behavioral approaches including self-management techniques including, reinforcement of verbalization procedures and correspondence training interventions.

There are several methods available for using classroom-based behavioral interventions with students with ADHD. Reis (2003) suggested increasing the use of behavioral principles such as using positive reinforcement by replacing negative comments for inappropriate behavior with positive comments for appropriate behavior, teaching self-management skills, and using behavioral contingencies to access consequences. During observations, teachers were observed giving negative comments about the child's lack of attention, talking out in class, and distracting class by participation in behaviors such as clicking a pen or playing with a paper clip. These negative comments happened frequently. The teachers received feedback on their rate of negative commenting and were told to replace these with positive commenting for appropriate behavior. Teachers noted the effect of this change as increasing appropriate behavior and decreasing inappropriate behavior. McCluskey and McCluskey (1999) report that this change in commenting can increase a child's self-esteem, in turn increasing a child's belief in success and altering their behavior.

Reis (2003) used contingency-based self-management techniques to help foster self-control in children with ADHD. The children were taught to rate their behavior. The teacher would also rate behavior. The children received points based on the number
of matches between the two ratings. Points could be traded in for classroom privileges. This method, with reinforcement playing a vital role, can lead to positive behavioral change in children with ADHD.

A case study on improving the effectiveness of classroom behavioral interventions by Fabiano and Pelham (2003) concluded that making modifications to current behavior management systems within a classroom could be advantageous to both the student diagnosed with ADHD and the teacher. They studied one child in third grade who was diagnosed with ADHD. During baseline, observers monitored the child’s on and off-task behavior, as well as the same behavior for a comparison child who was not diagnosed with ADHD. After baseline, a behavior consultant met with the teacher to recommend slight changes in the current behavior management system. The three suggested changes were: 1) to increase the frequency of earning positive reinforcers for appropriate behavior; 2) to provide feedback immediately after the behavior rather than at the end of class; and 3) to use a current non-contingent reinforcer as one contingent upon appropriate behavior. With the implementation of these changes throughout the entire school day, on task behavior increased from 66.78% to 92% in the morning and from 62.14% to 84.33% in the afternoon. These results lend support to the use of individualizing aspects of programming within whole class behavior systems to effectively change problem behavior.
In Edwards (2002), evidenced-based interventions for children with ADHD were presented for use by school and community mental health workers. Both school interventions and home interventions were explored. The most important aspect of school intervention was regular coordination between the mental health practitioner and a child’s teacher. Edwards referred to changes that could be made within the classroom that were suggested by Pfiffner and Barkley (1998). Some suggestions include breaking tasks into smaller pieces, giving immediate feedback, and making sure tasks are of an appropriate level for a child.

For home intervention, Edwards (2002) suggests parent training that should consist of teaching the parents of a child with ADHD how to appropriately manage behaviors and how to react appropriately to the child’s inappropriate behaviors. He refers to Barkley’s (1997) parent training approach:

- The program integrates six basic child-management training concepts: (a) consequences need to be immediate, (b) consequences need to be specific, (c) consequences need to be consistent, (d) incentive programs should be established before punishment, (e) parents must anticipate and plan for misbehavior, and (f) family interactions are reciprocal” (p. 130).

They indicate that a 10-week parent training program with the last session being a one-month booster session has been found to be effective.
Neef, Bicard, and Endo (2001) studied three children with ADHD and the improvement of self-control. They investigated the motivating influence of different reinforcement characteristics by looking at reinforcer rate, quality, immediacy, and effort. Three students diagnosed with either Attention Deficit Disorder (ADD) or ADHD, ages 9-11, were used in this study. A computer program was used to present two math problems simultaneously whose reinforcement dimensions differed. During baseline, each child's preferred dimensions were determined, and these were used in the training phase. The self-control training used the two most influential dimensions to systematically increase the child's ability to delay reinforcement while maintaining productivity. The study successfully used a changing criterion design until all three participants were successful at maintaining productivity during class time with a 24 hour delay in receiving reinforcement. Results showed that all three participants were most influenced by immediacy of reinforcement. After training, the students were able to show more self control in the classroom setting, allocating time to tasks which had potential for functioning as more potent reinforcers than tasks which were less potent.

Reinforcement of Verbalization, Correspondence Training, and Rule-Governed Behavior

A multiplicity of investigations has been conducted to explore the area of correspondence training (CT) as an intervention for a variety of behaviors of clinical significance. The main sequences that have been used in CT are do-say, say-do, and set-
up on report. The do-say sequence requires a participant to behave and then report their behavior. Say-do requires a participant to state what they will do and then exhibit behavior that corresponds with that report. Set-up on report requires a child to report what he will do, at which time he is shown the reinforcer that will be received contingent on correspondence.

Luciano, Barnes-Holmes, and Barnes-Holmes (2002) used correspondence training (CT) with three subjects, two who had Down Syndrome and one who had no specific diagnosis other than being developmentally delayed, ages 11-15. Phase one of the study used corrective feedback training while monitoring reporting (say) and delayed reporting, immediate and delayed doing, and say-do correspondence. Due to unsuccessful attempts to increase correspondence with the corrective feedback training, a near errorless learning training phase was implemented. This phase consisted of most intrusive to least intrusive prompting, which, when completely faded, resulted in a high rate of accuracy for all three subjects. In an earlier study, Israel and O’Leary (1973) had compared the use of say-do and do-say correspondence to increase play activities. Sixteen children with a mean age of 4.4 years participated. Say-do correspondence showed better results of correspondence than did do-say procedures. This suggested that participants in the say-do group learned to use verbal behavior to direct nonverbal behavior.
Correspondence training (CT) has been used many times in research to decrease inappropriate behaviors and increase appropriate behaviors. Whitman, Seibak, Butler, Richter, and Johnson (1982) employed correspondence training techniques to improve a variety of classroom behaviors of several children with mental retardation. In their first experiment, say-do CT was used to successfully decrease out-of-seat behavior to near zero levels for one student. In the second experiment, there were 17 participants, ages 9-12. Say-do CT techniques, with more specific verbal requirements including feedback on verbal statements, successfully improved the sitting posture of these students to the level of having more appropriate posture more frequently than the two comparison students did. In addition, there was an increase in accuracy of work. In the third experiment, there were three experimental participants with attention problems and one comparison student. Results of CT used to increase attention showed a substantial increase in on-task behavior as well as an increase in work output and accuracy of work completed. Overall, this study provides substantial support for the use of CT to increase appropriate skills and to decrease problem behavior for students with mental retardation.

Anderson and Merrett (1997) completed a study with seven secondary students who exhibited severe problem behaviors, especially talking out in class and being a hindrance to productivity in the classroom, including distracting others from their work or interfering with their equipment or materials. After implementing a say-do sequence
of correspondence training (CT), results showed that talking-out decreased to near zero levels for all but one student. Additionally, participants also showed increases in homework completion.

Baer, Detrich, and Weninger (1988) looked at the functional role of verbalizations within correspondence training (CT) procedures for six typically developing children in preschool in a toy play setting. This study consisted of two separate experiments. The first experiment used a multiple baseline design across interventions (reinforcement of verbalizations (RFV), reinforcement of following experimenter’s verbalizations, and reinforcement of correspondence) to increase types of play (doll play, bristle block play, kitchen play, or book play). In this experiment, the RFV phase alone resulted in minor changes in target behaviors. The other conditions, consisting of reinforcement of doing (following the experimenter’s question) and reinforcement of correspondence (with reinforcement delivered only after the children did what they had said they would do in response to the question), showed large increases in play with a particular toy. Results showed minimal change in behavior during RFV and a large increase in both of the other conditions. The authors concluded that the actual reinforcement of correspondence and the planning of activities (experimenter verbalization) had functional control over the child’s behaviors.

In the second experiment, the researchers implemented a multielement design nested within a multiple baseline design across responses. The target behavior of this
experiment was play with blocks, crayons, books, and puzzles. Procedures were the same as the first experiment with the addition of a reinforcement of doing with no antecedent verbalization condition. In this condition, the child played and then the experimenter reinforced the play of the children based upon what they played with. Similar results were found in the reinforcement of verbalization condition to those of the first study. In addition, the results showed that reinforcement of doing with no antecedent verbalization was least effective of all intervention procedures. To receive reinforcement for toy play, without knowing beforehand the particular type of toy play that would be reinforced, did not result in any behavior change. As in the first study, reinforcement of following the experimenters’ verbalizations and reinforcement of correspondence were most effective. These results suggest that antecedent verbalizations are important determinants of behavior change. However, it may not be necessary that the child is the person emitting the verbalization. Instead, it may be just as functional for the adult overseeing the task to produce the verbalization as for the child to do so.

Lovaas (1961) studied the effects of strengthening one class of verbal responses on a class of nonverbal behaviors. 14 participants, ages 3-7 yrs, participated in the study. Play items were used as discriminative stimuli for either aggressive or non-aggressive verbalizations, depending on the group of participants. Results suggested that the amount of aggressive or non-aggressive verbalizations increased during play as a result of reinforcement of verbalization alone. In addition, the type of verbalization that was
reinforced increased the children's participation of that type of play with the toys. For example, aggressive verbalizations increased aggressive play and non-aggressive verbalizations increased non-aggressive play. An example of a non-aggressive statement is "good doll," and an example of an aggressive statement is "bad doll." These findings suggest that RFV increases the exhibition of behavior that matches, or corresponds with, that verbalization. Additionally, reinforcement was provided for verbalizations only, not for correspondence between verbalizations and subsequent actions. This suggests that reinforcement of say-do correspondence may not be necessary to result in increases in correspondence, but that it is necessary to make clinically significant increases in correspondence.

Israel and Brown (1977) looked at the role of prior verbal training in correspondence training (CT). Sixteen preschool children (mean age of 4-8) were divided into two groups, one received prior verbal training in a reinforcement of verbalization (RFV) phase and the other did not. The first group participated in RFV, CT (say-do), and then another RFV phase. Group two participated in CT (say-do) and then RFV. Results showed that there were no significant differences between the two groups during the final RFV phase. Based on the results, the authors discussed RFV prior to CT procedures as unnecessary as has been suggested in previous research. Instead, the possibility of using CT without prior RFV was implied from these results.
Karoly and Dirks (1977) conducted a study with twelve children, aged 3-5 years. In this study, two sequences of correspondence training (CT), say-do and do-say, were compared during a self-control activity. In a say-do sequence, a statement is followed by correspondence of behavior. In a do-say sequence, the child exhibits a behavior and then makes a statement about what behavior was exhibited. While reinforcement of verbalization (RFV) alone did not result in behavior change, implementation of CT did. The results indicated a greater level of control came from using the say-do sequence than from the do-say sequence.

Keogh, Burgio, Whitman, and Johnson (1983) used correspondence training (CT) with a say-do-say sequence to teach listening behavior to four children with mental retardation. A report-do-report (say-do-say) sequence was used that involves a statement of what the participant would do, the subsequent behavior, and lastly a statement of what behavior took place. A similar study by Vincent and Gross (1996) used a sequence of report-do-report to increase academic performance of verbal planning to complete math problems correctly, eliciting teacher praise for correct problems, and reporting the number of problems correct the following day for three children in third grade.

In a classic article, Risley and Hart (1968) examined the effects of reinforcement of verbalization (RFV) on nonverbal behavior in order to develop empirically based procedures for training generalizable results. The researchers wanted to successfully modify nonverbal behavior through only the use of reinforcement of verbal behavior.
This study used three separate experiments with the same set of participants. Baseline data showed a low frequency of play activities during playtime. In addition, there were only three days when there was actual correspondence between saying and doing in response to a question from the teacher about what the children did that day. In the first experiment, the children’s verbalizations in response to the question, “What did you do that was good today,” were reinforced. Later, hand raising was reinforced when the child answered the question. During the second phase, reinforcement of content, verbalization of play with a specific toy was reinforced. Lastly, in a do-say correspondence phase, playing with the target toy followed by a corresponding verbalization was reinforced. During the RFV phase, verbalizations increased, but there was not a corresponding increase of play with the target toy. During the reinforcement of correspondence phase, the actual percentage of correspondence between verbalization and play with the target toy increased to 80-100% of the group with the group who played with the blocks averaging 100% correspondence. Correspondence by the second group (who were supposed to paint) decreased due to decreased use of the actual play materials. The second group continued making the statement which received reinforcement (i.e. “I painted.”), but the children were not required to choose to participate in painting, thus decreasing the opportunity to show correspondence between verbalization and behavior.

In their second experiment, Risley and Hart (1968) used a multiple-baseline design across behaviors to study the effects of verbalizations on the same play behavior.
The results indicated that the verbalized intent to play with a certain material resulted in the child actually playing with the material. In their third experiment, reinforcement of verbalization (RFV) and reinforcement of correspondence conditions were investigated with a reversal design in an attempt to increase the verbal behavior of the participants in reporting what they played with. In addition, the researchers used the teachers' verbal confirmations (i.e. "You did") or disconfirmations (i.e. "You really didn’t") of actual behavior to study their effect on the children’s play behavior and verbalizations of play. These results found that the teacher’s verbalizations or lack of verbalizations affected the children’s behaviors and verbalizations. When the teacher did not verbalize confirmations of actual correspondence, there was a decrease in correspondence. When the teacher did verbalize confirmations, correspondence increased.

Paniagua (1992) researched the use of CT for children with ADHD. Two of the five participants also met DSM-III-R (APA, 2000) criteria for conduct disorders. The study implemented three potential correspondence training (CT) sequences: do-say, say-do, and set-up on report. This study used a changing criterion design with features of a multiple baseline design. The three classes of target behaviors were inattention, overactivity, and conduct problems. The first two children participated in do-say training. All three CT sequences resulted in decreased problem behaviors and a simultaneous increase of appropriate behavior. For both children there was an increase in attention, causing a decrease in inattention. These results were also seen in a generalization setting.
and were maintained at follow-up. The third child participated in say-do training. This training resulted in improvement of all three target behaviors very soon after implementation of treatment. These results were maintained at follow-up in the therapy room setting, but had returned to pre-intervention levels in the classroom. However, behavior in the classroom was quickly returned to intervention levels. The fourth child was involved in set-up on report training. Results showed an immediate improvement in all three target areas that was maintained at follow-up without tangible/activity reinforcers. The fifth child was also involved in do-say training and results showed improvement in all target areas. Additionally, this child's results showed generalized improvement to academic performance. In summary, the author states that the findings "suggest that correspondence training, a method of mediated generalization, in which language is used as a mediator in the development of appropriate verbal-nonverbal correspondence represents a promising alternative treatment modality for the management of children with ADHD" (Paniagua, 1992, p 246). The intervention can decrease inappropriate behaviors at the same time as increasing appropriate behaviors. In addition, it can be used without a large time commitment, is cost effective, and is a socially validated technique.

Edward and Osnes (2002) investigated a correspondence training (CT) procedure, the use of reinforcement of verbalization (RFV), with three children, ages 7 - 9 years, who either were diagnosed with ADHD or who met criteria for a diagnosis of ADHD.
The results of this study showed that RFV alone was sufficient to decrease inappropriate, off-task behaviors and increase on-task behaviors in two classrooms. In addition to manipulating RFV, the researchers monitored teacher attention throughout all conditions of the study. This monitoring revealed that a low rate of teacher attention was provided to the students throughout the study, both before and after their appropriate behavior improved. By including this monitoring, the researchers were able to conclude that the improvement in student behavior was due to the RFV procedure and not to changes in teacher attention. This research is important because it documented that RFV could be effective without a prior history of successful CT procedures.

Several researchers have provided studies involving rule-governed behavior. This type of behavior is "operant behavior in which discriminative control or other behavioral influence does come from verbal antecedents. Often the verbal antecedent specifies the contingent relation among a setting, a response, and a consequence" (Moore, 2001, p 54). In his review of the behavioral approach to rule-governed behavior, Kunkel (1997) describes two functions that rules serve.

First, "A rule connects one or more discriminative stimuli, the associated activities, and the relevant consequences — regardless of the numerous other events that are likely to occur during the intervals between any two components of the contingency. Second, when a behavior’s consequences are temporally far removed from the present, “human beings optimize outcomes by following"
instructions or rules that specify the outcomes of their actions; in other words, it is not the delayed outcomes but rather the rules stating those displayed outcomes that more directly control the actions” (Malott, 1989, p 283) (p 699).

Deacon and Konarski (1987) suggested the idea of correspondence training (CT) as being a type of rule-governed behavior as opposed to the belief of it as a verbal regulation of behavior. They discussed the role of verbalization reinforcement as forming a rule. For example, “If I (behavior) then I’ll receive (reinforcer).” Edward and Osnes (2002) found that RFV alone caused significant behavior change for students with ADHD. They suggest that the resulting behavior change may have occurred because of rule-governance.

*Generalization Promotion*

Many studies have looked at generalization promotion and empirically supported ways to promote generalization. Guevremont, Osnes and Stokes (1986) examined the generalized verbal control by using verbalizations across multiple settings with delayed response times. The participants for this study, three children ages 4.2-4.5, participated in reinforcement of verbalization (RFV) and correspondence training (CT), if necessary. This study targeted the behaviors of peer-directed talk and straightening mats for one child. For the other participant, on-task behavior and hand-raises were targeted. Correspondence between verbalizations and behavior were taught in the school setting, and by the end of the study, correspondence had generalized to the home setting. The
authors note that the use of verbalizations at home demonstrated the strength of the reinforcement history taught at school. Stokes and Baer (1977) reviewed generalization and urged researchers to program for generalization rather than use the typical “train and hope” procedure. Their article reviewed nine types of generalization procedures typically used in published research. One of the procedures, mediation of generalization, uses some type of commonality between teaching and generalization settings to promote generalization of learning from the teaching setting to the generalization setting. Stokes and Osnes (1989) presented principles related to promoting generalization and outlined ways to promote sufficient generalization. The authors urged the use of common salient physical stimuli as one way to mediate generality. A common physical stimulus is an identical object or similar objects that are present in both the training and generalization environments. In using this approach, especially when naturally occurring objects are used, generalized learning is under the control of the natural environment of the learner.

The present study replicated the Edward and Osnes (2002) investigation in which reinforcement of verbalization (RFV) procedures effectively increased student engagement without a prior history of correspondence training (CT) with students with ADHD. It examined the effects of RFV procedures on task engagement and problem behaviors in primary aged children who were diagnosed with ADHD. The proposed study extends the idea of behavior change due to rule-governance further and examines the possibility of RFV as a method of teaching rule-governed behavior.
In addition, this study examined the effects on generalization of placing a visual cue associated with the reward used for reinforcement of verbalization (RFV) on the child’s desk in a second classroom setting in which the children received secondary instruction. As was done by Edward and Osnes (2002), teacher attention was monitored throughout the investigation.
CHAPTER 2

METHOD

Participants and Setting

All participants attended a regular education classroom in an urban elementary public school in a mid-western state. Three students participated: Ima (age 8), Al Moss (age 6), and Don (age 8). Al Moss and Don had diagnoses of ADHD. During the time of the study, Ima was completing testing with expectation of receiving the same diagnosis.

Ima was an 8-year-old girl in second grade. Her inappropriate classroom behaviors during seatwork included talking out, moving around the room, sitting improperly (i.e. feet on desk), playing with objects instead of working, and “talking back” (i.e. “You can’t make me.”, “I don’t want to.”) to the teacher when given a task. Ima’s mother has been concerned with her behavior at home and school. Al Moss was a 6-year-old boy in first grade. His inappropriate classroom behaviors during reading included talking out, sitting improperly (i.e. sitting backwards on the chair, leaning back in his chair, facing away from the teacher), playing with toys and other items, moving about the room, and talking to other students which disrupted reading group. Don was an 8-year-old boy in second grade. His inappropriate classroom behaviors included sitting improperly (i.e. on his knees); talking during times in which the students were to remain
silent while doing work; starring out the door, window, or into space, and not working on tasks during independent seatwork. In addition, Don also tended to ask questions before first trying to complete a problem independently.

All data were collected in the natural setting of the classrooms. There were 24 students in the first grade classroom and 30 students in the second grade classroom. Data collection was conducted during one in-class activity in the primary classroom that was instructed by the classroom teacher. Data were collected for Al Moss during reading and for Ima and Don during seatwork. In addition, generalization data were collected in the same classroom during a class time directed by a second teacher, while no intervention procedures only a visual cue, were in place. During this time, only a visual cue was present in the classroom. The visual cue was a photograph of the “Happy Sack” that was placed in the classroom with the second teacher. The color photograph was approximately 1x2 inches. The generalization settings for Al Moss were music and art. During art, the photograph was placed on the wall directly above Al’s desk. It was placed on the bulletin board next to the teacher in music. The generalization settings for Ima and Don were reading. During reading, the photograph was placed on the bookshelf next to the teacher and in front of both students.

Data were collected during ten-minute time samples of the selected activities. Time samples were divided into sixty 10-second intervals and a partial interval data
collection procedure was used in which behavior was coded as occurring in an interval if it occurred during any part of that interval (See Appendix A for Partial Interval Recording Method).

**Dependent Variables**

During each in-class activity, data were collected on student engagement and teacher attention. In addition, teacher implementation of the reinforcement of verbalization (RFV) procedures was monitored in order to ensure treatment integrity.

**Definitions**

Engagement was defined as behavior that was consistent with the requirements of the activity. The child was to be sitting with the legs crossed and buttocks on the floor, or remaining in the chair with the student’s buttocks on the seat (one leg may be under the buttocks), with eyes oriented toward assignment or teacher, working towards task completion, and beginning a new assignment after completion of the first assignment, with the content of any verbalization focusing on task-related questions and talk (Edward & Oses, 2002).

Off-task behavior was defined as the occurrence of any of the following three behaviors: physical disruption, verbal disruption, and movement. Physical disruption included touching peers when the activity did not require it; throwing objects; ripping, tearing, shredding, or mutilating materials in any manner; playing with items that were not task related; and exhibiting hand, arm, head, or leg/foot movements toward an
individual that were inconsistent with the activity. Verbal disruption included talking without permission; or shrieking, screaming, or yelling when the activity did not require it. Movement included lying on the floor when the activity did not require it; falling to the floor from a seated or standing position; changing location/position in-group without teacher permission; leaving group without permission; and/or getting up from group and walking around without permission (Edward & Osnes, 2002).

Teacher attention (TA) was defined as any talk to the participant, including a verbalization that specified the appropriate or inappropriate behavior that was exhibited; verbalization that made a positive evaluation of the quality of the behavior; and/or any physical behavior such as pats on the shoulder, "high fives", etc. (Edward & Osnes, 2002).

Experimental Conditions and Procedures

Participant Interview

Prior to beginning the study, each student participated in an informal interview with the researcher. In a one-on-one setting with the experimenter, the child provided verbal assent for participation and discussed stimuli that he or she would enjoy receiving and would like to have placed in the "Happy Sack" (Sulzer-Azaroff & Mayer, 1977). The "Happy Sack" was a bag that contained slips of paper with a reward written on each.
The rewards were items similar to those that the child had indicated during the interview were of interest to him/her. Each child had his/her own Happy Sack, so it was individualized to contain rewards that might function as reinforcers.

**Baseline**

There were no experimental procedures in place during the baseline phase. Engagement and teacher attention were monitored while normal classroom activities occurred.

**Independent Variable**

**Reinforcement for Verbalization (RFV)**

Immediately before the target activity, the classroom teacher asked the participant the question, “What will you do today in (class)?” Students received prompting during the first few days to answer appropriately, (i.e. “I’m going to sit still and quietly in my chair with both feet on the floor and do lots of work”). After the participants responded, the teacher said, “I’m happy to hear that you will (stated behavior). Because you answered the question, you may pick from the Happy Sack”. The teacher then presented the Happy Sack and the participant who answered picked one slip of paper, and immediately exchanged the paper for the specified reward. Any participant who did not answer the question would not have been allowed to choose from the Happy Sack. The teacher would have said, “You cannot choose from the happy sack today because you did
not answer my question. You can try again tomorrow,” and the student would have returned to his/her seat. All participants answered the question daily, receiving reinforcement every time.

In order to ensure treatment integrity, teacher behavior was monitored. Data were collected on if the question was asked correctly, if prompts were provided for the child to answer, how the teacher responded to the answer, and if the Happy Sack was presented or not. In addition, teacher attention contingent on on-task behavior continued to be monitored. (See Appendix B for the Treatment Integrity Checklist.)

Generalization Promotion

In a second classroom activity and with a different teacher, generalization was promoted by placing a visual cue of the Happy Sack on the workspace or within view of the student. A photograph of the Happy Sack was placed within sight of the participant (as described previously). This stimulus was common to both the primary classroom activity in which reinforcement of verbalization (RFV) procedures were in effect, and the secondary activity in which no RFV procedures were in effect and a different teacher provided instruction. Behavior was monitored through taking out data collection during generalization probes using the same partial-interval recording method that was used during the primary data collection periods.
Inter-Observer Reliability

Data were collected for interobserver agreement (IOA) on 50% of all observations. A second trained observer, who remained at least 6 feet from the primary observer, independently record IOA data. In order to assure synchronization of interval recording, a tape recorder was used with 10 second intervals recorded. A splitter was used to allow access to the taped intervals by each observer. An occurrence agreement of scored intervals were used to calculate interobserver agreement by dividing the number of agreements on occurrence by the agreements plus disagreements on occurrences.

Experimental Design

This study used a multiple baseline design across participants. Generalization was monitored during an activity directed by a different teacher. The generalization setting included a visual cue of the Happy Sack placed within the student’s sight near or on his/her work space.
CHAPTER 3
RESULTS

Percentage of Engagement and Generalization

Figure 1 shows the engagement of all three participants in the classroom setting. Figures 2-4 show the engagement of each individual participant in both the classroom and generalization settings. During baseline, Al Moss’s engagement behavior was at low, unacceptable levels. When the reinforcement of verbalization (RFV) condition was introduced, Al Moss exhibited high engagement with little variability in the percentage of intervals of activity engagement. In the generalization setting, it appeared that RFV increased Al’s engagement minimally, but not to acceptable levels (see Figure 2).

During baseline, Don’s engagement was at variable, low, unacceptable levels. When the reinforcement of verbalization (RFV) condition was introduced, Don exhibited high engagement with little variability in percentage of engagement (see Figure 1). In the generalization setting, the implementation of RFV gradually increased Don’s percentage of engagement to mastery levels (see Figure 3).

During baseline, Ima’s engagement behavior was at variable, low, unacceptable levels. When the reinforcement of verbalization (RFV) condition was introduced, Ima immediately exhibited high engagement with little variability in percentage of engagement (see Figure 1). Upon implementation of RFV, Ima’s
percentage of engagement in the generalization setting increased dramatically (see Figure 4). However, these data should be interpreted cautiously because there are only two data points in the condition.
Figure 1. Multiple baseline for all participants.
Figure 2. Al Moss in the regular setting (top graph) and generalization setting (bottom graph).
Figure 3. Don in the regular setting (top graph) and generalization setting (bottom graph).
Figure 4. Ima in the regular setting (top graph) and generalization setting (bottom graph).
Teacher Attention (TA)

For Al Moss, in the classroom, teacher attention (TA) contingent upon both appropriate and inappropriate behaviors during baseline was variable and minimal. Upon implementation of reinforcement of verbalization, TA contingent on appropriate behaviors was suppressed and TA on inappropriate behaviors decreased to near zero levels (see Figure 5). In the generalization settings (music and art), little TA was provided in any observation (see Figure 6).

For Don, in the classroom setting, teacher attention (TA) contingent upon both appropriate and inappropriate behaviors during baseline was minimal. Upon implementation of reinforcement of verbalization (RFV), TA contingent on both appropriate and inappropriate behaviors was suppressed and immediately decreased to near zero levels (see Figure 7). Like the data of Al Moss in the generalization setting, little TA was provided. However, there appeared to be a gradual decrease in TA contingent on engagement throughout the study (see Figure 8).

For Ima, in the regular classroom, teacher attention (TA) contingent upon both appropriate and inappropriate behaviors during baseline was variable, but minimal. Upon implementation of reinforcement of verbalization (RFV), TA contingent on appropriate behaviors decreased to minimal to zero levels and TA to inappropriate behaviors decreased to near zero levels (see Figure 9). In the generalization setting (reading),
There appeared to be slightly more TA contingent on engagement during RFV than had occurred during baseline (see Figure 10). However, due to the small number of observations, these data must be interpreted cautiously.

Overall, for all participants, the implementation of reinforcement of verbalization (RFV) increased their engagement in the training setting. There were improvements in the generalization setting for both Ima and Don, with little improvement seen for Al. In addition, it appeared for all participants that implementation of RFV decreased teacher attention to minimal to zero levels, despite increases in engagement.
Figure 5. Teacher Attention for Al Moss in reading (regular setting).
Figure 6. Teacher attention for Al Moss in music and art (generalization settings).
Figure 7. Teacher attention for Don during independent seatwork (regular setting).
Figure 8. Teacher attention for Don in reading (generalization setting).
Figure 9. Teacher attention for Ima during independent seatwork (regular setting).
Figure 10. Teacher attention for Ima during reading (generalization setting).
Social Validity

Social validity, according to Schwartz and Baer (1991), is used to “evaluate the acceptability or viability of a programmed intervention. The point of these assessments is to anticipate rejection of a program before that happens” (p. 189). Schwartz and Baer appeal to researchers to follow two steps in collection of social validity data: using feedback from all pertinent consumers and making necessary changes to a treatment package based on that feedback. Foster and Mash (1999) investigated and reported on past research and literature concerning social validity in order to increase use of it in future research. The authors state that use of this form of assessment helps to “narrow the gap between research information and practice needs,” (p. 316).

Wolf (1978), Schwartz and Baer (1991), Foster and Mash (1999), Carr, Austin, Britton, Kellum, and Bailey (1999), and Kemp, Miltenberger, and Lumley (1996) examined social validity and its use in research. Carr, et al (1999) assessed trends of social validity use in the field of applied behavior analysis. This assessment found that only 13% of articles in applied behavior analysis reported social validity results. In addition, since the 1980’s, approximately 12% of research reported treatment outcome and approximately 16% reported treatment acceptability. The authors warn that failure to include social validity measures may lead to the development of procedures and
interventions that do not consider consumer feedback. Thus, whether the researchers or the field approve of the empirically valid results, there may be rejection at the level of the consumer.

Wolf (1978) proposed three levels to address in social validity assessment. These levels are treatment goals, procedures, and effects. In order to collect the most accurate and reliable social validity data possible, it is vital to allow the consumer the widest possible range of responses, make assessments non-contingent, and to allow for anonymity of consumer opinions. It appears clear that, despite Wolf's proposal in 1978, social validity is not a mainstay of current research in applied behavior analysis.

Two social validity measures were administered at the end of this study. One was administered to the teachers (See Appendix C) and the second was administered to the students (See Appendix D). The ratings that were used were six-point Likert scales in which “1” indicated “strongly disagree” and “6” indicated “strongly agree”. Three teachers independently responded to the survey. There were no negative comments about the intervention. One teacher responded neutrally on each of the following questions: “This intervention should prove effective in changing the child’s behavior,” “I would be willing to use this intervention in the classroom setting,” “This intervention would result in positive side effects for the child,” “This intervention would be appropriate for a variety of children,” “This intervention is consistent with those I have used in classroom settings,” and “Overall, this intervention would be beneficial for the child.” Two
teachers’ responses were neutral on the statement, “I would suggest the use of this intervention to other teachers.” All other responses were positive or strongly positive (see Appendix E for teacher responses).

The researcher read each question to each child independently. If the child did not understand the wording, the question was restated in simpler terms. The most common change was using the words “this project” in place of the term “reinforcement of verbalization.” The children each responded very positively to the intervention. The only negative responses were two children in strong disagreement with the comment, “I received more comments from the teacher about my good behavior in the classroom as a result of participating in reinforcement of verbalization,” and one child strongly disagreed with the statement, “I got in trouble less during the reinforcement of verbalization than when I was not participating in reinforcement of verbalization.” Each child stated that they would like to participate in the same “project” again (see Appendix F for student responses).

*Inter-observer Agreement (IOA)*

Inter-observer agreement data were collected and assessed on 50% of the observation sessions. For each participant, IOA was collected on the following percentages of sessions: Ima: 56%, Al Moss: 45%, and Don: 50%. Overall, the inter-observer agreement for all three participants was 97%. Table 1 shows the mean agreement for each participant for each behavior.
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Table 1. Inter-Observer Reliability Table. T.A. = Teacher Attention
CHAPTER 4

DISCUSSION

The results of this study indicate that reinforcement of verbalization (RFV), a correspondence training procedure, was effective at increasing engagement of two students diagnosed with ADHD and one student with behaviors consistent with ADHD, who was being evaluated for ADHD diagnosis. This study expanded on previous research by Edward and Osnes (2002) which showed similar effects. In addition, this research successfully demonstrated the effectiveness of correspondence training techniques with students with ADHD and their potential capacity to exhibit control via rule-governed behavior. Additionally, generalization was systematically promoted through use of a common salient stimulus for two out of three participants. Furthermore, by systematically examining teacher attention, it was clearly shown that the amount of teacher attention did not increase regardless of striking improvements in the students’ behaviors.

Edward and Osnes (2002) were first to use reinforcement of verbalization (RFV) alone as a successful intervention. Previous findings had suggested that correspondence between what the child says he/she will do and the subsequent behavior must be explicitly taught in order for a child’s behavior to be controlled by RFV alone. Therefore, the results of the present study contradict preceding findings and replicate the findings of Edward and Osnes (2002).
Deacon and Konarski (1987) investigated the capability of reinforcement of verbalization (RFV) and correspondence training (CT) to teach six adults with mental retardation to make various manipulations on a microcomputer that resulted in a variety of auditory and visual consequences. This experiment showed RFV to be ineffective prior to CT, but to effectively maintain learned manipulations subsequent to CT.

Guevremont, Osnes, and Stokes (1986) examined RFV and say-do correspondence training in a preschool setting with three young children as a catalyst to improve four behaviors (straightening mats, sitting next to peers in groups, hand raising during group activities, and initiating verbal interaction with peers in play). Their results showed that RFV was unproductive prior to say-do correspondence training, but effectively maintained an acceptable level of performance following successful say-do CT procedures.

Other examples of these same findings include Risley and Hart (1968), Israel and O’Leary (1973), and Baer, Williams, Osnes, and Stokes (1985). In each study, the use of RFV alone was ineffective at changing target behaviors. Each found that only after a successful history of correspondence training was reinforcement of verbalization effective at maintaining behavior change.

Contrary to previous findings, this study replicated the results of Edward and Osnes (2002) and found that without prior correspondence training (CT), reinforcement of verbalization (RFV) alone was able to increase appropriate behavior while decreasing
inappropriate behavior in addition to maintaining these changes. There are several possible causes for the current findings. Consistent with the work of Edward and Osnes (2002), this investigation used similar participants. The school’s population consisted of primarily low-income families with several students at risk. In addition, the classroom climate was lacking in teacher attention contingent on engagement. This deprivation of teacher attention may function as an establishing operation, which increases the potential of attention received during RFV to function as a potent reinforcer. Data from the present study show the low levels of teacher attention to remain low regardless of student behavior. One student received varied levels of teacher attention contingent on both engagement and lack of engagement. Two students received minimal teacher attention, regardless of their behavior, during baseline, which gradually decreased to near zero levels as student behavior improved to near-mastery levels. These data clearly portray a deprivation of teacher attention.

Another possible explanation for the behavior change is that the verbalization that was reinforced and was subsequently followed by improved behavior in the classroom worked together to form a rule. This rule, “I said I would (behavior) and got reinforced, so I need to (behavior)” may function to form rule-governed behavior for the student. The student’s behavior changed in both the regular and generalization settings. The common salient stimulus (the photograph of the Happy Sack) that was placed in the generalization setting may have functioned as a cue to the child to behave in accordance
with the newly formed rule. Thus, the rule then governed the behavior of the child in settings where the child had learned the rule or where the child has been reminded of the rule. Eventually, this rule-governance would guide the child’s behavior in settings in which reinforcement was present for its use, as it continued to strengthen.

Generalization, which was probed but not taught in Edward and Osnes (2002), was systematically promoted in this investigation. No generalization effects were noted in Edward and Osnes (2002); however, when using the same methods, but adding a common salient stimulus, generalization was achieved for two of three participants in the present study.

Additionally, with continuous, systematic monitoring of teacher attention, it was clear that the significant improvement in student engagement did not impact teacher behavior. However, even without increased teacher attention, the behavior of the students increased and maintained with reinforcement of verbalization alone as an intervention.

Finally, the social validity measures revealed that the intervention was useful and enjoyable. The use of reinforcement of verbalization (RFV) without correspondence training (CT) required only 1-2 minutes of teacher time prior to the activity. The added use of a generalization promotion agent such as the photograph that was used in this study helped to maintain behavior improvements across settings and people. In addition, one teacher in this study reported that she will use the intervention in the future. She
reported that she will be able to easily select children that need the intervention at the beginning of the school year and that she believes the intervention will make behavior change immediately and without a lot of effort on her part.

As with any study, there are potential limitations with this investigation. First, because of limited time, behavior change could not be observed for a long period of time. Baer, Williams, Osnes, and Stokes (1985) studied the use of reinforcement of verbalization (RFV) as an intervention for a four-old-year typical girl in preschool. The intervention focused on inviting a peer to play, talking out of turn, and play behavior with four toys. After baseline, RFV was implemented with initial improvement in the target behavior, which decreased after a period of about 12 days. Following RFV, correspondence training (CT) was implemented for a short period of time (about 3 days), which immediately returned behavior to acceptable levels. RFV was then reinstated with several behaviors and was successful at maintaining the target behavior at acceptable levels. With the successful use of common salient stimuli (CSS) to maintain behavior in a different setting, the data would suggest adding a CSS before implementing CT. The data from the present study affirmed the strength of this method and cause belief that this method would effectively re-strengthen RFV effects if they would begin to fade.

A second limitation of the present study was teacher report that there was immediate behavior regression when the observer left the room. Observer presence in the room is easily noticeable to students and may affect the climate of the classroom.
However, with reinforcement of verbalization intervention, the data collection would not be a component of typical classroom intervention when implemented by a teacher in his or her classroom. The teacher would not only be the person implementing the procedures, but would also be the discriminative stimulus for reinforcement being available. This would appear to minimize this as an issue in the applied setting.

There are numerous areas for future study derived from these findings. First, the use of reinforcement of verbalization (RFV) as an intervention for a longer period would enable study of the use of a common salient stimulus in order to strengthen and maintain behavior in all settings without losing RFV control. Secondly, having observers who are behind a two-way mirror or observers who are always present in the natural setting would increase the potency of the intervention by not changing the environment immediately after the RFV procedures are used. The use of RFV in a group setting, rather than individually, may increase the strength of the intervention because of peer attention. Future study should continue to investigate the plethora of possibilities open to using RFV in the applied setting as well as other ways to use a common salient stimulus to promote generalization.

Overall, this investigation has strengthened the findings of Edward and Osnes (2002) with successful replication. Reinforcement of verbalization is an effective intervention without prior correspondence training for children with ADHD. In addition, the use of a generalization promotion strategy can effectively carry behavior change into
other settings with other teachers. Even in an environment deprived of teacher attention, the investigated method can serve as a positive form of teacher attention and yield positive changes in student behavior.
LIST OF REFERENCES


APPENDIX A

PARTIAL INTERVAL RECORDING METHOD

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</tbody>
</table>

**Child B**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
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<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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TA: __/____ = ___%  
A= ______  
D= ______  
IOA = __/____ = ___%  
A= ______  
D= ______  
IOA = __/____ = ___%  

Phase: BL RFV CT Gen.
APPENDIX B

INTEGRITY CHECKLIST FOR REINFORCEMENT OF VERBALIZATION

Date: ___________  Time: ___________ – ___________  Student: ________________

Trainer: ___________________________  Observer: ___________________________

<table>
<thead>
<tr>
<th>Teacher Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BEFORE THE OBSERVATION PERIOD – “What are you going to do today during?”</strong></td>
</tr>
<tr>
<td>1.  The teacher took the student aside or to a discrete location to ask the correspondence question</td>
</tr>
<tr>
<td>2.  The teacher asked the RFV question as it is written.</td>
</tr>
<tr>
<td>3.  The teacher appropriately prompted the student to answer the question, if necessary.</td>
</tr>
<tr>
<td>4.  The student received appropriate consequence if he exhibited verbalization.</td>
</tr>
<tr>
<td>4.  The student received appropriate consequence if he did NOT exhibit verbalization.</td>
</tr>
<tr>
<td>5.  The student was told to return to his seat after answering the question.</td>
</tr>
</tbody>
</table>
APPENDIX C

TEACHERS POST REINFORCEMENT OF VERBALIZATION SURVEY

Intervention Rating Profile

The purpose of this questionnaire is to obtain information that will aid in the selection of classroom interventions. These interventions will be used by teachers of children with behavior problems. Please circle the number that best describes your agreement or disagreement with each statement using the scale below.

1 = strongly disagree  2 = disagree  3 = neutral  4 = agree  5 = strongly agree

1. This would be an acceptable intervention for the child’s problem behavior. 1 2 3 4 5

2. Most teachers would find this intervention appropriate for behavior problems in addition to the one described. 1 2 3 4 5

3. This intervention should prove effective in changing the child’s problem behavior. 1 2 3 4 5

4. I would suggest the use of this intervention to other teachers. 1 2 3 4 5

5. The child’s problem behavior is severe enough to warrant use of this intervention. 1 2 3 4 5

6. Most teachers would find this intervention suitable for the behavior problem described. 1 2 3 4 5

7. I would be willing to use this intervention in the classroom setting. 1 2 3 4 5

8. This intervention would result in positive side effects for the child. 1 2 3 4 5

61
9. This intervention would not result in negative side effects for the child. 1 2 3 4 5

10. This intervention would be appropriate for a variety of children. 1 2 3 4 5

11. The intervention is consistent with those I have used in classroom settings. 1 2 3 4 5

12. This intervention was a fair way to handle the child’s problem described. 1 2 3 4 5

13. This intervention is reasonable for the behavior problem described. 1 2 3 4 5

14. I liked the procedures used in this intervention. 1 2 3 4 5

15. This intervention was a good way to handle this child’s behavior problem. 1 2 3 4 5

16. Overall, this intervention would be beneficial for the child. 1 2 3 4 5
APPENDIX D

STUDENT QUESTIONNAIRE (REINFORCEMENT OF VERBALIZATION)

Name: ___________________________ Date of completion: ________________

INSTRUCTIONS: This questionnaire consists of 9 items. For items 1 through 8, indicate the extent to which you agree or disagree with each statement. Please indicate your response to each item by circling one of the five responses to the right. For item 9, please write down any additional responses you wish to share.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Before I participated in reinforcement of verbalization I felt that my I needed some additional help to improve my behavior in the classroom.</td>
<td>Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree</td>
</tr>
<tr>
<td>2. I feel that reinforcement of verbalization helped me to improve my behavior in the classroom.</td>
<td>Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree</td>
</tr>
<tr>
<td>3. I received more comments from the teacher about my good behavior in the classroom as a result of participating in reinforcement of verbalization.</td>
<td>Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree</td>
</tr>
<tr>
<td>4. I got in trouble less during the reinforcement of verbalization procedure than when I was not participating in reinforcement of verbalization.</td>
<td>Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree</td>
</tr>
<tr>
<td>5. Reinforcement of verbalization helped me to do better in class.</td>
<td>Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree</td>
</tr>
</tbody>
</table>

63
6. Reinforcement of verbalization helped me to do better in other classes.

7. I liked the opportunity to receive rewards for doing better in class.

8. I am glad that I participated.

9. I would like to participate in reinforcement of verbalization again.

10. What did you like most about reinforcement of verbalization?

What did you like least about reinforcement of verbalization?
APPENDIX E

TEACHERS POST REINFORCEMENT OF VERBALIZATION SURVEY RESULTS

Intervention Rating Profile

Teacher responses are indicated as a number below the number choices.

1 = strongly disagree  2 = disagree  3 = neutral  4 = agree  5 = strongly agree

<table>
<thead>
<tr>
<th>Questions</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. This would be an acceptable intervention for the child’s problem behavior.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td></td>
<td>2 1</td>
</tr>
<tr>
<td>2. Most teachers would find this intervention appropriate for behavior problems in addition to the one described.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td></td>
<td>2 1</td>
</tr>
<tr>
<td>3. This intervention should prove effective in changing the child’s problem behavior.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td></td>
<td>1 1 1</td>
</tr>
<tr>
<td>4. I would suggest the use of this intervention to other teachers.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td></td>
<td>2 1</td>
</tr>
<tr>
<td>5. The child’s problem behavior is severe enough to warrant use of this intervention.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td></td>
<td>1 2</td>
</tr>
<tr>
<td>6. Most teachers would find this intervention suitable for the behavior problem described.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td></td>
<td>1 2</td>
</tr>
</tbody>
</table>

65
<p>| | | | | |</p>
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<tbody>
<tr>
<td>7.</td>
<td>I would be willing to use this intervention in the classroom setting.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>This intervention would result in positive side effects for the child.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>This intervention would not result in negative side effects for the child.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td>4</td>
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<tr>
<td>9.</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10.</td>
<td>This intervention would be appropriate for a variety of children.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11.</td>
<td>The intervention is consistent with those I have used in classroom settings.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12.</td>
<td>This intervention was a fair way to handle the child’s problem described.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13.</td>
<td>This intervention is reasonable for the behavior problem described.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14.</td>
<td>I liked the procedures used in this intervention.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15.</td>
<td>This intervention was a good way to handle this child’s behavior problem.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16.</td>
<td>Overall, this intervention would be beneficial for the child.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
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<td>1</td>
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</tbody>
</table>
APPENDIX F

STUDENT QUESTIONNAIRE (REINFORCEMENT OF VERBALIZATION) RESULTS

Name: ___________________________ Date of completion: ________________

INSTRUCTIONS: This questionnaire consists of 9 items. For items 1 through 8, indicate the extent to which you agree or disagree with each statement. Please indicate your response to each item by circling one of the five responses to the right. For item 9, please write down any additional responses you wish to share.

Questions | Responses
--- | ---
1. Before I participated in reinforcement of verbalization I felt that my 1 needed some additional help to improve my behavior in the classroom. | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree

2. I feel that reinforcement of verbalization helped me to improve my behavior in the classroom. | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree

3. I received more comments from the teacher about my good behavior in the classroom as a result of participating in correspondence training. | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree

4. I got in trouble less during the reinforcement of verbalization procedure than when I was not participating in reinforcement of verbalization. | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree

5. Reinforcement of verbalization helped me to do better in class. | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree

67
6. Reinforcement of verbalization helped me to do better in other classes.
7. I liked the opportunity to receive rewards for doing better in class.
8. I am glad that I participated.

9. I would like to participate in reinforcement of verbalization again.
10. What did you like most about reinforcement of verbalization?

Prizes – 3
Talking to the researcher at the beginning - 1

What did you like least about correspondence training?

Nothing – 2
Candy - 1