RESEARCH INTO PRACTICE

Reducing Disruptive Behaviors in Students with Serious Emotional Disturbance

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Abstract. A multicomponent intervention that included a precision request program, mystery motivators, token economy with response cost, and antecedent strategies (i.e., public posting of classroom rules and teacher movement) was employed to reduce disruptive classroom behavior in 3 school-aged students with social and emotional disorders. The study employed a multiple baseline design across individuals. The results suggested that the intervention was successful in reducing levels of disruptive behaviors for all students. Baseline data indicated that, on average, students were disruptive in 37% of observed intervals. This diminished to an average of 10% during the intervention phase. In the follow-up phase, disruptive intervals remained at an average of 10%.

Students with social and emotional disorders characteristically exhibit noncompliance to teacher requests along with numerous additional disruptive behaviors (DeMartini-Scully, Bray, & Kehle, 2000). Their lack of compliance to teacher requests often is the impetus for their disruptive classroom behaviors (Forehand, Gardner, & Roberts, 1978; Koch, 1982). Research (e.g., Parrish, Cataldo, Kolko, Neef, & Egel, 1986) has demonstrated that compliance and disruptive behaviors covary inversely. Interventions that succeed in improving compliance with adult directives usually lead to a reduction in disruptive behaviors. Thus, the design of an economical intervention that targets compliance with rules should simultaneously reduce a wide range of disruptive behaviors (Nelson, 1988; Parrish et al., 1986).

Teachers issue countless commands for compliance on a daily basis. Unfortunately, many mistakes are made both in the delivery of commands and in the provision of consequences. Teachers often inadvertently reinforce noncompliance, repeatedly reissue commands, and provide low levels of reinforcement for compliance (Strain, Lambert, Kerr, Stagg, & Lenkner, 1983). Training teachers and parents to issue commands and deliver consequences effectively has been shown to increase compliance rates. For example, instructing teachers to use “do” and “don’t” commands increased compliance rates in chil-
An Intervention to Reduce Disruptive Behavior

dren with severe behavior disorders (Montgomery & Ayllon, 1993; Neef, Shafer, Egel, Cataldo, & Parrish, 1983). In addition, training parents to give requests followed by a 5-second wait period increased compliance rates in their children (Roberts, McMahon, Forehand, & Humphreys, 1978).

Forehand and McMahon (1981) initially developed a command format that was modified (Neville & Jenson, 1984; Rhode, Jenson, & Reavis, 1993) to assist teachers in delivering effective commands and consequences. The modified program was termed “precision requests.” As described in the DeMartini-Scully et al. (2000) investigation, the program teaches the student to respond to teacher requests for compliance by employing (a) do and don’t commands, (b) positive reinforcement, and (c) reductive techniques. The precision request program involves an initial request for compliance. This first request is introduced with the word “please,” or a synonym. If the child complies, she or he is reinforced. If the child does not comply, a second request is given, usually introduced with the phrase “you need to,” or a similar instruction. The second request is given after approximately a 5-second interval of waiting, which was determined by Forehand et al. (1978) as the prerequisite amount of time necessary to promote compliance. If students comply, they are reinforced. If there is no compliance, a reductive technique is delivered, usually a form of time-out.

As outlined in DeMartini-Scully et al. (2000), the precision request program's effectiveness appears to be strengthened by delivering the request for compliance in a statement form with a firm but quiet tone of voice (O'Leary, Kaufman, Kass, & Drabman, 1970). Also, requests for compliance should be specific and delivered within approximately 3 feet from the student (Van Houten, Mackenzie-Keating, Sameoto, & Colavecchia, 1982) and only after establishing eye contact (Hamlet, Axelrod, & Kuerschner, 1984).

Teacher movement and conspicuous posting of four or five positively stated, behaviorally based rules also tend to promote compliance rates (Osenton & Chang, 1999; Rhode et al., 1993; Rosenberg, 1986). Teacher movement within the classroom increases the likelihood of detecting the onset of eventual problem behaviors. It also allows for the increased opportunity to reinforce compliance and other appropriate behaviors (Minner & Prater, 1989; Rhode et al., 1993).

In addition, requests for compliance can be promoted by the use of mystery motivators (Rhode et al., 1993). A mystery motivator is an unknown positive reinforcer that is applied by using an envelope with the target child’s name and a question mark prominently written on it. Within the mystery motivator envelope is an item or picture of an item that has been determined to be highly valued by the child. Similar to a wrapped birthday gift, keeping the item secret by enclosing it in the envelope functions to increase anticipation for the reward. Mystery motivators have been shown to be effective in modifying inappropriate behavior (Kehle, Madaus, Baratta, & Bray, 1998) and are relatively resistant to decay (Moore, Waguespack, Wickstrom, Witt, & Gaydos, 1994). Combining mystery motivators with a token economy and response cost program has been shown to be quite effective in reducing noncompliant and disruptive behaviors (Rhode et al., 1993).

The rationale for using this multicomponent intervention was based on the assumption that although precision requests, mystery motivators, classroom rules, teacher movement, token economy, and response cost programs have all been effective when employed independently, when combined they may be even more effective in promoting student compliance. For example, a token economy combined with response cost is more effective than a token economy used alone (McLaughlin & Scott, 1976; McNamara, 1971). Similarly, a token economy combined with the public posting of classroom rules results in a markedly greater reduction of disruptive behavior than the token economy by itself (Rosenberg, 1986).

A recent investigation (DeMartini-Scully et al., 2000) indicated that a multicomponent intervention that included the above six components was successful in reducing disruptive behavior of two female students in general education. The purpose of this article is to demonstrate the potential effectiveness of a multicomponent intervention with students exhibit-
ing serious emotional disturbance who have been placed in a specialized learning environment.

Method

Participants and Setting

Three African American students, 2 males (ages 8 and 10) and 1 female (age 9), who met the New York State Board of Education Rules and Regulations for serious emotional disturbance (SED) and the American Psychiatric Association’s *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.) (DSM-IV; APA, 1994) diagnosis of oppositional defiant disorder (ODD), participated in the present investigation. The 3 students were also diagnosed with attention-deficit hyperactivity disorder combined type (ADHD) and were prescribed Ritalin. The students received special education services in a self-contained classroom comprising 8 students with serious emotional disturbance. The classroom was located in an alternative school designed for children with serious emotional disturbance. Instruction was provided by a special education teacher and one paraprofessional. The primary method of dealing with the students’ disruptive behaviors involved the use of time-out. In addition, within the same classroom, 2 African American students, 1 male and 1 female (both age 10), served as controls. The male control student was diagnosed with ODD, and the female control student with both ADHD and ODD. She also was prescribed Ritalin. The target and control students were identified by the teacher as being the most disruptive and noncompliant in the class.

Design

This study employed a multiple baseline design across individuals. The design included baseline, treatment, and follow-up phases over the course of approximately 2 1/2 months.

Dependent Variable

For the purpose of this study, disruptive behavior was defined as the students’ (a) failure to respond to each instance of the teacher’s or aide’s requests for compliance after 5 seconds; (b) talking out or making noise as defined by any verbal statements directed at classmates or teachers without teacher or aide permission; (c) being out of seat as defined by the student’s buttocks not having physical contact with the chair; (d) playing with objects as defined by the manipulation of non-work-related materials or objects; (e) verbal aggression as defined by swearing and name-calling; (f) physical aggression as defined by kicking, punching, and slapping; and/or (g) staring or orienting in a direction other than the teacher or work materials (O’Leary, Romansczyk, Kass, Dietz, & Santogrossi, 1979). These inappropriate behaviors were agreed upon during the Problem Identification Interview (Kratochwill & Bergan, 1990) conducted with the teacher for each student. The individual behaviors were not coded, but were collapsed into one general category of disruptive behavior (Kehle, Clark, Jenson, & Wampold, 1986).

Outcome Measures

Direct observations. Twenty-minute observation sessions using 10-second partial-intervals occurred in each phase. The occurrence of any one or more of the disruptive behaviors was recorded. All observation periods took place during academic instruction. In addition, data were collected on 1 male and 1 female classmate who served as controls.

Child Behavior Checklist—Teacher Report Form (TRF; Achenbach, 1991). The participants’ teachers were asked to complete the Teacher Report Form during baseline and follow-up to investigate whether or not any observed changes in participants’ behaviors were a function of the phase in the study.

Interobserver Agreement

Two clinical psychology doctoral students were trained in the method of data collection. Approximately 30% of the observation sessions, distributed equally across students and experimental phases, were coded by both observers (one of whom was blind to the phases). In addition, they reached at least .80 agreement before initiating baseline observations. Interobserver agreement was based on percentage of agreement (i.e., the number of
agreements was divided by the number of agreements plus the number of disagreements and multiplied by 100). The observers read the definition of the target behavior prior to each observation period to control for observer drift and bias. Interobserver agreement ranged from .84 to .96, with an average of .92 across all students and phases of the investigation.

**Treatment Integrity**

To ensure that the intervention was consistently implemented across the students, all components of the treatment were evaluated using a treatment protocol (see Appendix). After each session, the experimenter completed a protocol checklist that ensured all aspects of the study were implemented with close to 100% accuracy.

**Consumer Satisfaction**

A brief self-report index, modified from Bray and Kehle (1996), was used to determine the students' satisfaction with the intervention. The scale determined how much the students liked the classroom rules, reinforcers, precision requests, and being observed by the experimenters. The scale consisted of four items rated on a 5-point Likert-type scale with 1 = Hated and 5 = Liked a lot.

**Teacher Acceptability**

The teachers' satisfaction with the intervention was assessed using a scale based on Witt and Martens's (1983) recommendations. The teachers rated, on a Likert-type scale (1 = strongly disagree to 5 = strongly agree), seven statements that described each treatment component. The index comprised the following statements: (a) the intervention was appropriate for use in a special education classroom, (b) this intervention did not pose unnecessary risks to the students, (c) the intervention did not require much time to learn and implement, (d) this intervention could be implemented in the future without any assistance, (e) this intervention would likely be used again, (f) this intervention would be recommended to colleagues, and (g) this intervention did not pose any negative side effects to the students.

**Procedure**

The study involved three phases: baseline, intervention, and follow-up.

**Baseline.** The target and control students received no component of the experimental treatment at baseline. In addition, the behavioral program (i.e., time-out) that was instituted by the classroom teacher prior to the study was discontinued. However, all 3 target students and the female control remained on their previously prescribed doses of Ritalin throughout the study. The Problem Identification and Problem Analysis Interviews were conducted before baseline was begun. Baseline data were collected for 2, 3 1/2, and 5 weeks for Students 1, 2, and 3 respectively. In addition, TRFs were administered to the teacher. All phase changes were based on the experimenters' judgment of the stability of the data.

**Intervention.** The Problem Analysis Interview (Kratochwill & Bergan, 1990) involved the description and procedure for implementing the precision request program (Rhode et al., 1993) in conjunction with public rule posting, teacher movement, mystery motivators, and token economy with response cost. During the treatment phase, all target students were exposed to the intervention. The intervention phase, which included all treatment components, was implemented for 2 weeks for all students with the exception of the 2 control students. Because classroom rules were posted only on the target students' desks, the only aspect of the treatment that the control students received was teacher movement. However, they did have the opportunity to learn vicariously by observing the target students. Nonetheless, the control students' data do not reveal any treatment effect.

The intervention was implemented in the following sequence:

1. Class rules were posted in behavioral terms. They included "Sit in your seat unless you have permission to leave," "Do whatever Mrs. Green [the teacher] or Mrs. Doyle [the aide] asks immediately [compliance rule]," "Look at the teacher when she is talking and work when you are supposed to," "Raise your
hand, wait for permission to speak,” and “Do not make noises.”

2. The teacher was instructed to move around the room frequently.

3. With regard to the precision request component, the teacher was taught how to make the first request in statement form using the word “please”; to use a quiet, unemotional tone of voice; to stand approximately 3 feet from the student; to maintain eye contact; and, if needed, to wait 5 seconds before initiating a second request using the phrase “you need to.”

4. Finally, the teacher was instructed in the correct use of the program’s reinforcement (token economy and mystery motivator) and reductive (response cost) components.

5. The program was then introduced to the students with emphasis on the point that they could earn stickers by following the publicly posted classroom rules that included a compliance rule. Stickers were awarded for observance of the classroom rules as a function of time. If the student’s behavior was rule-governed for approximately 30 minutes, one sticker was awarded and publicly posted next to the student’s name.

Mystery motivators were exchanged for a specific number of stickers. Stickers were earned at a rate of one for each of 30 minutes of classroom time that the student was compliant. The student was given the mystery motivator envelope as soon as he or she earned enough stickers. The card inside the envelope was then redeemed for the prize at the end of the school day. A response cost was employed in which one sticker was taken from the student if he or she failed to comply after the second request.

In summary, the intervention phase operated in the following manner: First, the teacher made the initial verbal request using the word “please” (e.g., “Scott, please take out your book”). Second, the teacher waited a minimum of 5 seconds for compliance. Third, if a compliant behavior was emitted by the student, verbal reinforcement was delivered. Verbal reinforcement for compliance to a specific teacher request was used rather than awarding an additional sticker. This was done to avoid the possibility that students would intentionally behave inappropriately to increase the frequency of teacher requests for compliance, and thereby undeservedly and quickly earn the requisite number of stickers and mystery motivators. Instead, the student earned a sticker only when he or she had followed all of the classroom rules (including the compliance rule) for 30 minutes. Fourth, if a noncompliant response to a command was emitted by the student, the teacher waited a minimum of 5 seconds and delivered a second request using the word “need” (e.g., “Scott, you need to take out your book”). The same tone of voice, distance, and eye contact were used. Finally, after the teacher waited the additional 5 seconds following the second request, the student was either given verbal praise for compliance or one sticker was deducted for noncompliance.

There were nine possible 30-minute time periods in which the student could earn stickers each day. At the beginning of the intervention phase, the student was told that he or she needed to earn eight stickers in order to redeem his or her first mystery motivator. This number was chosen so that the child would have an opportunity to earn his or her first mystery motivator relatively easily and become engaged in the intervention. The students were informed that it would become increasingly difficult to earn motivators as time progressed. The students had to accumulate 10 stickers to earn their second mystery motivator and 12 to earn the remaining mystery motivators. This fading technique was used with the hope of training the children to require less frequent reinforcement for appropriate behavior.

Follow-up. During the follow-up phase, no aspect of the multicomponent treatment was employed. Specifically, the teacher was instructed not to use precision requests, teacher movement, or mystery motivators in conjunction with the token economy or response cost during the follow-up phase. In addition, the posted classroom rules were removed from the classroom. However, a daily check to insure that these components of the intervention were absent was not conducted. Direct observational data were collected for 2 weeks for all students. In addition, TRFs were again administered to the teacher.
Results

Direct Observations

Although no particular stability criterion was imposed, the baseline data across students were remarkably stable. Student 1's percentage of disruptive intervals during baseline ranged from 32% to 43%, with an average of 39%. This decreased during the intervention phase with a range of 8% to 11% and an average of 9%, and was maintained during follow-up with a range of 6% to 12% and an average of 9%.

Student 2's percentage of disruptive intervals during baseline ranged from 30% to 38%, with an average of 36%. This decreased during the intervention phase with a range of 8% to 12% and an average of 9%, and was maintained during follow-up with a range of 8% to 13% and an average of 12%.

Student 3's percentage of disruptive intervals during baseline ranged from 31% to 42%, with an average of 36%. This decreased during the intervention phase with a range of 4% to 41% and an average of 12%, and was maintained during follow-up with a range of 8% to 14% with an average of 11%. The two control students' percentage of disruptive intervals remained consistent with an average of 36% for the male and 43% for the female across all phases of the study.

Inspection of Figure 1 indicates that, with the exception of Student 3 where there was only one overlapping data point, there was no overlap between the baseline and intervention phases. Further, there were no overlapping data points between baseline and follow-up for all 3 students. The treatment effect was clearly evident in contrast to the relative stability of the control students' data. Their level of classroom disruption remained constant throughout the three phases of the study.

Child Behavior Checklist—Teacher Report Form (TRF; Achenbach, 1991)

Based on teacher reports at baseline using the TRF, Student 1 was identified as being in the clinical range on the factors of Social Problems (T-score of 74) and Aggressive Behavior (T-score of 72). More specifically, Student 1 was seen as a child who was lonely and defiant, cried, disturbed others, talked out, disrupted, and was explosive and demanding.

At baseline, Student 2 was perceived as being in the borderline range for the factor of Aggressive Behavior (T-score of 69). Specifically, Student 2 was characterized as a student who was defiant, disturbed others, talked out, disrupted, and was explosive and demanding.

At baseline, Student 3 was perceived as being in the clinical range for the factors of Aggressive Behavior (T-score of 80) and Delinquent Behavior (T-score of 75). Specifically, Student 3 was stated to be an individual who was tardy and defiant, disturbed others, talked out, disrupted, and was explosive and demanding.

At follow-up, Students 1, 2, and 3 were perceived as within the normal range on all factors as defined by T-scores of 65 or less on all factors (Achenbach, 1991).

Consumer Satisfaction and Teacher Acceptability

Data derived from the consumer satisfaction index revealed that student satisfaction with the intervention was well above average with a mean of 4.75 on the 5-point Likert-type scale. On the basis of a 5-point scale, the teacher's 4.7 mean rating was indicative of strong satisfaction with the intervention.

Discussion

The results of this study suggest that a multicomponent intervention incorporating precision requests, mystery motivators, token economy and response cost, and antecedent strategies may be useful as a classroom-based intervention for reducing disruptive behaviors in students with emotional and behavioral disorders. The treatment employed in the present study was teacher-friendly in that it was reported to be easy to implement and produced an immediate and substantial behavior change. This is especially significant given the research finding that most teachers report that they feel inadequately trained to address students' disruptive behaviors (Kauffman, Wong, Lloyd, Hung, & Pullen, 1991). Further, the results suggest that the multicomponent intervention
Figure 1. Percentage of intervals revealing disruptive behaviors for all students across all phases of the study.
may allow children with SED to experience a less restrictive educational setting because the students’ disruptive and noncompliant behaviors were reduced to a level that would be acceptable within general education class settings (DeMartini-Scully et al., 2000).

Although the study was conducted in a self-contained classroom, which was one of four such classrooms that comprised an alternative school placement located on hospital grounds, it was similar to school-based self-contained classrooms for students with SED. Thus, the procedures should be applicable within a more traditional school setting.

A clear implication for practice is that the entire procedure is not only in concert with least restrictive practice, it is economical with regard to the teacher’s time investment, and requires no expensive or specialized technology. In addition, once students are placed in inclusionary settings, this intervention program may be effective in further reducing disruptive behaviors and maintaining their participation in general education. On the basis of anecdotal teacher feedback, the implementation and ongoing maintenance of the procedure is reinforcing to both the teacher and students, and consequently increases the probability that the procedure will endure and become a permanent aspect of the teacher’s classroom management techniques.

**Contributions**

The results suggest the feasibility and potential effectiveness of using multicomponent, teacher-friendly, classroom-based interventions for children with SED. Although a component analysis was not conducted, the results may be interpreted as supporting the precision request program and mystery motivators. These two strategies previously had little or no research support for their use. For example, the support for the precision request program was limited to the work done by Forehand and his colleagues (e.g., Forehand et al., 1978; Forehand & McMahon, 1981; Montgomery & Ayllon, 1993; Peed, Roberts, & Forehand, 1977), and, more recently, by DeMartini-Scully et al. (2000). With regard to the use of the mystery motivator, to date only four studies have investigated its effectiveness (DeMartini-Scully et al., in press; Kehle et al., 1998; Moore et al., 1994; Robinson & Sheridan, 2000).

**Limitations**

A threat to the external validity of the study is the use of a single-subject design, in that the results cannot be generalized to other individuals. However, this is a replication of a previous investigation (DeMartini-Scully et al., 2000), and therefore strengthens the external validity of the results (Cohen, 1994). Additional replications, with various age groups, would lend even further support to the use of this multicomponent intervention. Another limitation was that the follow-up phase was conducted for only 2 weeks. Further, a daily check to insure that the treatment components were absent during follow-up was not conducted.

The extent to which these results generalized across settings was not investigated and therefore is an additional limitation. Also, because the treatment was multicomponent, it is unclear which component or combinations thereof led to the behavior change. Finally, because the control students’ data remained constant it appears that the only component of the treatment that they received, teacher movement, did not lead to a change in their behavior. Nor does it appear that modeling of appropriate behavior occurred. Perhaps teacher movement must be combined with a consequence to be effective.

Not investigated but nevertheless apparent was the effortless and seamless manner the intervention components melded together. The components were complementary of each other, and appeared to be a natural aspect of competent teaching.

**References**


Appendix

Treatment Integrity Protocol

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Objectives (please check if completed):

1. Rules are posted.  
2. Teacher moves around room.
3. Teacher uses precision commands:
   a) Statement form.
   b) Firm but quiet tone of voice.
   c) Stands approximately 3 feet from the student.
   d) Has eye contact with the student.
   e) Issues first request using the prompt “please.”
   f) Waits five seconds for student compliance, if student complies, verbally reinforces the student.
g) Issues the second request with the prompt, “you need to...” if the student does not comply within the five second wait period.

h) Verbally reinforces the student if student complies.

i) Employs the reductive technique of response cost if student does not comply.

4. Token economy: Student receives stickers if they complied with the classroom rules as a function of time.

5. Response cost: Student loses stickers if he or she did not comply to classroom rules as a function of time or did not comply to the second request for teacher compliance.

6. Mystery motivator: Student receives a reinforcer after a predetermined number of tokens are accumulated.
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