

THE EFFECTS OF CONTINGENT REWARDS ON THE DECREASE OF IMPROPER VERBALIZATIONS OF MIDDLE SCHOOL STUDENTS WITH LEARNING DISABILITIES*

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ABSTRACT

The purpose of this study was to implement a contingent rewards system to reduce the number of improper verbalizations made by two special education high school students. The effectiveness of the intervention was examined in an ABAB design. The participants were two; eighth grade males with learning disabilities. The study was conducted in a middle school resource room in a rural school district. The behavior measured was the number of inappropriate verbalizations. An inappropriate verbalization was defined as any verbalization during classwork that was out of turn, without being called upon, or disruptive to the rest of the class or teachers. Also, yelling, shouting, swearing, or repeated use of a teacher or teacher's aide's name were marked as improper verbalizations. Our results indicated a reduction in the number of improper verbalizations through the use of the contingent rewards system. The number of improper verbalizations increased during a brief return to baseline. The benefits of employing this procedure to reduce the number of inappropriate verbalizations were discussed.

Keywords: inappropriate verbalizations, efficacy, ABAB reversal design, learning disabilities, rural middle school, resource classroom

INTRODUCTION

The use of positive consequences is the most widely applied principle behavior analysis (Cooper, Heron, & Heward, 2007; Northup, Vollmer, & Serrett, 1993). Often times, problem behaviors, including those that are disruptive within the classroom occur in order for students to gain social positive reinforcement (Alberto & Troutman, 2008; Cooper, Heron, & Heward, 2007; Thomas, Becker, & Armstrong, 1968). The use of positive consequences remains important in both the increase of desired behaviors or decrease of problem behaviors has been suggested as a non-aversive alternative to response cost or time out to manage classroom behaviors (Alberto & Troutman, 2008; Copper et al., 2007; Homer, Dunlap, Koegel, Carr, Sailor, Anderson, et al., 1990; Martens, Witt, Elliott, & Darveaux, 1985; Witt & Robins, 1985). In addition, educators view and rate the use of positive classroom procedures highly (Dietz & Repp, 1973; Witt & Martens, 1983, 1984).

A learning disability is a neurological disorder; it is a learning disability that results from a difference in the way a brain develops (Swanson, Harris, & Graham, 2006). Many times students with learning disabilities have issues with social behaviors (Heward, 2009). These students may act out as a way of

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hiding their academic difficulties (Stone, 1990). Lerner and Johns have suggested that students with learning disabilities can benefit from the use of consequences to manage such behavior.

Several studies have been carried out documenting the efficacy of differential reinforcement for reducing behaviors that interfere with the ongoing classroom instruction. One procedure that many educators view as a positive and effective procedure to implement in their schools for problem behavior has been differential reinforcement of alternative (DRA) and/or other behaviors (DRO) (Champagne et al., 1990; Dietz & Repp, 1973, 1974). For example, Montgomery, McLaughlin, and Griffin (2008) worked with a class of students with severe behavior disorders to reduce the number of talk outs made by the entire class. They employed. They implemented a group contingency where if the unidentified selected responded with two or less talk outs in a 55-minute class period, the whole class could earn an edible reward at the end of the class period. The procedure was effective in reducing the number of inappropriate verbalizations for an entire self-contained classroom for students with behavioral issues. Both students and the teaching staff also viewed this procedure positively. Recently, Thompson, McLaughlin, and Derby (2011) employed a differential reinforcement procedure within an ongoing token system with a single elementary student with autism. These procedures reduced the frequency of her inappropriate verbalizations across three different classroom configurations (calendar, group work, and specialty classes) using differential reinforcement of lower rates of talking out or inappropriate verbalizations. The classroom staff was pleased with the outcomes and has continued to implement and employ these procedures in the classroom.

The purpose of this study was to evaluate the effects of contingent rewards and decrease improper verbalizations in a middle school. An additional purpose was to implement and evaluate such a system with two middle school students with learning disabilities.

METHOD

Participants and Setting

The participants in this study were two, eighth grade boys who attended a rural, public middle school in the Pacific Northwest. Both participants met the criteria for specific learning disabilities and have Individualized Education Plans (IEP). Both participants live in a low income neighborhood with both parents present within the home. One participant, age 13, was diagnosed with a learning disability, as well as cataracts, and qualified for an IEP in the areas of reading, writing, and math. The other participant, age 14, was diagnosed with a learning disability and qualified for an IEP in the areas of reading, writing, math as well as social. Both students have issues with behavior, especially in regards to inappropriate verbalizations.

The study took place within the resource room of the middle school throughout the afternoon. The class size was 17 throughout the first two periods with the participants each day. The third period with the participants had a class size of 19. The room was large with 12 computer stations located around the outside of the classroom. A master teacher who had two instructional assistants used the room during the course of the day. Both desks and tables were set within the classroom for the students to work at. The participants, when present at school, would enter the classroom between 11:55 a. m. and 12:00 p. m. and stay until 2:30 p.m. Monday through Friday. The study took place throughout these times. The reward took place within one of the two gyms within the middle school.

MATERIALS

The researcher used a pencil and 5x7 note cards divided down the middle in order to record data. A school district basketball and outside basketball court were also employed.

Dependent Variable

The dependent measure was the number of improper verbalizations. An improper verbalization was defined as any verbalization during classwork that was out of turn, without being called upon, or disruptive in nature to the rest of the class or teachers. Along with this, any yelling, shouting, swearing, or repeated use of a teacher or teacher's aide's name were considered as improper

verbalizations. The participants were aware of the definitions of improper verbalizations throughout the course of the study.

Data Collection and Inter-observer Agreement

The researcher created a data sheet using a 5x7 note card with a line through the center of it. Each side of the data card was designated to one of the participants, and was marked with a tally each time an improper verbalization occurred. Each session consisted of the last three class periods of the day, each lasting 50 minutes. The first two class periods with the participants consisted of reading instruction, while the third was math instruction. The sessions were marked by day of occurrence.

Inter-observer agreement was taken on 50% of the trials. During these sessions, the teacher's aide would take data independently, marking improper verbalizations on her own note card at her desk. Agreement was scored if the same number of verbalizations were marked. Any differences in the number of verbalizations within a session were considered disagreements. The number of agreements divided by agreements plus disagreements and multiplied by 100 to get the agreement percentage calculated agreement. The mean agreement score obtained was 92% with a range of 62 to 100%.

Experimental Design and Conditions

A combination ABAB reversal and multiple baseline design (Barlow, Nock, & Hersen, 2008; Kazdin, 2010) was implemented to evaluate the effect of contingent rewards to decrease of improper verbalizations. A description of each phase follows.

Baseline (BL). Baseline data were gathered by the first author. Our participant's were not aware that such data were being gathered. When an improper verbalization was recorded with a hatch mark. No specific consequences for these behaviors were provided. This phase was in effect for 5 to 7 sessions. A return to baseline was also carried out for a single day. The first author informed the participants that he was unable to play basketball, or spend free time with the participants for that day.

Contingent rewards (SR+). The participants were informed that data collection had occurred. They were also informed of the definitions for improper verbalizations. The participants were also told that there were a number of improper verbalizations that they should engage. The reward of 20 minutes of playing basketball with the first author at the end of the day

If they emitted a lower number than designated number of verbalizations, and each had completed the assigned work for the day. During the contingent rewards condition, the participants were given contingent praise and attention if a proper verbalization occurred, or the participant correctly raised his hand in order to answer a question. Negative attention by the first author was given when improper verbalizations occurred. This attention included the following: "raise your hand," "stay on task," and "you know what you are supposed to be doing." This condition was in effect twice for a total of 17 or 18 sessions.

RESULTS

Participant 1

The number of inappropriate verbalizations for Participant 1 can be seen in Figure 1. During baseline a mean of 28 verbalizations were scored (range 22 to 31 improper verbalizations). During the first implementation of contingent rewards for Participant 1, a mean of 9.1 was observed (range: 2 to 23). When a return to baseline occurred a 16 inappropriate verbalizations were tallied. A return to contingent rewards (SR+), resulted in a decrease of improper verbalizations ($M = 3.7$; range; 3 to 4 improper verbalizations).

Participant 2

The number of inappropriate verbalizations for Participant 2 can be seen in Figure 2. During baseline Participant 2 had a mean of 21.4 verbalizations (range: 11 to 31 improper verbalizations). During the first implementation of contingent rewards, a decrease in improper verbalizations took place ($M = 4.9$ was observed (range 1 to 18). When a return to baseline occurred, an increase of 11 inappropriate

verbalizations was found. The second implementation of contingent rewards lead to a decrease in improper verbalizations ($M = 2.0$; range: 1 to 3 improper verbalizations).

DISCUSSION

The outcomes indicated that a functional relationship between the use of differential reinforcement for reducing the frequency of improper verbalizations was found. This shows that our differential reinforcement program was very effective. Utilization of the contingent rewards system marked improvement from before intervention of days with improper verbalizations as high as 31 to a low of 1. The first author also noted the increase in the students practicing of acceptable behaviors within the classroom setting. They also reduced their behavior seeking approval from the adults present in the classroom.

The participants were very attentive and motivated to decrease their improper verbalizations when the first author was present. The first author and the two participants had a very strong relationship built prior to formal data collection. They consistently attempted to gain his attention. The participants both were excited and pleased when they were informed of their inclusion in the study. At times, the participant's behavior often times depended on how their school day had gone up to that point in time and also who was present in their classroom.

Employing contingent rewards within a middle school resource room was very practical within this particular setting. The reward used, 15 to 20 minutes of free time that included teacher attention through the action of playing basketball, was an available option due to the presence of other adults within the classroom. The use of a reward must be unique to the participant, in this case, the participants both enjoyed time with the first author as their preferred activity. Rewards can be as simple as a piece of candy, thus future use of contingent rewards is very practical within a middle school resource room setting.

The present outcomes replicate previous (Dietz & Repp, 1973, 1974) and more recent research (Champagne et al., 1990; Montgomery et al., 2008; Thompson et al., 2011). Also our participants and their teachers enjoyed the use of positive procedures. This also replicates previous work on teacher acceptability of positive classroom interventions (Martens et al., 1985; Witt & Martens, 1983, 1984).

In order for the participants to maintain and generalize the low levels of improper verbalization, they were continuously given a reward of free time when their levels of improper verbalizations were low and their academic work had been completed. In addition, Participant 1 had a contingent rewards note placed within his Individualized Education Program under the behavior plan section at the conclusion of this research.

There were limitations within this study. The presence of statewide testing within the middle of intervention completely altered the schedule of the school, thus creating a more chaotic school day for our participants. Also, the presence or absence of certain students within the classroom often times changed the overall demeanor of both participants. For example, the lowest day of improper verbalizations in baseline occurred when his closest friend within the class, was not at school. Both participants received occupational therapy, and were removed from the class making data collection difficult. Along with this, both participants were members of athletics and clubs within the school, and field trips or early dismissals were common. The excitement of these activities often times led to an increase of the level of improper verbalizations. The present research adds to the body of evidence that suggests that contingent rewards are an effective way to decrease inappropriate behaviors with middle school special education students.

Contingent Rewards

Figure 1:

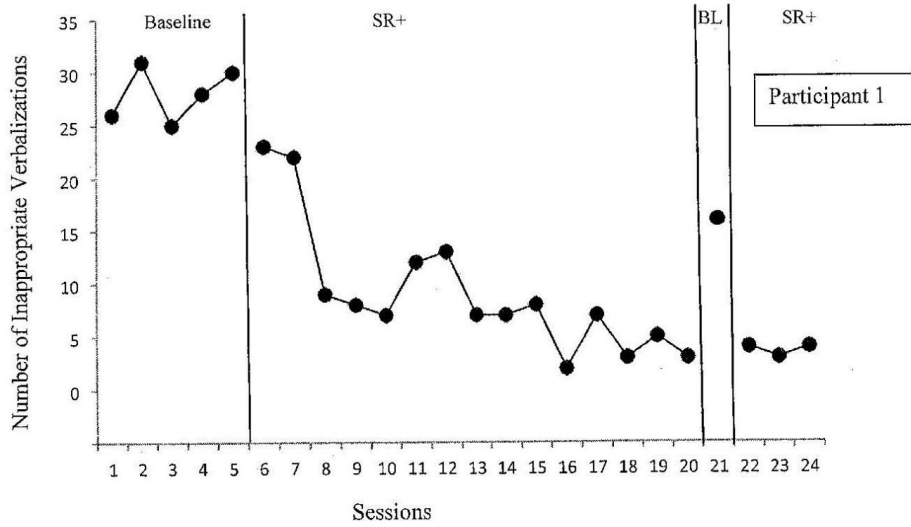


Figure 1: The number of inappropriate verbalizations of participant 1 is shown

Figure 2:

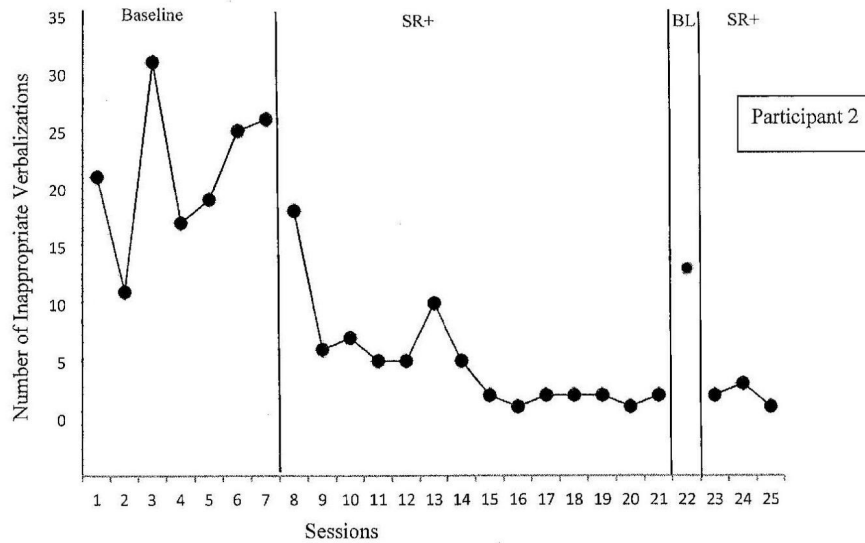


Figure 2: The number of inappropriate verbalizations of participant 2 is shown

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