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Precision Request for Noncompliance in Students with Emotional/Behavioral Disorders: Examination of the Interventionist

Collette Merrill
Brigham Young University

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Collette Merrill

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Christian V. Sabey, Chair
Paul Caldarella
Cade T. Charlton

Department of Counseling Psychology and Special Education

Brigham Young University

ABSTRACT

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Collette Merrill
Department of Counseling Psychology and Special Education, BYU
Master of Science

Noncompliance in students with Emotional/Behavioral Disorders (EBD) can contribute to difficulty with peer and teacher relationships and may result in reduced time for academic instruction. The Precision Request, an intervention which uses alpha commands, verbal praise, and reductive consequences, has been shown to increase compliance in students with EBD, but no studies have accounted for which component is responsible for the change. This study used an ABCDAX add-in component analysis to determine which component of the Precision Request produced the most effect on behavioral compliance in five sixth-grade elementary students with EBD. Data were collected on percent of student compliance, latency to compliance, and teacher and paraprofessional use of verbal praise and reductive consequences. Percent of correct implementation of the Precision Request was also recorded. All data were subsequently inspected via visual analysis. The interventionists which participated in the study were unable to implement the Precision Request with fidelity and no effect was found on student compliance, which prompted researchers to examine characteristics of the interventionists as a possible explanation for failure to implement with fidelity. A comparison of interventionists suggests that the Precision Request may be too difficult to implement for an individual who lacks behavioral training, who does not use foundational classroom procedures such as positive reinforcement and verbal praise, and/or whose philosophical viewpoints are not conducive to behavior analysis. Future research should examine contextual fit as regards behavioral interventions and interventionists, as well as which behavioral principles need to be mastered by an interventionist before the Precision Request can be implemented with fidelity.

Keywords: noncompliance, precision request, interventionist, implementation fidelity, emotional/behavioral disorders

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DESCRIPTION OF THESIS STRUCTURE

This thesis is presented as a journal article and conforms to length and style requirements of most educational journals. Two references lists are included in this document, one which contains references included in the journal-ready portion, and one which contains references used in the extended review of the literature in Appendix A. This document begins with a brief introduction of the Precision Request as an intervention for students with Emotional/Behavioral Disorders (EBD) who display noncompliance in school settings. Methods used in this study are then presented. This is followed by the results found, with a subsequent discussion. An in-depth examination of the problem of noncompliance in students with EBD and research surrounding the Precision Request and its components can be found in Appendix A. Appendix B contains consent forms. Appendix C lists data collection coding instructions. Training materials and implementation tools are included in Appendices D and E, respectively. Appendix F consists of a social validity questionnaire.

Introduction

Noncompliance is a pervasive and problematic concern in many classrooms and is linked with increased aggression, externalizing behaviors, and referral for psychiatric problems (Hämäläinen & Pulkkinen, 1996; Kalb & Loeber, 2003; Keenan & Shaw, 1994). Prevalence of noncompliant student behavior can also contribute to reduced time available for academic instruction (Belfiore, Basile, & Lee, 2008; Greenwood, 1991). Kalb and Loeber (2003) defined noncompliance as "those instances when a child either actively or passively, but purposefully, does not perform a behavior that has been requested by a parent or other authority figure" (p. 641).

Noncompliance is a particularly widespread and extensive problem in classrooms that serve students with Emotional or Behavioral Disorders (EBD). Landrum, Tankersley, and Kauffman (2003) asserted that noncompliance is one of the most challenging and far-reaching behaviors demonstrated by students with EBD. These students display poor academic achievement, high levels of disruptive behavior, and difficulty adjusting to adult life (Frank, Sitlington, & Carson, 1995; Landrum et al., 2003). Researchers have suggested that compliance is a "keystone behavior" and that improving a child's compliance with adult instructions can simultaneously reduce problem behaviors in other domains and contribute to academic success (Axelrod, Bellini, & Markoff, 2014; Corrigan, 2006).

The Precision Request

One behavioral intervention which has been recommended for increasing student compliance is the Precision Request. This intervention combines precise commands, verbal praise, and reductive consequences into a treatment package that has been supported by a limited body of research, though typically as part of a multi-intervention regimen (Calder, 2017;

Forehand & McMahon, 1981; Landrum et al., 2003; Mackay, McLaughlin, Weber, & Derby, 2001; Yeager & McLaughlin, 1996). The Precision Request has also been recommended by a number of reputable sources for teachers including the Tough Kid Book (Rhode, Jensen, & Reavis, 2010), The Utah Least Restrictive Behavior Intervention Manual (USOE Task Force, 2015), Vanderbilt Special Education compliance recommendations ("Tip Sheet: Compliance Strategies", n.d.), and interventioncentral.org (Wright, 2014).

Landrum et al. (2003) described the Precision Request as a directive that (a) uses a consistent discriminative stimulus and is thereby predictable for students, (b) incorporates consequences, including reinforcement for compliance and punishment for noncompliance, and (c) provides wait time for the child to comply. These authors specifically recommended the Precision Request as an intervention for students with EBD.

Rhode et al. (2010) provided an operational definition of the Precision Request. According to their definition, the Precision Request includes the following steps (Figure 1): (a) a request is made by the teacher to an individual student or group which begins with the word "please," as in "Please take out your math book," b) the teacher waits at least three and up to 10 seconds without delivering any other verbal directives or statements, (c) the teacher praises if compliance occurs, or, (d) in the case of noncompliance, the teacher delivers a second request containing the word "need" as in "You need to" or "I need you to" (e.g., "You need to take out your math book."), (e) the teacher waits at least three and up to 10 seconds without delivering any other verbal directives or statements, (f) the teacher praises if compliance occurs, or, (g) in the case of continued noncompliance the teacher delivers a predetermined reductive consequence.

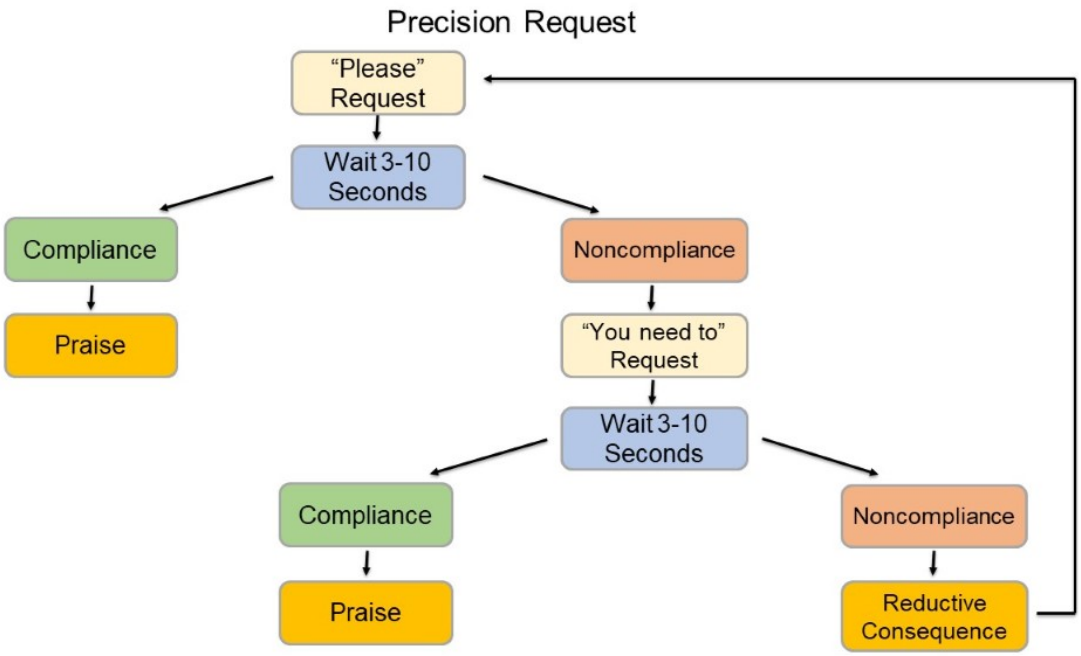

Figure 1. Precision Request flowchart (Adapted from Rhode, Jensen, & Reavis, 2010).

The Precision Request is made up of three general components: alpha commands, which include the "please" and "need" requests, as well as wait time for the child to comply, praise, and reductive consequences.

Alpha command. The alpha command is a clear, succinct, positively stated direction or command which is given in order to initiate or terminate a behavior (Forehand & McMahon, 1981). Examples include "Put on your shoes," "Come here," and "Take out a pencil." These types of commands contrast with beta commands which are directives that make it difficult for the student to respond correctly because they are either (a) so vague that the child cannot determine how to act (e.g., "Hey, knock it off!"), (b) interrupted by further comment from the giver before enough time has elapsed for the child to comply (e.g., "Sit down. I said, 'Sit down!' Why are you always out of your seat?"), or (c) completed by the giver before the child has time to comply ("Quit climbing on that!" followed by removal of the child from the table to the floor).

Forehand et al. (1979) trained parents in the use of alpha commands to increase compliance and found that child compliance to alpha commands occurred 78% of the time during treatment, while child compliance to total commands (alpha plus beta) occurred only 30% of the time. Beta commands have been shown to have the opposite effect of alpha commands by increasing the likelihood of noncompliance (Forehand & Scarboro, 1975; Peed, Roberts, & Forehand, 1977; Roberts & Powers, 1988; Schoen, 1986; Starkweather-Lund, 2001; Williams & Forehand, 1984).

Praise. Praise can be defined as "verbal acknowledgement of expected appropriate social or academic behavior exhibited by students" (Cavanaugh, 2013, p. 113). Examples include "You got it right!" and "Terrific!". Verbal praise from parents and teachers has been correlated strongly with high rates of compliance (Atwater & Morris, 1988; Eyberg, Boggs, & Algina, 1995; Schutte & Hopkins, 1970) and on-task behavior (Sutherland, Alder, & Gunter, 2003; Sutherland, Wehby, & Copeland, 2000), and has been shown to be effective both alone and in combination with other behavior modification procedures (Starkweather-Lund, 2001). Behavior specific praise (BSP) has been defined as praise that "specifies particulars of the behavior that is to be reinforced" (Markelz & Taylor, 2016, p. 3). Examples of BSP are "I like how you are working quietly at your desk," "Nice job holding your pencil correctly," and "Way to line up quickly!"

Chalk and Bizo (2004) evaluated the effect of BSP versus the effect of general positive praise on four different classrooms containing students between eight and nine years old. Two teachers were instructed to use "specific praise" and two teachers were instructed to use "positive praise." The study found that BSP promoted more on-task behavior than did positive praise.

Reductive consequence. A reductive consequence is a stimulus or procedure which is intended to reduce a given behavior when applied. It differs from a punisher in that a punisher must decrease the rate of the behavior for which it is delivered in order to be classified as such. When reductive consequences are delivered, they are intended to act as punishers by reducing problem behavior, but the giver may not know for certain whether the stimulus applied is, in fact, punishing. Examples of reductive consequences may include loss of points, removal of a preferred item, or a phone call home to parents.

Several studies have found that reductive consequences were necessary in order to maintain acceptable levels of on-task behavior in classrooms (Acker & O'Leary,1987; Kelley & McCain, 1995; Pfiffner & O'Leary, 1987; Rosén, O'leary, Joyce, Conway, & Pfiffner, 1984). For example, Pfiffner and O'Leary (1987) studied on-task behavior in an elementary classroom containing eight first through third graders with behavioral and/or academic problems. They found that when a classroom system using only positive consequences (verbal praise, bonus work, and public posting of completed work) was implemented and all reductive consequences were removed, the mean rate of on-task behaviors dropped from 77% before removal of reductive consequences to 41% in the positive consequences only condition. The addition of reductive consequences (verbal reprimands) resulted in an immediate increase in on-task behavior that remained stable for the remainder of the condition at a mean rate of 80%. The subsequent removal of reductive consequences again produced an immediate decrease in the rate of on-task behavior for six of the eight children.

Previous Studies

Though each of these individual components of the Precision Request have been supported by research, there are a limited number of studies which have examined the Precision

Request as a whole. Further, most studies have examined the Precision Request as one component of several in a multi-component intervention package. For example, Yeager and McLaughlin (1996) found that the use of a time out ribbon (a ribbon worn by preschool children while they demonstrated compliant behavior and removed for noncompliance) paired with the use of Precision Requests effectively increased compliant behavior in a four-year-old male preschool child. His percentage of compliant behavior increased from a mean of 2.2% in baseline during each 10-minute observation to 54.2% when the time-out ribbon procedure alone was applied. In a subsequent phase the Precision Request was added to the time-out procedure and his mean percentage of compliance further increased to 74.6%.

A few studies have examined the Precision Request as one component of several in a multi-component intervention package which also included (a) antecedent strategies such as teacher movement and posting of classroom rules and (b) consequence strategies such as response cost, token economies, and mystery motivators (DeMartini-Scully, Bray, & Kehle, 2000; Musser, Bray, Kehle, & Jenson, 2001; Rhode et al., 2010). Each of these studies concluded that the treatment package was effective at reducing student noncompliance and disruptive behavior. However, a subsequent replication study implemented the same multi-component package but excluded the Precision Request based on feedback from teachers during the previous studies that the Precision Request was too difficult to implement (Kehle, Bray, Theodore, Jenson, & Clark, 2000).

Calder (2017) sought to examine the Precision Request as a stand-alone intervention to see if positive results on reduction of noncompliance could be found without the addition of the other components in the treatment package. They studied the effects of the Precision Request on noncompliance in eight students in third and fourth grade diagnosed with an EBD in a self-

contained classroom for students with behavior disorders. They used an ABAB reversal design and found that the Precision Request improved compliance from an average of 74% at baseline to 97% in the second intervention phase. Further, they found that average teacher praise statements increased from 9.3 per session in baseline to 36.4 per session in the final intervention phase.

Though Calder (2017) effectively demonstrated a reduction in noncompliant behavior during implementation of the Precision Request, because the procedure itself is a multi-component intervention, they could not definitively identify which component was responsible for the increase in compliance. For example, the nearly quadrupled praise count across phases could have produced the effect simply as a result of increased verbal praise statements from the teacher. Alternatively, there was always an implicit "threat" of a reductive consequence being delivered as the students were told from the beginning of the study that they would receive a specific reductive consequence for noncompliance. This threat of receiving a reductive consequence alone could have been responsible for improving rates of compliance. Still another possibility is that all components may be necessarily implemented together to achieve acceptable levels of compliance. The specific component responsible for the increase in compliance remains unknown.

Statement of the Problem

Because noncompliance is such a common and, at times, severe problem in classrooms serving students identified with EBD, there are often negative impacts regarding the amount of time available for instruction (Belfiore et al., 2008; Greenwood, 1991) as well as relationships among students with both peers and teachers (Axelrod et al., 2014). Although the Precision Request has been shown to reduce noncompliance in students with EBD, it has typically been

studied in multi-intervention treatment packages, which impedes researchers' ability to study its effects in isolation. Calder (2017) effectively reduced noncompliance in a classroom containing elementary school students with EBD by implementing the Precision Request, however, questions remain about whether all components in the Precision Request are necessary to improve compliance.

Statement of Purpose and Research Questions

The current study was designed to address the question of whether one or more component(s) of the Precision Request can produce as acceptable rates of compliance as can the entire treatment procedure. We designed and implemented an add-in component analysis to examine the effect of each step of the Precision Request on noncompliance in students with EBD. We desired to conduct the study as a follow-up to Calder (2017) and therefore selected a similar population of students and setting with which to conduct our study. We utilized methods very similar to those used by Calder (2017) with the most notable difference being that we implemented the steps of the Precision Request in phases. The research questions which guided our study were a) Which step in the Precision Request procedure is responsible for the greatest improvement in compliance?, and b) What is the earliest step in the Precision Request procedure which produces an acceptable (i.e., 80% or higher) rate of student compliance?

Method

This section includes a summary of the methods used in this study. First, a description of the participants and setting are given. This is followed by an explanation of the measures, including dependent and independent variables. The research design is then presented, followed by a description of the data collection procedures, intervention procedures, and data analysis

used. Implementation fidelity procedures and interobserver agreement are then highlighted. Finally, social validity measures are described.

Prior to conducting this study, we received approval from the university's Institutional Review Board. We then contacted local school districts and received approval to conduct our study from one of the districts. We contacted this district's specialist responsible for the EBD classrooms and were given four names of teachers as possible participants. After contacting these participants, we received a response from one teacher who was interested in participating. Permission to collect data and record students was then obtained by the principal at the school where this teacher worked. We then obtained written consent from the teacher participant, paraprofessional participants, and parents of the student participants.

Participants

Teacher participant. The teacher participant was a 35-year-old Caucasian female with five years of teaching experience in general education third and fourth grade classrooms. At the time of the study, she was teaching her first year in a classroom for students classified with Emotional Disturbance (ED). She had a bachelor's degree in Elementary Education with an endorsement in technology. She had begun taking university classes the previous summer to receive a Special Education endorsement in Mild/Moderate disabilities. The teacher participant was selected based on the following criteria: (a) she reported a problematic level of noncompliance among her students, and wished to improve classroom management, (b) she was not currently using Precision Requests, (c) she was willing to have a Kubi teleconference system(Revolve Robotics, 2018) in her classroom, and (d) she was teaching in a class designed to serve students with Emotional/Behavioral Disorders (EBD). The teacher participant was compensated at the end of the study with a $200 Amazon gift card.

Paraprofessional participants. The three paraprofessionals assigned to the teacher's classroom were also considered teacher participants and their data were recorded in the same manner as were the teacher's data. The first was a 49-year-old Caucasian female with 13 years of experience working with children, 12 of which were as a paraprofessional in a preschool classroom for children with disabilities. This year was her first year working in the classroom for students with EBD. The second was a 35-year-old Caucasian female with less than one year of experience working as a paraprofessional. The third was a 60-year-old Caucasian female who was also in her first year working as a paraprofessional. The paraprofessionals' education levels were 12th grade, one year of college, and "some college". The paraprofessionals were each compensated at the end of the study with a $50 Amazon gift card.

Student participants. The student participants included five individuals with a special education classification of Emotional Disturbance (ED), one of whom had an additional diagnosis of Other Health Impairment. All five of the students who consented to participate were in sixth grade. Four of the students were male, and one was female. Four of the students were Caucasian, and one was Hispanic.

Setting

The study took place in a self-contained classroom for students in fourth to sixth grade who were diagnosed with ED, which was housed in a public elementary school in a suburban neighborhood. The classroom was a district wide catchment for students with significant behavior problems. The classroom contained six single desks, spaced evenly apart, with two small group tables on the side and back of the room, respectively. During observations, students were most often either sitting in their own desks alone or with a teacher next to them in a chair or working with two students to one teacher at a small table. All observations took place during

math instruction that lasted for approximately 40 minutes. The teacher indicated that this was the period in which she encountered the most noncompliance.

Dependent Variables

Data were collected on individual student and teacher behaviors and then aggregated to reflect class-wide totals. The dependent variables included the following: (a) percent of student compliance, (b) latency to initiation of compliance following any teacher request (i.e. Precision Request or general request), (c) number of teacher verbal praise statements, and (d) reductive consequences delivered.

Percent compliance. Percent of student compliance was measured by teacher and paraprofessional requests complied with divided by total requests delivered; this included only those requests which were given by the adult to an individual student, and did not include requests delivered to the class as a whole or requests given to a small group of students. Teacher requests were defined in two ways. During baseline, data were collected on general teacher requests, which was defined as any specific, direct verbal request or command, followed by a wait time of three to 10 seconds, which was directed to an individual student with the goal of initiating or terminating a particular behavior (e.g., “Please take out your math book,” “Line up at the door,” and “Stop tapping your pencil.”). The second definition of teacher request referred to the Precision Request (independent variable). Data were collected on student compliance to all requests given, whether a general request or a Precision Request. We defined student compliance as initiation of a teacher-desired response within 10 seconds following delivery of the teacher directive. Student attempts to comply, even if unsuccessful, were counted as compliance. For example, if a student was asked to retrieve his math book from his cubby, but it

wasn't located there, his behavior of walking to the cubby and looking was marked as compliance.

Latency to compliance. Latency to compliance was defined as the amount of time that transpired following the completion of the teacher's request (general or Precision Request) to the student's initiation of the requested behavior. The completion of the teacher's request was defined as one second after the teacher stopped speaking, unless the teacher followed with the same request or command within 10 seconds of her original statement. For example, if the teacher said, "Go get out your math book," and after a two second pause followed with, "We need to get started on math so go get your book," this would be considered as one teacher request. If, however, 11 seconds had elapsed between the first and second teacher utterance, it would be considered as two teacher requests.

Teacher praise. Teacher praise was defined as any form of positive verbal approval that affirmed student behavior. This included both general verbal praise ("Good job") and Behavior Specific Praise (BSP; "Thanks for getting your math book out so quickly!"). BSP was defined as any positive verbal approval which included a description of the behavior being affirmed. The participants were trained on the use of BSP and encouraged to use it in the study, however, usage of both BSP and general verbal praise was recorded together and calculated as a total praise count.

Reductive consequences. Teacher delivery of reductive consequences was defined as any consequence (e.g., loss of recess time, points taken away) which was designed to reduce undesired behavior, and which was delivered following student noncompliance. We did not include verbal reprimands (e.g., "Stop that!") in our definition of reductive consequences.

Independent Variable

The independent variable was the effect of the Precision Request intervention, as defined by Rhode et al. (2010). In order for implementation to be more effortless, the reductive consequence part of the procedure was designed to be that which the teacher was already using in her classroom (e.g., loss of points, reduced recess time).

Research Design

The study completed by Calder (2017) demonstrated, by means of an ABAB reversal design, that the Precision Request was effective at reducing noncompliance among the sample of students classified with EBD. This study was designed to extend Calder's (2017) research by using a component analysis. Component analyses are research designs which allow an experimenter to break apart interventions containing multiple active components in order to discover how individual components affect behavior. Kennedy (2005) suggested that component analyses are useful for identifying which elements of an intervention are necessary for success. He cited a study by Medland and Stachnik (1972) wherein an intervention called the "good behavior game" was studied. This game contained three components: (a) rule statements, (b) a light box that signaled when the class was behaving well or inappropriately, and (c) a group contingency that provided reinforcement for goals met. This study effectively showed that only two of the three components (rule statements plus performance feedback) were necessary to maintain near zero levels of problem behavior—the same as when the entire treatment package was used.

Ward-Horner and Sturmey (2010) identified two types of component analyses: dropout and add-in analyses. In a dropout analysis, the entire treatment package is implemented and then each component is systematically removed. At some point in this process, the treatment stops

working, and researchers can identify which component was responsible for the efficacy of the treatment. In an add-in analysis, researchers begin with one component, and then implement additional steps or components prior to the entire treatment package being implemented. The main advantage with this approach is that researchers can avoid the behavioral effects that occur when multiple components are implemented. For example, if an effective treatment package [ABC] was implemented and then the component responsible for the behavioral change [C] was removed in a dropout analysis, behavior might not change because of the initial pairing of component C with A and B. Ward-Horner and Sturmey state that "add-in reversal or alternating treatments designs provide the most powerful and complete analysis of the active components of a treatment package because they reduce potential confounding from the behavioral effects of component combinations" (p. 690). The authors further suggest using an add-in analysis for studies which are evaluating the components of a treatment package which has previously been shown to be effective because it "will allow evaluation of the independent effects of components prior to their combination" (p. 701).

According to these recommendations, this study was designed to utilize an add-in reversal component analysis as an ABCDAX design (Table 1), where phase A was baseline; phase B was delivery of the first step of the Precision Request (i.e., "Please [request]"), followed by three to 10 seconds of waiting with no praise for compliance and no reductive consequence for noncompliance; phase C included both the first and second steps of the Precision Request and added in praise for compliance (i.e., "Please [request]"), followed by three to 10 seconds of wait time and then praise for compliance or, if the student did not initiate the compliance behavior, the second step of the Precision Request (i.e., "You need to [request]"), followed by three to 10 seconds of wait time and praise for compliance, with no reductive consequence for

noncompliance; phase D included the entire package of components, and followed the sequence of phase C with the inclusion of a reductive consequence delivered after noncompliance to the second (i.e., "You need to") request occurred; the second phase A was a return to baseline for replication purposes and to minimize the possibility of sequence effects; and phase X was a final implementation phase of whichever intervention (B, C, or D) was concluded by visual analysis, to be the most effective. We defined the most effective phase as whichever phase produced the greatest amount of compliance for the least amount of teacher effort expended. This could be understood as the first step in the Precision Request procedure which produced an acceptable rate of compliance (i.e., 80% or higher), unless there was a substantial increase in compliance rates in a subsequent step which could reasonably be considered to be "worth" the additional teacher effort.

Table 1

Add-in Component Analysis Design

Phase	Description	Example
A	Baseline	Teacher's current practices
B	First step of Precision Request	"Please keep your hands to yourself." Three to 10 seconds of waiting. No praise for compliance. No reductive consequence.
C	First and second steps of Precision Request	"Please line up." Three to 10 seconds of waiting. Praise for compliance. If no compliance, then "You need to line up." Three to 10 seconds of waiting. Praise for Compliance. No reductive consequence.
D	All components	Follow sequence of Phase C and add reductive consequence for noncompliance after second request.
A	Baseline	Remove all use of Precision Request
X	B, C, or D	Reinstitute whichever phase was most effective for replication and to minimize sequence effects.

Data Collection Procedures

A Kubi teleconference system (Revolve Robotics, 2018) is a remote-controlled arm mounted with a tablet that allows the viewer to access and manipulate the video functions of the tablet in order to view a live video feed or record video from another location. A Kubi system was placed in a discreet place at the back of the participants' classroom to record and monitor teacher delivery of Precision Requests and count of praise along with student compliance rates. This observation system was remotely accessed by researchers and adjusted to view the teacher and students every session during data collection.

Data collectors included a first-year graduate student studying special education and a fourth-year undergraduate student studying psychology. Data collectors were trained by learning all dependent variable definitions and reviewing examples and nonexamples and then by practice coding videos of the Precision Request until their codes were at least 90% reliable with an answer key.

To minimize the possibility of reactivity effects, the Kubi system was accessed remotely and adjusted around the room by a data collector several times during the day prior to the beginning of data collection. The teacher introduced the camera to the students and explained that it would be turning on and off and moving around. The following day the teacher reported that the students were not attending to, bothered by, or asking about the camera.

Data collection then began with a 15-minute preliminary observation to assure that there were levels of noncompliance sufficient to conduct the study in this classroom. During this preliminary observation, compliance was 57%, which satisfied the predetermined requirement of 75% or lower levels of compliance. Data collection occurred during math instruction, which was the time of day that the teacher reported she met with the most noncompliant behavior from her

students. Observations continued every day for 15 minutes at the same time each day. The video feed was recorded, and a data collector later watched and coded frequency of noncompliance, verbal praise, and reductive consequences, latency to compliance, and fidelity of implementation. For latency data, the time stamp on the video was used to record one second for immediate compliance to teacher directives and each real-time second thereafter, up to 10 seconds. The data collector coded 10 seconds for instances of compliance which occurred at any time after 10 seconds, or which never occurred. All recorded observations were kept in password-protected folders located in a two-step password protected online account and were only accessible to members of the research team.

Intervention Procedures

During baseline data collection the teacher participant was instructed to continue using her usual practices and procedures to manage noncompliance in the classroom. She received no training or feedback during this phase. Data on the dependent variables were collected in this phase.

During intervention phases the teacher and three paraprofessionals attended three brief trainings, one for each intervention phase, which lasted 25, 30, and 45 minutes, respectively, and were each held the day prior to implementation of a new phase. The first training was on the difference between alpha commands and beta commands and how to deliver the first step of the Precision Request. (i.e., “please” request plus wait time). After the training, each individual was given an opportunity to demonstrate understanding by correct usage of the first step of the Precision Request when given a hypothetical scenario. If an individual did not demonstrate correct understanding, she was given corrective feedback and another scenario with which to respond. This happened only once across all trainings and individuals. In phase B

implementation, the teacher was texted or emailed specific feedback (affirmative and corrective) after sessions in which implementation fidelity was less than 80%.

In the second training, participants were taught to use the second step of the Precision Request (i.e., the "need" request) and to use praise after student compliance. Part of the training consisted of teaching the difference between general praise and BSP and teachers were encouraged to use BSP. Again, the teachers were given scenarios with which to practice at the end of the training. And again, after implementation, the teacher was texted frequent feedback on implementation throughout phase C.

The third training was on the entire Precision Request. Participants were taught to use the whole procedure, including reductive consequences. At this time, the participants reported that they did not use any reward or punishment system in the classroom, only a point system wherein students began the day with 100 points, but they neither earned something for keeping points, nor did they receive any sort of reductive consequence if they lost points. The teacher reported using this system only for "compliance" to district special education policy. Thus, the researchers engaged in dialogue with the teachers to choose a reductive consequence system. A "roll-a-dice" game was implemented at the end of the math period. Students received one check mark for each instance of noncompliance to the Precision Request. Two dice, a red one which contained numbers one, two, and three, and a green one which contained numbers four, five, and six were available to roll, with each number corresponding to a reward (pick from the treasure box, treat or snack, soda pop, five minutes of free time, five minutes iPad time, five minutes of extra recess). If, at the end of the math period, students had received zero marks, they could roll two times, once from the red die and once from the green die. If the students had one or two checks at the end of math instruction, they could roll one of the dice, either red or green. If they

had three or more checks, they did not roll for a reward and instead continued to work while the other students rolled the dice.

Prior to each phase implementation, students were informed about the changes that would be implemented. Before phase B, the teacher read a researcher-written script describing that she would be using a statement beginning with "Please" and that they were expected to comply. This reading of the script was highly disruptive to the class and one student became anxious and repeatedly asked why she read from the paper for the remainder of the session. Because of this, before phases C and D, the teacher read the script on her own before the students came and then described the changes in her own words to the students. The students were told, prior to phase D, what reward they would receive for compliance and what consequence they would receive for noncompliance.

In phase D, teacher participants continued to receive implementation feedback from a researcher via text message, email, and in vivo during the training. Additionally, they were provided a poster containing the Precision Request flowchart during the phase D training.

Data Analysis

Data collected in this experiment were analyzed via visual analysis, a process wherein data that are collected are graphed and analyzed continually, until the completion of the experiment (Cooper, Hedges, & Valentine, 2009; Kennedy, 2005). Through frequent visual inspection and analysis this graphed data allows researchers to determine what the next step should be at any given phase of the experiment. Throughout this process the level, trend, and variability within phase and the immediacy of effect, overlap, and consistency of data patterns across phases should be examined to determine whether a functional relation, or the demonstration of experimental control of the dependent variable by the independent variable, is

present. Experimental control refers to a convincing demonstration that the intervention is responsible for the change in the dependent variable (Kennedy, 2005).

Implementation Fidelity

Three types of implementation fidelity data were collected. First, data were collected on the training and coaching that the teacher participant received prior to each intervention phase. This consisted of a procedural checklist indicating which steps of the training were completed and was filled out by the researcher who completed the training.

Second, implementation fidelity data were collected on the participant's accurate usage of each component of the Precision Request. Each delivery of the Precision Request was scored as either accurate or inaccurate. An accurate delivery was recorded if the teacher completed all the necessary steps to gain compliance or deliver a consequence. For example, if the teacher delivered the “Please” request and waited three to 10 seconds but failed to deliver the “You need to” request after the occurrence of noncompliance, this was recorded as an inaccurate delivery of the Precision Request. Conversely, if the teacher delivered the “Please” request and the student complied within 10 seconds, this was counted as an accurate Precision Request, even though only one step of the procedure was completed. To calculate implementation fidelity for each daily session we used the point-by-point agreement system (Kennedy, 2005) wherein we divided the number of accurate requests by the total number (accurate plus inaccurate) of requests that were delivered.

The third form of implementation fidelity data was collected on the percentage of agreement between two data collectors regarding the correct implementation of the Precision Request.

Interobserver Agreement

Two data collectors observed the same 25% of session videos across all phases of treatment. The point-by-point agreement system (Kennedy, 2005) was used, in which each recorded data point was counted as either an agreement or disagreement, and the final calculation was agreements divided by agreements plus disagreements. An agreement was scored if both data collectors recorded an occurrence within five seconds of each other. For latency, an agreement was scored if total latency was within three seconds for both observers. Each dependent variable (i.e., percent compliance, latency, praise, and reductive consequences) was scored separately and all scores were then calculated as a total average per session.

Social Validity

Social validity of the Precision Request was evaluated in three ways. First, at the end of the study, the teacher and paraprofessional participants completed the Usage Rating Profile-Intervention (Revised; URP-IR; Briesch, Chafouleas, Neugebauer, & Riley-Tillman, 2013; Chafouleas, Briesch, Riley-Tillman, & McCoach, 2009) which includes ratings on ease of implementation, extent to which the participant found the procedures acceptable, and whether or not the participant observed meaningful change in the students' behavior as a result of the intervention. The URP-I contains six subscales which are scored on a Likert scale of 1-6: Acceptability, which indicates the extent to which the participant believes the intervention is appropriate given the problem behavior (α = .95); Understanding, or the extent to which the participant understands how to implement the intervention (α = .79); Family-School Collaboration, which measures the extent to which a participant believes family-school collaboration is necessary for an intervention to be successful (α = .78); Feasibility, which assesses whether the participant feels the intervention is feasible to implement, given existing

demands (α = .88); System Climate, which indicates whether the participant feels the intervention is compatible with the school climate (α = .91); and System Support, or the extent to which the participant feels he or she would need external support in order to appropriately implement the intervention (α = .67). The lower reliability of System Support could be due to the fact that only three items are included in this subscale. The URP-I was reported to have sufficient discriminant validity, with all correlations between subscales falling below .85 (Briesch et al., 2013).

Second, all student participants completed the Children's Usage Rating Profile (CURP; Briesch & Chafouleas, 2009). This measure contains three subscales which are scored on a Likert scale of 1-4: Personal Desirability, or the extent to which the student likes the intervention and would be willing to participate in it (α = .92); Feasibility, which assesses whether the student feels that the intervention is feasible in terms of effort required and intrusiveness to classroom dynamics (α = .82); and Understanding, which indicates whether the student feels that they understand why the intervention is being implemented, and whether they feel confident that they can successfully participate (α = .75). This measure had both qualitative (face validity to assess appropriate wording and whether items matched with constructs) and quantitative phases of content validation. In the latter phase, three content experts (researchers in the area of school-based treatment acceptability and usage) and four lay experts (school psychologists and teachers) evaluated the appropriateness of the items included in this measure.

Third, at the completion of the study, the teacher and paraprofessional participants engaged in a semi-structured interview with the researcher wherein open-ended questions were asked in order to collect anecdotal data regarding the participants' overall perceptions of the

intervention, opinions on the efficacy for their students, philosophical standpoints, and thoughts regarding the training and support that were offered to them throughout the study.

Modifications and Additional Procedures

Daily calculation of implementation fidelity percentages revealed early in phase B of this study that participants were having difficulty implementing the procedure correctly. This difficulty required researchers to make concurrent modifications to the methods as the study progressed. These are presented next.

Dependent variable. We were unable to code teacher directives according to the original definition of teacher request due to the exclusive use of beta commands (e.g., "Do you want to come tell me what's wrong?," "Hey, hey, hey, don't!," "Do you have permission to do that?") with little to no wait time during baseline and frequently throughout intervention sessions. We thus utilized a more liberal definition in order to be able to code all teacher requests. We adjusted the definition of "teacher request" during baseline to any statement made by an adult indicating that a student needed to initiate or terminate a behavior. During the following intervention sessions, we collected data on compliance to all teacher requests, but recorded the request as correct if it was given according to the original definition, which was the definition used when the teachers were trained to give alpha commands, and incorrect if it was a statement which fell under the second definition.

Research design. Because visual inspection of the data revealed that poor implementation fidelity was preventing the intervention from having any effect upon the dependent variables, it was determined that a return to baseline would be unnecessary. As a result, we omitted the last two phases of the design.

Additional procedures. After conducting the study according to the above method, we implemented additional procedures in order to address the possible reasons for failure of the participants to implement the procedure with fidelity. We compared characteristics of the interventionist who participated in Calder's (2017) study to the characteristics of our adult participants, as well as characteristics of student participants in both studies, pre- and post-intervention scores in both studies, and social validity outcomes from both studies.

Results

Results regarding data collection of each dependent variable are here presented, followed by implementation fidelity results. Results of the comparison of studies which was completed ex post facto are then displayed. Lastly, social validity outcomes are presented.

Results of Precision Request

Percent compliance. Figure 2 shows the average percent of student compliance from baseline through the end of the intervention. Average compliance during the baseline phase (A) was 50% (range 27%-69%). During the first intervention phase (B), wherein only the alpha command in the form of a "please" request was implemented, average compliance remained at 50% (range 27%-75%). Phase C added in a second prompt (i.e., "You need to") plus teacher/paraprofessional praise, and average compliance for this phase was 48% (range 15%-83%). In the final phase (D) a reductive consequence was added for noncompliance and the entire Precision Request intervention was implemented. Average compliance in this phase was 49% (range 25%-77%). Thus, total average compliance rates remained stable from baseline through to the final implementation phase. All sessions showed high variability with a range as wide as 68 percentage points (phase C).

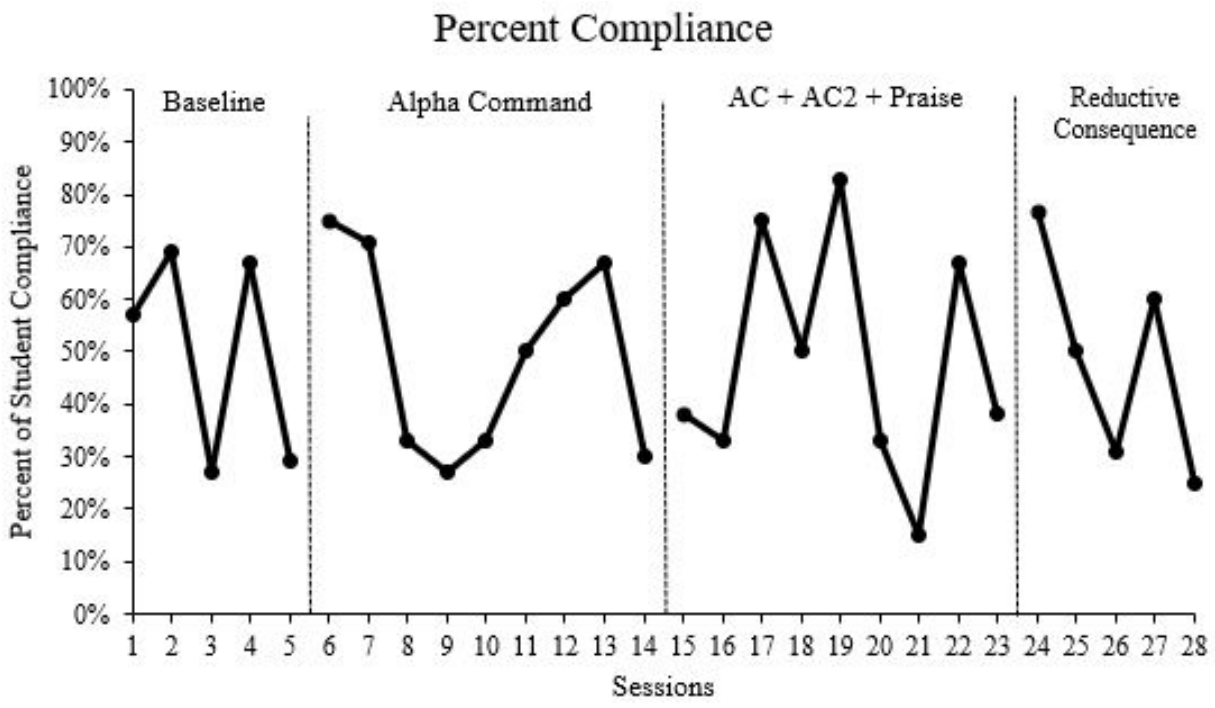

Figure 2. Percent of student compliance.

Latency. Average latency to compliance (Figure 3) also varied very little across sessions. In phase A (baseline), average time to compliance was 6.0 seconds (range 4-8). In phase B, average time was 6.2 seconds (range 4-8). In phase C, average latency rose to 7.1 seconds (range 4-9). In phase D, average latency was 6.6 seconds (range 6-8 seconds). Again, there was high variability from session to session with the largest range spanning five seconds (phase C). On a scale where the latency could range from a minimum of one second to a maximum of 10 seconds, this is a significantly wide range.

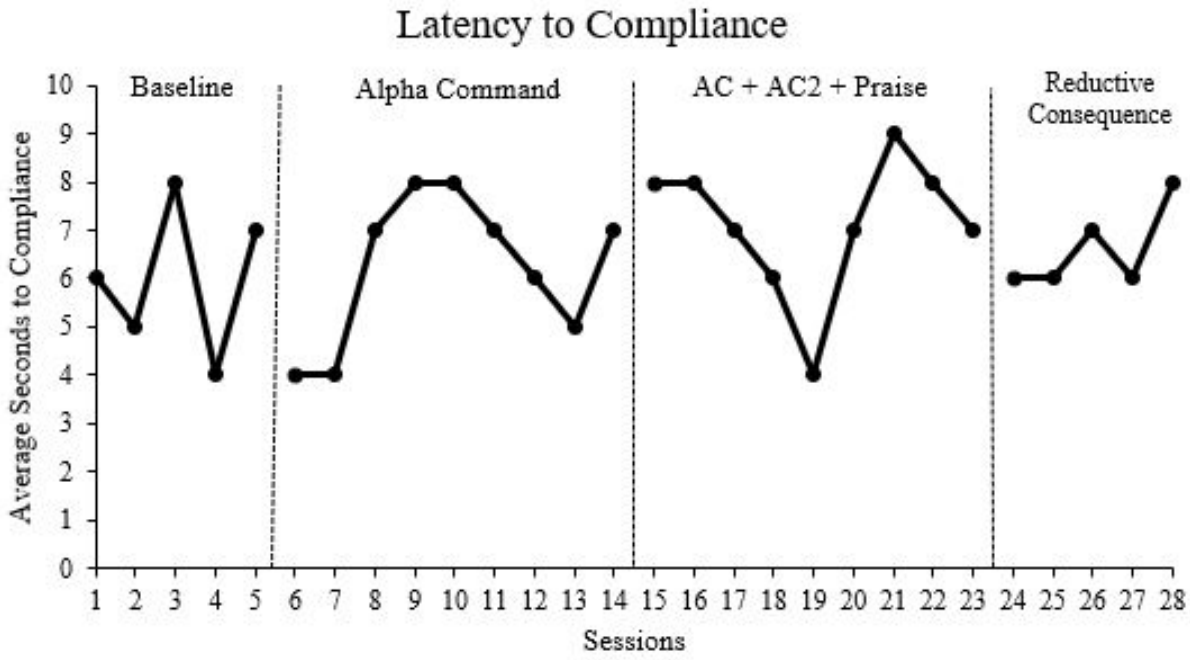

Figure 3. Latency to compliance.

Verbal praise. Verbal praise was recorded as a total count for each 15-minute session of each phase (Figure 4). We included any statement of praise, including general praise statements such as "Thank you" and BSP ("I like the way you are sitting quietly"). BSP was non-existent in both baseline and the alpha command phase, so all praise statements in phases A and B were general praise statements. BSP first appeared in phase C, after the teacher and paraprofessionals had been trained on the use of it, but it was still used infrequently. Throughout all sessions, praise tended to be based on academic performance (i.e., "That's right!" after a student answered a question correctly) rather than on student behavior (i.e., "Thank you for sitting down"). Average teacher praise in baseline was 2.2 (range 0-4). In phase B, the average praise count more than doubled to 5.1 (range 3-11). In phase C the average praise count lowered slightly to 4.8 (range 3-8). In the final phase, average praise was 5.8 (range 0-12). There was extreme variability in total praise count during this last phase.

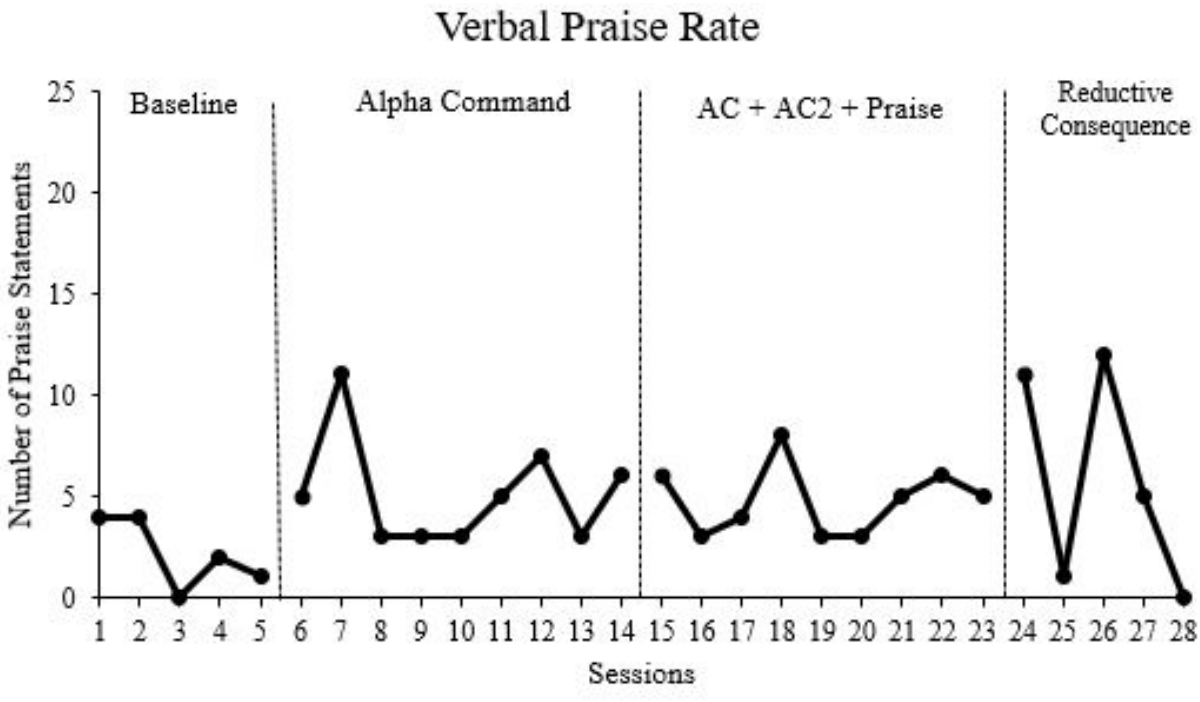

Figure 4. Verbal praise count.

Reductive consequences. Figure 5 indicates the total number of reductive consequences which were given each session from baseline through the final phase of intervention. Reductive consequences were not delivered during phases A, B, or C. In the final training prior to the implementation of phase D, the teacher and paraprofessionals were taught to implement reductive consequences. In this phase the average amount of reductive consequences delivered per session was 3.6 (range 1-6). However, this data included reductive consequences delivered for the entire 40-minute math period before the students received their reward game, not just the 15-minute observation period. Further, the teachers implemented a reductive consequence anywhere from a third to half the amount of times the researcher recorded a reductive consequence should have been delivered, according to the instances of noncompliance, just in the 15-minute observation window. In other words, the researcher had recorded more instances that a reductive consequence should have been delivered in every 15-minute

observation than were actually delivered in the entire 40-minute class period, suggesting that implementation was well below expectations.

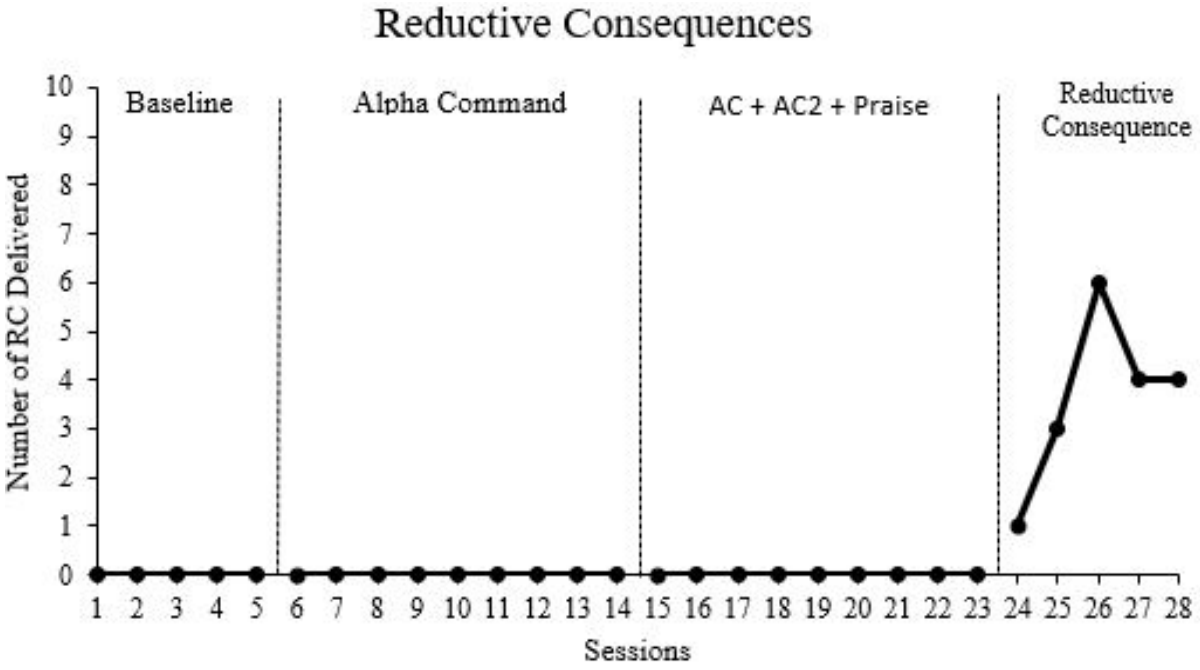

Figure 5. Reductive consequences delivered.

Implementation Fidelity

The first form of implementation fidelity, a procedural checklist which was filled out by a researcher while training the participants on the steps of the Precision Request, was implemented with 100% fidelity.

Figure 6 shows implementation fidelity of accurate and inaccurate deliveries of the Precision Request by teacher participants. Average fidelity of implementation was highly variable throughout phases B, C, and D. Stars on the graph indicate instances where the researcher gave feedback to the teachers. This feedback included both affirmative feedback of what was being done accurately and corrective feedback and was given via text, email, and in person. The average percentage of correct implementation in phase B was 60% (range 0%-100%). This phase had the highest overall percentage of correct implementation, but the widest

range of data. In phase C, average correct implementation fell to 26% (range 0%-60%). In phase D, implementation fidelity percentages rose slightly to an average of 40% (range 25%-60%) and showed less variability.

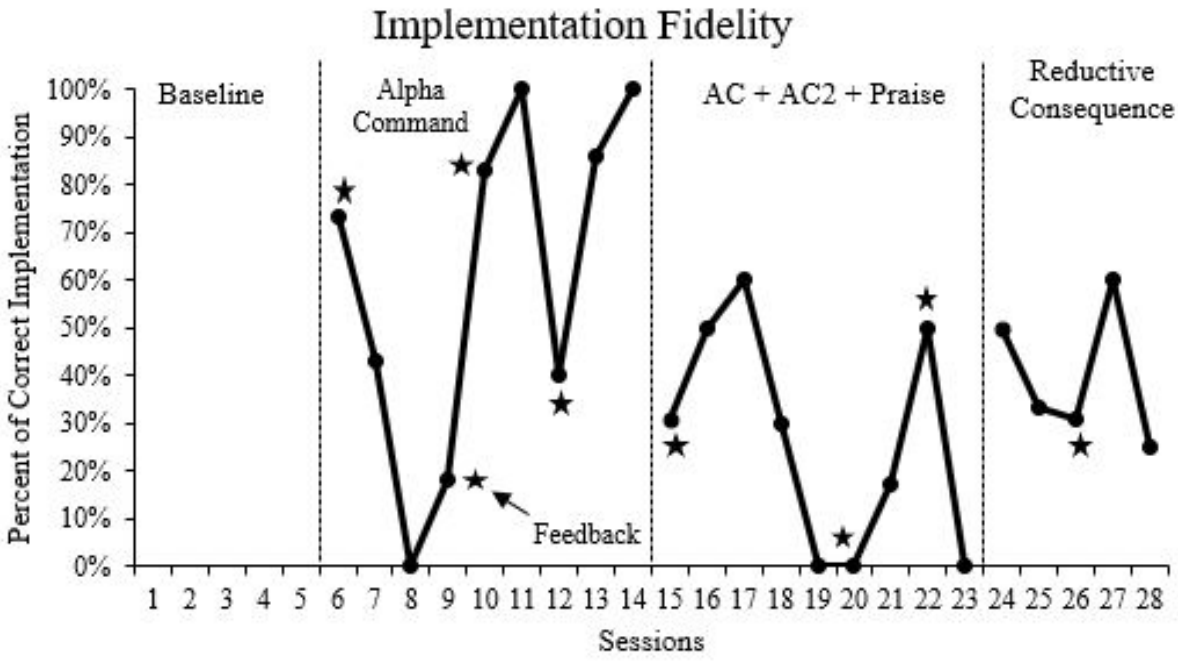

Figure 6. Implementation fidelity.

Figure 7 shows implementation fidelity as compared with percent of compliance. Sessions with higher levels of compliant behavior were not necessarily associated with higher levels of implementation fidelity. For example, sessions 10, 11, and 14 had the highest levels of implementation fidelity (range 83% - 100%) but were associated with relatively low levels of compliance (33%, 50%, and 30%, respectively).

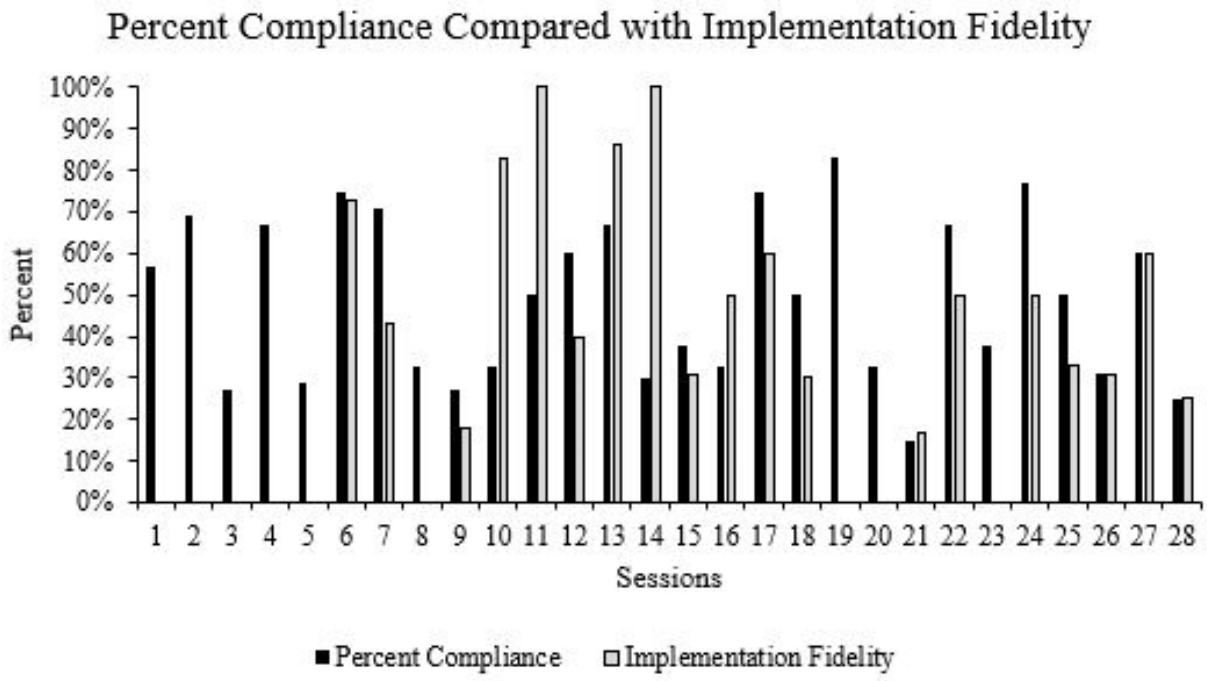

Figure 7. Percent compliance compared with implementation fidelity.

The third form of implementation fidelity data was collected on the percentage of agreement between two data collectors regarding the correct implementation of the Precision Request. A second data collector recorded implementation fidelity on 25% of total sessions, with 23% of those sessions occurring in phases B, C, and D. Total implementation fidelity agreement was 92% (range 81% - 100%).

Study Comparisons

Student/setting characteristics. A comparison of the student participants and setting involved in the study conducted by Calder (2017) and this current study can be found in Table 2. Similarities exist in the student classification, gender, ethnicity, and in the type of classrooms and schools in which the two studies were conducted. Student grades were also somewhat similar, with both studies involving elementary school aged students, though the students in the current study were slightly older.

Table 2

Comparison of Student/Setting Characteristics

Characteristic	Calder (2017)	Current Study
Number of students	8	5
Student grade	3rd – 4th	6th
Student classification	Emotional Disturbance	Emotional Disturbance
Student gender	1 female, 7 males	1 female, 5 males
Student ethnicity	5 Caucasian, 2 Latino, 1 not reported	4 Caucasian, 1 Latino
Type of classroom	Self-contained Special Education for EBD	Self-contained Special Education for EBD
District/School*	Suburban public elementary	Suburban public elementary

Note: Schools were located in the same district and same city, a few blocks from each other

Teacher participant characteristics. A comparison of our teacher participant to the teacher participant in the study conducted by Calder (2017) is highlighted in Table 3. The teacher participant in the Calder (2017) study not only had more years of experience in total, but also had more experience working in a classroom for students with EBD, and was Special Education certified, whereas the current teacher participant was general education certified and had never worked in an EBD unit. Additionally, the first study participant had classroom procedures in place such as a system of reinforcement and consequences prior to the implementation of the Precision Request, whereas the current participant did not. Further, the current study included paraprofessional directives in addition to teacher directives which required training and data collection for four individuals who were all unfamiliar with behavioral principles in general, and the Precision Request, specifically.

Table 3

Comparison of Teacher Participant Characteristics

Teacher Characteristic	Calder (2017)	Current Study
Years of teaching experience	23	5
Years in EBD unit	3	0
SPED certification	Yes	No (in progress)
Reinforcement system in place prior to PR	Yes	No
Consequence system in place prior to PR	Yes	No
Involved paraprofessionals	No	Yes

Note: PR = Precision Request

Pre and post scores. Table 4 shows a comparison of pre-and post- scores for Calder's (2017) findings as compared with the current study. Baseline rates revealed that Calder's (2017) participant had higher student compliance, lower latency to compliance, higher praise count, and higher delivery of reductive consequences during baseline, before any training occurred. The 2017 study showed baseline compliance rates of 74%, significantly higher than in the current study, which suggests that basic procedures which were in place in the classroom may have already been effective. Latency to compliance was significantly lower at only 2.4 seconds as compared with 6.0 seconds in the current study. Notably, Calder's (2017) teacher participant was able to nearly quadruple the praise count during each 15-minute session. Though the current participants did almost triple the praise count from baseline, the disparity of baseline praise levels was such that the final praise total in the Calder (2017) study was nearly six times that of the current study. Reductive consequences actually lowered during post-treatment in the 2017 study, presumably due to higher compliance and less need to deliver consequences. Finally,

overall implementation fidelity in the 2017 study was 86%, while the average implementation fidelity was 42% in the current study.

Table 4

Comparison of Pre and Post Scores

Measure	Calder (2017) Pre-PR	Current Study Pre-PR	Calder (2017) Post-PR	Current Study Post-PR
Student Outcomes				
Percent compliance	74%	50%	97%	49%
Latency to compliance	2.4 seconds	6.0 seconds	2.2 seconds	6.6 seconds
Teacher Measures				
Teacher praise count	9.3	2.2	36.4	5.8
Reductive consequence	1.3	0	0.2	3.6
Implementation fidelity			86%	42%

Note: PR = Precision Request

Social Validity

The teacher and each of the paraprofessionals completed the URP-IR (Briesch et al., 2013; Chafouleas et al., 2009), which contains six subscales with Likert scale ratings from 1-6. Average scores were as follows: Acceptability: 4.73 (range 4.56 – 5.00; the higher the number, the better the participants felt the intervention fit their circumstance); Understanding: 5.17 (range 5.00 – 5.33; the higher the number, the more the participants felt they understood how to deliver the intervention); Home-School Collaboration: 3.08 (range 1.00 – 4.33; the higher the number, the more parental support is felt to be needed for a successful intervention); Feasibility: 4.71 (range 4.33 – 5.00; the higher the number, the more the participants felt the intervention was feasible to implement); System Climate: 4.75 (range 4.60 – 5.00; the higher the number, the

better the intervention was thought to fit in with current practices); and System Support: 3.00 (range 2.33 – 4.00; the higher the number, the more support participants felt they would need in order to implement).

Each student participant completed the CURP (Briesch & Chafouleas, 2009), which contained three subscales which were scored on a Likert scale of 1-4. Average student scores for the CURP were as follows: Personal Desirability: 2.69 (range 1.86 – 3.57; the higher the score, the more the students liked the intervention); Feasibility: 2.13 (range 1.25 – 3.63; the higher the number, the more difficult the student found the intervention; and Understanding: 2.17 (1.33 – 3.00; the higher the score, the more the student felt he or she understood the intervention).

During the interview conducted by a researcher, the teacher and paraprofessionals reported understanding the intervention very well and agreeing with it philosophically but suggested that it was meant for a general education classroom, that it was too "one size fits all" and that their students were not "on-board". They reported knowing that they made mistakes but feeling confident about their ability to implement, and they reported feeling sufficient support from the researchers. It should be noted that this could be due to a social desirability bias, which is the tendency for respondents to answer questions in ways they think are "correct" or desired by the questioner (Fisher, 1993), as the person who conducted the interview was the same person who had trained them on the intervention. Participants further reported that their biggest difficulty was student "buy-in" and that if they had been able to start it from the first day of school, before routines were set, that they would have foreseen more success. Notably, despite teacher and paraprofessional reports that the intervention had not been a good fit for their students, they were still using the good behavior/reductive consequence dice game even after the

research study was over for two of the students, because those two students continued to request it after the end of the intervention.

Discussion

This study was designed to determine which component of the Precision Request most contributed to increasing compliance in students with EBD. Low implementation fidelity prevented the Precision Request from having any discernible effect upon general compliance levels. We found that our original questions, which included a) which step in the Precision Request procedure is responsible for the greatest improvement in compliance?, and b) what is the earliest step in the Precision Request procedure which produces an acceptable (i.e., 80% or higher) rate of student compliance?, could not be answered. We then turned our attention toward a comparison of the two studies (Calder, 2017, and the present study) which have examined the effect of the Precision Request on noncompliance in students with EBD, and which yielded very different results. We added a third, ex post facto research question: how are interventionist characteristics related to high fidelity implementation of the Precision Request?

Comparison of Studies

Student/setting comparison. We first began by comparing the student participants and setting. We found remarkable similarities here. The two studies, in fact, were both conducted in classrooms for students with EBD at schools located within just a few blocks from one another.

Training comparison. We then examined the training procedures of the two studies. Both utilized a similar style (PowerPoint slide instruction followed by modeling, rehearsal with practice scenarios, and feedback). The teacher participant in Calder's (2017) study attended one training for approximately two hours and required two contacts from the researcher (one text and one in-person) in order to achieve high levels of fidelity in implementation. Calder's (2017)

study did not include training for paraprofessionals. Participants in the current study (both the teacher and the paraprofessionals) spent a cumulative total of approximately one hour and 45 minutes in training and received eight contacts by text and between five and seven in-person contacts with feedback.

Though the current study used the same method for training as did Calder (2017), the content was delivered in three trainings which detailed the implementation of the Precision Request one step at a time. Thus, the participants in the current study had less content to master per training than did the participant in Calder's (2017) study, who had to master the entire procedure in one training. This prompts the consideration that the Precision Request may not lend itself well to being taught in segments. The participants may not have accessed the reinforcement of having the procedure effectively reduce noncompliance early enough in the study to provide them with the enthusiasm to continue implementing with fidelity. In summary, the teacher and paraprofessional participants in our study attended training time for approximately the same total time as did the participant in the Calder (2017) study but received significantly more contacts by the researcher and more feedback both by text and in person.

Interventionist characteristics. After determining that the student participants and setting were relatively similar in both studies, and that training (both total time and quality) was similar in both studies, we then examined and compared the adult participants of both studies. Because the Calder (2017) study included only the teacher and our study included both teacher and paraprofessionals we will hereafter refer to any adult who delivered the Precision Request as the interventionist.

We found several significant differences between the interventionists in the two studies. First, the teacher participant from Calder's (2017) study was special education certified, had

more teaching experience both in total number of years and in the classroom for students with EBD, and was using both positive reinforcement (rewards) and reductive consequences before the beginning of the study. In contrast, our teacher participant had a general education background, was in her first year of teaching in a classroom for students with EBD and was using neither rewards nor reductive consequences with her students prior to our study. The participant in Calder's (2017) study also had higher baseline student compliance and greater use of teacher praise than did our participants. These comparisons suggest that (a) the Precision Request may be easier to implement for a teacher who is familiar with behavioral principles, or (b) the Precision Request may be more effective in classrooms which already utilize such behavioral interventions as positive reinforcement, teacher praise, rewards, and reductive consequences.

Secondly, our study included paraprofessionals whereas Calder (2017) did not. It is possible that including paraprofessionals with the teacher in the trainings could have caused each interventionist to feel less responsible for mastering the intervention as training was not focused on one person alone. Indeed, two of the three paraprofessionals (both of whom were in their first year as para-educators) were observed delivering the Precision Request on only a few occasions throughout the entire study, and were never observed delivering it accurately, despite having demonstrated understanding in practice scenarios which occurred during training.

After determining that meaningful differences could be found between interventionists from the two studies, we examined the fidelity of implementation which occurred in phases B, C, and D of the current study.

Implementation Fidelity

The interventionists in this study first showed some difficulty implementing alpha commands in phase B, though after text message feedback, they were able to twice obtain 100% correct implementation. One possibility for this success may be due to the simplicity of the training and implementation requirement, which called only for them to change from using beta commands to alpha commands. Another possible explanation for the relative success of implementation in this phase is that it occurred at the beginning of the study, when the interventionists may have had more eagerness or determination to implement the procedure.

In phase C, despite receiving feedback, being given opportunities to ask questions and discuss problems in the second training, and further practice through role play, interventionists were never able to reach acceptable levels of implementation (i.e., 80% or higher). This could be due to the fact that there were more steps to implement and more opportunities for error (e.g., forgetting to praise, not using the second "need" command, using a beta command instead of an alpha command). In phase D, interventionists continued to receive feedback, opportunities for role playing, and discussion in the final training, and were additionally given a poster of the Precision Request flowchart to refer to in their classroom. In this phase average correct implementation was slightly higher, which might suggest that with more time to practice, it became easier to implement, however, the interventionists still never achieved higher than 60% fidelity in any one session. Though there were a few sessions in phase B of the study with acceptable implementation fidelity, these sessions did not necessarily correspond with the highest compliance days. It is possible that the extreme variability in percentage of correct implementation which was encountered in every phase may have prevented the students from benefitting from the intervention enough to improve compliance levels.

Carroll, Patterson, Wood, Booth, Rick, and Balain (2007) suggested that certain facilitation strategies, including the use of manuals, training, monitoring, and feedback, can optimize implementation fidelity. In this study, frequent training, monitoring, and feedback were used in order to provide the best possible scenario for correct implementation. Carroll et al. (2007) further stated that the use of these strategies does not necessarily equate to better implementation and cited quality of delivery and participant responsiveness as two potential moderators of the relationship between an intervention and implementation fidelity. Here, we examine potential factors related to participant responsiveness which include (a) a lack of behavioral training, (b) the absence of foundational classroom procedures, and (c) a philosophical orientation which is not conducive to behavior analysis.

Lack of behavioral training. The interventionists in the current study had no formal special education background, nor did they have experience working with students with EBD. A typical classroom scenario would begin with the teacher delivering to a student a beta command such as “Do you want to get your math book out now?” followed by the student ignoring the teacher. The teacher would follow with several appeals for the student to “Tell me what’s wrong” which would also be ignored. The teacher would then say, “I’ll get your book out for you if you will just do your math.” This would be followed by more silence from the student and the teacher would eventually walk away. After several minutes the student would either get up and go hug the teacher, and the request to get out the math book would never be revisited, or eventually get out her math book on her own, but this was almost never praised or acknowledged by the teacher and the book would sit, unopened, on the desk for the remainder of the math period. This scenario suggests that the teacher has limited understanding of basic principles of behavior modification such as antecedent variables, positive reinforcement, and the concept of

attention- and escape-maintained behavior. We propose that all teachers working with students with EBD receive training in and implement the basics of behavior management such as the use of alpha commands (Forehand & Scarboro, 1975; Peed et al., 1977; Roberts & Powers, 1988; Schoen, 1986; Starkweather-Lund, 2001; Williams & Forehand, 1984), positive reinforcement (Conroy, Sutherland, Snyder, Al-Hendawi, & Vo, 2009), and functional behavior assessment (Scott, Anderson, Mancil, & Alter, 2009) in order to respond appropriately to problem behavior in the classroom.

Foundational classroom procedures. During baseline data collection no reductive consequences were being given for noncompliance and no rewards were given for compliance. Verbal praise was minimal to nonexistent and limited to general statements relative to academic work (e.g., "That's right"). No students were earning or losing points, and no students used a token system. When questioned by researchers about the existence of behavior intervention plans for the students, the teacher and paraprofessionals indicated never having heard of them. In a context such as this, the gap between current classroom procedures and the practices required by the Precision Request may have been too wide to achieve meaningful change. We suggest that before implementing a multi-component behavioral intervention such as the Precision Request, teachers working with students with problem behavior receive training on and implement positive behavior supports such as copious verbal praise (Atwater & Morris, 1988; Eyberg et al., 1995; Schutte & Hopkins, 1970), positive reinforcement procedures such as a system of rewards (e.g., tangible rewards, free time, teacher, peer, or administrator recognition; George, Kincaid, & Pollard-Sage, 2009), and, again, that they utilize functional behavior assessment (Scott et al., 2009) to appropriately address the correct function of the problem behavior and implement behavior intervention plans based upon accurate data.

Philosophical orientation. Although the teacher did not mention specifically disagreeing with behavior analytical theory, her reactions toward student noncompliance suggested that her philosophical orientation was a barrier to implementation of the Precision Request. She frequently entreated the students to "tell me what's wrong today" when they were noncompliant with directions, despite the fact that it was never observed through the study that any of the students responded to that statement by talking to her about their problems. She reported to researchers at the end of the study that it was important to her that the students were able to talk openly about their problems with the teacher, due to difficult circumstances in other settings, such home life. This may have been appropriate in other circumstances, (e.g., during an emotional skills therapy session) but was, in fact, contributing to successful escape from academic work for the students. The teacher also reported that the Precision Request might be appropriate for kids in "regular" classrooms but that her students were different. On more than one occasion the teacher and paraprofessionals reported that in terms of reinforcement, their students "didn't like anything" and "didn't care about any consequences" they might give. Statements such as these suggest that the interventionists may have believed that there was something inherently wrong or different about their students that prevented their efforts from having any effect upon student behavior, and that any change would need to come from an internal desire in the student to change his or her own behavior.

Student Characteristics

Student characteristics may have also played a role in the difficulty encountered by the interventionists when implementing the Precision Request in this study. The interventionists reported that they felt the Precision Request intervention was not tailored to individual student needs. This may possibly be supported by the fact that two of the five students did rate the

intervention favorably in the social validity questionnaire, while the other three rated it as very undesirable. It is also a possibility that because the students had spent nearly the entire school year in a setting with little demand, little to no praise, and few rewards or reductive consequences, the implementation of the Precision Request was too demanding of student change to be feasible. This student feedback should be interpreted cautiously, as the Precision Request was never implemented with enough fidelity for students to experience the intervention as intended.

Systems Change

The difficulty that teachers encountered in correctly implementing the Precision Request in this study reflects some of previous research which indicated that teachers found the Precision Request too difficult to implement (Kehle et al., 2000). This prompts a consideration of the concept of *readiness to change* described by Peterson (2013) which he defined as "the developmental process in which a person, organization, or system increases the capacity and willingness to engage in a particular activity" (p. 44). This perspective, also known as a *systems change* perspective, rejects the notion that any one individual intervention, even if evidence-based, will be effectively implemented in an environment that lacks an appropriate context for change. Carr et al. (2002) wrote that "the best technology will fail if it is implemented in an uncooperative or disorganized context" (p. 8) and that "meaningful change is possible only if systems are restructured in a manner that enables change to occur and be sustained" (p. 9). A number of variables can contribute to the level of difficulty encountered by teachers when they attempt to implement practices which are evidence based, including level of education or experience, cultural beliefs, attitudes, and the gap between current procedures and the new intervention being implemented (Aarons, 2005; Reichow, Boyd, Barton, & Odom, 2016).

Research in the field of education and behavior analysis often tends to focus on what works and for which students by recommending practices which have been shown to be effective, however, little is said of the characteristics and qualifications the interventionist (i.e., teacher, therapist) must possess in order to effectively implement practices which are evidence-based. A comparison of the interventionists who participated in Calder (2017) and the current study provides an interesting insight into the potential predicament that can emerge when practices are recommended to interventionists without regard to characteristics relative to the context or interventionists themselves.

Social Validity

Social validity scores obtained from the URP-IR (Briesch et al., 2013; Chafouleas et al., 2009) indicate some interesting findings. It is important to note that interventionist responses were extremely consistent (within less than half a point across all responders for Acceptability, Understanding, Feasibility, and System Climate), suggesting that the teacher and paraprofessionals felt similarly about the intervention and their ability to implement it. The highest score received was that of Understanding. Examples from the URP-IR which examine Understanding include: “I am knowledgeable about the intervention procedures” and “I understand how to use this intervention”. Similar responses were received in the interview, where participants reported understanding how to implement the intervention and indicated no desire for additional support. Further, the responses recorded on this subsection were higher than that of those recorded in the Calder (2017) study, wherein the Precision Request intervention was successfully implemented. This suggests that the participants’ inability to correctly implement the Precision Request was not due to a lack of training or feedback, but rather due to an inability

to correctly implement (a) because of a philosophical disagreement, or (b) due to an inability to perceive that they were unsuccessful in implementation, despite feedback from researchers.

With regard to the student reported CURP (Briesch & Chafouleas, 2009), though the average feasibility score was nearly identical to that reported in Calder (2017), both the Personal Desirability and Understanding scores were significantly lower. This could suggest that students disliked the intervention or did not understand what was being asked of them due to the teacher's inability to explain each phase using the provided script. Two of the five scores reported under "Desirability" on the CURP were very high, while the three others were very low, suggesting the possibility that the intervention was a good fit for some students, but not others.

An important note to acknowledge is that one of the critical features of social validity is that the intervention produces desirable treatment outcomes (Foster & Mash, 1999). Excellent ratings received on social validity reports are immaterial if an intervention fails to be useful to its recipients due to lack of correct implementation.

Limitations

Several limitations influenced the interpretation of the data gathered in this study. The most significant was that although possible explanations can be drawn to explain the success of the Precision Request in the Calder (2017) study based on interventionist characteristics, and the subsequent failure of implementation in the present study based on a difference in those characteristics, these explanations can only be speculation. This study was designed to test the effect of the components of a Precision Request on student compliance and no experimental control was gained nor was any functional relation found.

In addition, data collection was limited to what could be both seen and heard by data collectors. The camera was positioned to be able to view most of the room but there were

instances where an interventionist directive was given, and student behavior could not be heard or observed. Additionally, at times conversation was very quiet at tables and the data collectors could not always hear if Precision Requests were being given. Data were collected on all requests given by all interventionists, and two or more requests occasionally happened at the same time. Thus, compliance rates and/or praise and reductive consequence counts could have been higher or lower than what was collected by researchers.

Another limitation was that the researcher responsible for training was the same person that collected social validity data and conducted the post-intervention interview. Responses from participants may have shown a social desirability bias. In addition, implementation fidelity tended to be at its highest on days just prior to the researcher arriving for the next training, suggesting that participants were attempting to "please" the researcher by implementing well, but may have decreased their efforts in implementation while being recorded via the Kubi system.

Having the data collected by a researcher could have been a limitation to this study. A 2015 study by Lane and colleagues found that teachers and paraprofessionals could function as both primary data collectors and interrater reliability data collectors while implementing instructional choice procedures in an inclusive first-grade classroom with high fidelity. They found that by providing a procedural checklist, the interventionists were able to accurately implement and record procedures as well as correct themselves and each other according to the checklist provided. The current study involved a researcher-completed procedural checklist for treatment integrity but did not provide that checklist for the interventionists to use when implementing the Precision Request.

Lastly, including the paraprofessional participants may have resulted in less effective training and implementation. Trainings had to be kept shorter than originally planned because

paraprofessionals were not typically used to staying after their contracted time and often needed to rush off to attend to personal errands after school, which limited the time available for practice and questions. Additionally, the paraprofessionals may not have been as invested as was the teacher in the study. The lowest student compliance day of all the sessions was the only day the teacher was absent during the study. Implementation fidelity this day was at its second to lowest rate. This suggests the possibility that the teacher had the most authority over both student and paraprofessional behavior.

Implications for Future Research

Findings from this study indicate that interventionists may need to possess some philosophical and practical foundations in their practice before they are able to effectively implement the Precision Request. Future research should focus on comparing interventionists' abilities to implement behavioral strategies with differing amounts of previous skill and knowledge. An interesting note in this study is that the only component of the intervention that the participants continued to use was the good behavior (reductive consequence) game that they had helped create. Future research could examine whether participant input is related to high fidelity of implementation. Additionally, this study was conducted in a self-contained classroom for students with EBD. Future research could examine whether the Precision Request is helpful as a general education strategy. Future studies could also examine the extent to which feedback, coaching, and other forms of training affect participants' ability to implement behavioral strategies (i.e., what level of support is needed to achieve high implementation fidelity). Finally, as demonstrated by Lane et al. (2015), future research could examine the use of interventionists themselves as primary data collectors and interrater reliability data collectors and the extent to which this improves implementation fidelity outcomes.

Implications for Practitioners

The difficulty that participants experienced in implementing the Precision Request in this study suggests that it may be more prudent to implement foundational classroom procedures such as the use of alpha commands, high rates of quality BSP, and reward and consequence systems prior to attempting to implement a multi-component behavioral intervention. Additionally, interventionists should attempt to gain an understanding of such concepts as positive reinforcement and the ways in which behavior is maintained by attention and/or escape prior to implementation of a complex packaged intervention. If compliant behavior is being partially maintained by these foundational procedures, an intervention such as the Precision Request may be able to provide additional support in maintaining classroom compliance.

Conclusion

This study was unable to answer our original research questions regarding the components of the Precision Request, and we can make only general inferences about the relationship between interventionist characteristics and high fidelity of implementation. A comparison of characteristics between two groups of interventionists implementing the Precision Request, and their relative success and failure, suggests that an interventionist may need to possess certain skills or training before implementation of the Precision Request with high fidelity is feasible. Further, researchers and practitioners may need to more closely examine the fit of an intervention with regard to the interventionist's skill level, training, and philosophical orientation prior to selecting it as a method of use. Finally, when advocating practices, reputable teacher sources may need to include information on interventionist prerequisites rather than making across-the-board endorsements of any one intervention. An intervention is only useful if

the interventionist possesses the necessary skill and supports to implement with enough fidelity to produce a change in student behavior.

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APPENDIX A

Review of Literature

This review begins with a discussion of noncompliance and its implications in classrooms for students with EBD. Then follows a description of a behavioral intervention which is designed to reduced noncompliance, the Precision Request, and an in-depth summary of each of its components: the alpha command, praise, and reductive consequences. Research supporting the Precision Request is then presented, followed by a brief conclusion.

Noncompliance

Noncompliance is one of the most problematic and pervasive concerns in classrooms. Johansson (1971) observed that noncompliance can include almost any type of deviant behavior, and that it refers to the refusal to complete a request made by another person. Kalb and Loeber (2003) more specifically defined noncompliance as "those instances when a child either actively or passively, but purposefully, does not perform a behavior that has been requested by a parent or other authority figure" (p. 641).

Managing noncompliance in the classroom can be a considerable burden for teachers. According to the National Comprehensive Center for Teacher Quality's (NCCTQ) Effective Classroom Management publication (Oliver & Reschly, 2007), "The ability of teachers to organize classrooms and manage the behavior of their students is critical to achieving positive educational outcomes" (p. 1). These authors further state that teachers who have difficulty managing classroom noncompliance are often ineffective as instructors and report high levels of stress, as well as "burnout". Ingersoll and Smith (2003) reported that student discipline problems, including noncompliance, were the second leading cause (next only to insufficient salary) of teachers indicating dissatisfaction with their profession, which led to them leaving their jobs.

Another problem associated with classroom noncompliance is reduced time for academic instruction. When teachers spend excessive amounts of time addressing concerns with noncompliance, precious instruction time is lost (Belfiore, Basile, & Lee, 2008). Greenwood (1991) found that time spent in noncompliant or off-task behavior occupied as much as 15% to 25% of class time in first- through fourth-grade classrooms in urban school districts.

In addition to concerns regarding classroom management, teacher burnout, and instruction time, noncompliant behavior in students can be problematic for the students themselves. Axelrod, Bellini, and Markoff (2014) observed that lack of compliance to adult instruction impedes positive interactions with peers and adults and can contribute to lack of successful integration in the school and community. Other potential concerns associated with child noncompliance, as indicated by these authors, are increased risk of physical injury, stressful interactions and relationships with others, reduction of ability to participate in structured activities such as games, sports, and outings with peers, and disruption of academic progress due to inability to follow classroom rules and procedures.

Students who display high levels of noncompliance are also at an increased risk for psychiatric problems (Kalb & Loeber, 2003), aggression and externalizing behaviors (Keenan & Shaw, 1994), and adolescent delinquency and norm-breaking behavior (Hämäläinen & Pulkkinen,1996), all of which can lead to long-term negative consequences. For example, Keenan and Shaw (1994) found that noncompliance at 10 months of age predicted aggression six months later and the study further concluded that aggressive behavior patterns in early childhood were highly stable into adolescence and adulthood. Hämäläinen and Pulkkinen (1996) similarly reported that noncompliance and aggression at eight years of age was correlated with aggression and norm-breaking behavior at 14 years of age. Further, children who were seen as noncompliant

by their parents and teachers at the beginning of the study were four times more likely to be considered delinquent in adolescence.

Kalb and Loeber (2003) asserted that child noncompliance is one of the most frequent reasons for referral of young children to psychiatrists. They found that parent reports of child noncompliance as a frequent or severe problem ranged from 65% - 92% for those children who had been referred for psychiatric services, while parent reports of child noncompliance as a frequent or severe problem ranged only from 1% - 9% in a non-referred population.

Students with Emotional/Behavioral Disorders

Noncompliance rates can be particularly high among students with Emotional/Behavioral Disorders (EBD). Landrum, Tankersley, and Kauffman (2003) asserted that noncompliance is one of the most challenging and far-reaching behaviors frequently demonstrated by students with EBD. Landrum et al. further stated that students with EBD, by definition, have disproportionately high rates of inappropriate behavior and low rates of positive behavior when compared to students without problem behavior. Students with EBD experience less school success than any other group of students, either with or without disabilities. They typically earn lower grades, are retained in a lower grade level more often, fail more courses, have lower scores on competency tests, and have more difficulty adjusting to adult life than do their peers with other disabilities (Frank, Sitlington, & Carson, 1995). One review found that children with conduct disorders (a sub-type of EBD) faced a higher risk of experiencing all types of life problems (e.g., academic difficulty, relationship problems, difficulty obtaining and performing well in employment, substance abuse, mental health issues, etc.) in adolescence and adulthood than did children with no disabilities or those who had other childhood disorders (Robins, 1979).

Research suggests that improving a child's compliance with adult instructions can simultaneously reduce problem behaviors in other domains (Axelrod et al., 2014; Corrigan, 2006). Corrigan (2006) called compliance a "keystone behavior" and indicated that it could be used as a predictor of overall behavior. Wells, Forehand, and Griest (1980) found that parent training which targeted reduction of noncompliance was not only effective in reducing noncompliance but also reduced problem behaviors that were not targeted for treatment, such as tantrums and physical and verbal aggression. These findings suggest that increasing compliance in the classroom could promote other positive behavioral changes in children with EBD.

The Precision Request

One suggested intervention for noncompliant behavior in the classroom is the Precision Request. It has been recommended by several sources, including the Tough Kid Book (Rhode, Jensen, & Reavis, 2010), The Utah Least Restrictive Behavior Intervention Manual (USOE Task Force, 2015), Vanderbilt Special Education compliance recommendations ("Tip Sheet: Compliance Strategies", n.d.), interventioncentral.org (Wright, 2014), and authors of several books and articles (Forehand & McMahon, 1981; Landrum et al., 2003; Mackay, McLaughlin, Weber, & Derby, 2001; Yeager & McLaughlin, 1996). This intervention, designed to increase compliance to requests, has been suggested specifically by Landrum and colleagues (2003) as an effective intervention for students with EBD. A Precision Request is a directive that (a) uses a consistent discriminative stimulus and is thereby predictable for students, (b) incorporates consequences, including reinforcement for compliance and punishment for noncompliance, and (c) provides wait time for the child to comply (Landrum et al., 2003).

The Precision Request is made up of three general components: alpha commands, which include the "please" and "need" requests, praise, and reductive consequences.

Alpha commands. The first component of the Precision Request is the alpha command. Forehand et al. (1979) defined alpha command as "an order, rule, suggestion, or question to which a motoric response is appropriate and feasible" (p. 7). Examples might include: "Put on your shoes," "Pick up the ball," and "Come here." Forehand and colleagues identified a second type of directive, beta commands, which are commands which do not allow the child an opportunity to demonstrate compliance. Examples include (a) commands which are so vague that correct action for compliance cannot be accurately determined (e.g., "Hey, knock it off!"), (b) commands which are interrupted by further comment from the giver before enough time has elapsed for the child to comply (e.g., "Sit down. I said, 'Sit down!' Why are you always out of your seat?"), and (c) commands in which the giver carries out the response before the child has time to comply ("Quit climbing on that!" followed by removal of the child from the table to the floor). Beta commands have been shown to have the opposite effect of alpha commands by increasing the likelihood of noncompliance (Forehand & Scarboro, 1975; Peed, Roberts, & Forehand, 1977; Roberts & Powers, 1988; Schoen, 1986; Starkweather-Lund, 2001; Williams & Forehand, 1984).

In a book titled *Helping the Noncompliant Child,* Forehand and McMahon (1981) list several characteristics necessary for the delivery of alpha commands:

1. Alpha commands are specific and direct, with the parent, teacher, or authority figure first obtaining the child's attention, by calling him or her by name, using a firm, though not angry, voice. The purpose of this is to signal to the child a discriminative cue, as opposed to any other type of verbalization typically made by the adult. The command should be phrased positively, or in other words, as a "do" rather than a "don't" or "stop" command. The command should be succinct, and language should

be used which matches the child's level of understanding. Gestures such as pointing may also be used simultaneously.

2. Alpha commands are given one at a time.
3. Alpha commands are followed by a wait time of five seconds, with no other additional directives or verbalizations given until either the child complies, or five seconds have passed.

Forehand et al. (1979) trained parents in the use of alpha commands to increase compliance and found that child compliance to alpha commands occurred 78% of the time during treatment, while child compliance to total commands (alpha plus beta) occurred only 30% of the time. Starkweather-Lund (2001) used a multiple baseline across subjects design to evaluate the effect of teachers' delivery of alpha commands on student compliance. When alpha commands were delivered to three different students who exhibited low rates of compliance in a general education classroom, compliance rates increased 7%, 15%, and 17% for each of the students, respectively. A phase measuring delivery of alpha commands plus verbal praise was then added, and compliance rates increased a total of 17%, 28%, and 23% from baseline levels for each of the three respective students.

Precision Requests use consistent and predictable alpha commands with the discriminative cues, "please" and "need" in order to maximize the likelihood of compliance. These commands are succinct, clear, firmly delivered, and positively stated. Wait time is a crucial component of the delivery of a Precision Request, but can be expanded from Forehand and McMahon's (1981) suggestion of five seconds to a range of three to 10 seconds to account for individual differences in teacher temperament and instruction, circumstantial events, and type of student behaviors which are or are not in occurrence.

Praise. The second component of the Precision Request is praise. Cavanaugh (2013) defined praise as "verbal acknowledgement of expected appropriate social or academic behavior exhibited by students" (p. 113). Examples include "You got it right!" and "I like the way you are working." Verbal praise from parents and teachers has been correlated strongly with high rates of compliance (Atwater & Morris, 1988; Eyberg, Boggs, & Algina, 1995; Schutte & Hopkins, 1970), and has been shown to be effective both alone and in combination with other behavior modification procedures (Starkweather-Lund, 2001).

Carr and Durand (1985) offered a definition which specified that verbal praise is contingent upon a targeted behavior. According to these authors, praise is "any form of verbal approval delivered contingent on correct responding to a task...or contingent on general cooperative behavior" (p. 115). Markelz and Taylor (2016) similarly wrote that effective praise "specifies particulars of the behavior that is to be reinforced" (p. 3) and termed this type of praise behavior-specific praise (BSP). Examples of BSP are "I like how you are working quietly at your desk," "Nice job holding your pencil the right way," and "Way to line up quickly!" Forehand and McMahon (1981) referred to this same concept as "labeled verbal rewards" and proposed that this type of reinforcement is the most appropriate for increasing acts of compliance in children. These authors stated that most parents and teachers are more comfortable with giving out unlabeled verbal rewards such as "Good job," "Terrific!", and "I like that," rather than labeled verbal rewards, or BSP. However, the use of unlabeled verbal rewards might not provide clear enough feedback for children to know which behavior previously engaged in is being praised.

Chalk and Bizo (2004) evaluated the effect of BSP versus general positive praise (unlabeled verbal rewards) on four different classrooms containing students between eight- and nine-years old. Two teachers were instructed to use "specific praise" and two teachers were

instructed to use "positive praise." The study found that BSP promoted more on-task behavior than did positive praise, and the use of BSP also significantly increased children's perceptions of themselves as academic learners. The "Myself-As-Learner" Scale (MALS), a 20-item scale which contained self-referring statements designed to measure students' perceptions of themselves as learners and problem solvers, was completed by students at both baseline and final observation during both the specific praise and general positive praise conditions. Students showed significant increases in academic self-concept during the specific praise condition. These increases were not shown during the general praise condition. This finding suggests that the use of BSP may have positive effects beyond promoting general compliant and on-task behavior.

Despite substantial research supporting the use of verbal praise in the classroom, studies have shown that students with EBD are frequently involved in negative interactions with their teachers and that those students who display more severe disruptive and noncompliant behaviors are less often praised than their peers with more moderate behavior problems (Cavanaugh, 2013; Markelz & Taylor, 2016). In direct observations of 20 classrooms containing students with EBD, teachers and students were engaged in negative interactions for more than 20% of the time observed, and positive interactions accounted for less than 5% of the time that elapsed (Jack et al., 1996). In another study, 206 students identified by their teachers as "at-risk" for aggression were placed into two groups: mid-risk and high-risk. Observations of these groups indicated that the mid-risk group received teacher praise at a mean rate of 1.4 per hour and received reprimands twice as often. The high-risk group received praise at a mean rate of 1.2 per hour, with teacher reprimands at nearly four times the rate of praise (Van Acker, Grant, & Henry, 1996). Nelson and Roberts (2000) found that students with behavioral difficulties received at least six times the amount of reprimands and lower amounts of praise than did their typically developing peers.

These studies suggest that what is occurring in classrooms for children with behavioral difficulties may be in direct contrast to what is accepted as best practice. A common suggestion for rates of praise to correction or reprimands is four to one (Walker, 1995). Although students with the most severe behavioral difficulties are likely in the most need of high rates of praise, these studies show that rates of praise actually decrease in proportion to the severity of the behavioral difficulties displayed by students. This could perhaps be due to the fact that students with the most severe behavioral disorders are less likely to comply frequently with teacher requests, and if teachers are praising contingent upon desired behaviors, there may be few opportunities for this praise to occur. The use of the Precision Request to deliver both alpha commands, which can increase the likelihood of compliance to teacher requests, and verbal praise, which can reinforce this student compliance, is a possible solution to this dilemma.

Reductive consequences. The third component of the Precision Request is reductive consequences. A reductive consequence is a stimulus or procedure which is intended to reduce a given behavior when applied. It differs from a punisher in that a punisher must decrease the rate of the behavior for which it is delivered in order to be classified as such. When reductive consequences are delivered, they are intended to act as punishers by reducing problem behavior, but the giver may not know for certain whether the stimulus applied is, in fact, punishing. Examples of reductive consequences may include loss of points, removal of a preferred item, or a phone call home to parents.

Pfiffner and O'Leary (1987) found that the use of reductive consequences was necessary to maintain acceptable levels of on-task classroom behavior in eight first through third graders with behavioral and/or academic problems. When a classroom system using only positive consequences (verbal praise, bonus work, and public posting of completed work) was

implemented and all reductive consequences were removed, the mean rate of on-task behaviors dropped from 77% to 41%. The addition of reductive consequences (verbal reprimands) resulted in an immediate increase in on-task behavior that remained stable for the remainder of the condition at a mean rate of 80%. The subsequent removal of reductive consequences again produced an immediate decrease in the rate of on-task behavior for six of the eight children. Rosén, O'leary, Joyce, Conway, and Pfiffner (1984) found that the combined use of positive reinforcement and reductive consequences was associated with the highest levels of on-task behavior. Withdrawal of reductive consequences caused an immediate and dramatic decrease in the rate of on-task behavior, from a mean rate of 75% before withdrawal to a mean rate of 35% after removal of the reductive consequences. Further, an increase in aggressive behavior was observed when reductive consequences were removed.

Kelley and McCain (1995) studied the effects of school-home notes and response cost (a reductive consequence) on the academic engagement of five children who displayed inattentive and disruptive behaviors. In the school-home note phase, consequences were delivered by the parent when the child arrived home at the end of the school day. When the response cost procedure was added, the teacher would ask the student to cross out one smiley face (five were available each day) for each off-task or disruptive incidence. It was found that the percentage of time these students were on-task was greater when response cost procedures were added than during the school-home note intervention only. Two possible explanations for this finding include the increased amount of feedback and the immediacy of the reductive consequence delivery during the school-home note and response cost phase.

Some studies have found contrasting results when implementing combinations of verbal praise and reductive consequences. For example, Thomas, Becker, and Armstrong (1968)

examined one elementary school classroom and found that when teacher approval was removed and reductive consequences were maintained, an increase in disruptive behaviors occurred in a classroom containing “good students.” Madsen, Becker, and Thomas (1968) found similar effects when implementing the same contingencies with a classroom of students with behavior problems. These studies suggest that teacher praise is most effective at maintaining on-task behavior. However, the application of reductive consequences was supported when Acker and O'Leary (1987) found that the use of reprimands only in a classroom of children with academic and behavioral difficulties was associated with high levels of on-task behavior. The addition of praise from the teacher produced no change in the rate of on-task behaviors. The withdrawal of all reductive consequences caused significant decreases in both on-task behavior and academic productivity. The further use of praise alone led to a brief initial increase in on-task behavior followed by a significant decline in on-task performance. The conflicting findings of these studies supports the need for more research on classroom interventions which combine the use of both verbal praise and reductive consequences.

Research Supporting the Precision Request

The Precision Request combines three widely used behavioral interventions: the alpha command, verbal praise, and reductive consequences, all of which are backed by varying levels of research, as a purportedly effective intervention to increase classroom compliance. Despite relatively widespread recommendation of the procedure, research supporting the use of the Precision Request is limited. Mackay et al. (2001) found that the use of Precision Requests reduced the occurrence of in-home noncompliance in a 12-year-old girl diagnosed with severe mental retardation whose communication skills were limited to two-word phrases. When the participant was compliant with parental requests, she was praised and given access to her

favorite stuffed toy. When she did not comply, her toy was withheld for three minutes. Observations conducted each morning during baseline revealed a mean of 7.8 occurrences of noncompliance in a one-hour period of time. By the end of treatment, the mean occurrence for the same length of time was three.

Yeager and McLaughlin (1996) found that the use of a time out ribbon (a ribbon worn by preschool children while they demonstrated compliant behavior and removed for noncompliance) paired with the use of Precision Requests effectively increased compliant behavior in a four-year-old male preschool child. His percentage of compliant behavior increased from a mean of 2.2% in baseline during each 10-minute observation to 54.2% when the time-out ribbon procedure alone was applied. In a subsequent phase the Precision Request was added to the time-out procedure and his mean percentage of compliance further increased to 74.6%.

In a recent study, Calder (2017) determined that the use of Precision Requests, administered by a special education teacher in a self-contained class for students identified with Emotional Disturbance, effectively increased student compliance rates from an average of 74% per session (range 54% - 88%) to levels near or at 100%. Further, average teacher praise statements increased from 9.3 per session (range 2-17) to 36.4 per session (range 32-41). This increase in teacher praise suggests the possibility that increased frequency of praise alone could be responsible for the increase in student compliance. Further, there was always an implicit "threat" of a reductive consequence being delivered as the students were told from the beginning of the study that they would receive a specific reductive consequence for noncompliance. This threat could also have been responsible for improving rates of compliance. As with all studies which have implemented the Precision Request, this study was unable to

clearly account for which component was responsible for the change, or if all were necessary to achieve the desired effect.

Conclusion

Compliant behavior in the classroom is necessary and key in order to maximize instructional time, as well as to ensure that students with EBD are able to build positive relationships with peers and teachers. The Precision Request is a promising intervention for reducing noncompliance in students with EBD. Further research is needed to identify which of the components of the Precision Request is most responsible for improving student compliance. If one or two components is/are as effective as the entire intervention together, it would be most efficient to focus attention on comprehensive training and implementation of only those components which are associated most with acceptable levels of compliant behavior.

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APPENDIX B

Consent Forms

Teacher/Paraeducator Consent

Consent to Participate in Research

Introduction

This research study is being conducted by Christian Sabey, PhD, BCBA-D, Marcie Calder, Collette Merrill, and Danielle Yang at Brigham Young University, Counseling Psychology and Special Education Department. We aim to determine the effect of each component of a verbal reprimand strategy called *Precision Request* on the compliance of students to teacher requests. You were invited to participate because you are a special education teacher in an elementary school and because you expressed interest in participating.

Procedures

If you agree to participate in this research study, the following will occur:

- The researchers will conduct a preliminary (baseline) observation of your class during regular instruction via live-stream video. Observations will be conducted daily and last for 10 to 60 minutes each.
- You will receive training and coaching on implementing each component of the Precision Request, prior to each phase of the study.
- You will be observed using Precision Requests during your regular teaching. These observations will be conducted daily and last for 10 to 60 minutes.
- The researchers will measure your use of each component of the Precision Request and the compliance of the students to these requests in each phase.
- In certain phases of the study you will implement parts of the Precision Request or the whole Precision Request intervention. Following these phases, you will stop using Precision Requests for a short time, and then resume using them again.
- At the end of the study you will complete a questionnaire to measure how well you liked using Precision Requests and how effective you felt they were.
- The total time commitment for this study will be between 270 and 2,370 minutes depending on how long observations last and how many sessions are required.

Risks/Discomforts

Although it is not anticipated that this study will pose any significant risk, all research has some risk. The risks of participating in this research may include (a) the emotional discomfort of adopting a new and unfamiliar practice, (b) the possible emotional discomfort of adopting a practice that does not effectively change behavior, (c) the social stress of being observed while teaching, and (d) the social stress of being observed by someone other than a researcher in this study, should there be a mishap with the observation technology.

To minimize these risks the researchers will (a) ensure that you are well trained to implement the Precision Requests, (b) terminate the study should it be determined that the use of Precision Requests is not having the desired effect on student behavior, (c) use remote technology to make sure the observations are as inconspicuous as possible, (d) maintain all passwords that allow access to the observation technology in a secure and password-protected location.

Benefits

The benefit of participating in this study may include receiving training and coaching on a potentially effective intervention for reducing noncompliance in your class. If the intervention is not effective, there will be no direct benefit to you; however, it will allow the researchers to better understand how Precision Requests influence noncompliance.

Confidentiality

The research data, including consent forms and observation forms, will be kept on a secure cloud-based storage service called Box, which is a HIPPA compliant service. The data will have two layers of password protection; one layer to access the service and one layer to access the file with research data. The researchers will use an alias in the place of your name on any records so that your name will not be on any forms other than this form. Finally, the researchers will use an alias for your name in all meetings and conversations that could be overheard by individuals not directly involved in this research. In compliance with the recommendations of the American Psychological Association, the data will be kept for 7 years and then destroyed.

Compensation

There will be no direct compensation for participating in this study.

Participation

Participation in this research study is voluntary. You have the right to withdraw at any time or refuse to participate entirely without affecting your class, position, or standing in the school, district, or with the University.

Questions about the Research

If you have questions regarding this study, you may contact Christian Sabey at Christian_sabey@byu.edu or 801.422.8361 for further information.

Questions about Your Rights as Research Participants

If you have questions regarding your rights as a research participant, please contact the IRB Administrator at (801) 422-1461; A-285 ASB, Brigham Young University, Provo, UT 84602; irb@byu.edu.

Statement of Consent

I have read, understood, and received a copy of the above consent and desire of my own free will to participate in this study.

Name (Printed): _____ Signature: _____ Date:_____

Parental consent for student

Parental Permission for a Minor

Introduction

My name is Christian Sabey. I am a professor from Brigham Young University. In partnership with Marcie Calder and Collette Merrill, graduate students, and Danielle Yang, undergraduate, I am conducting a research study about how a verbal prompting strategy called Precision Request affects the compliance of students to teacher requests. We are inviting your child to take part in the research because he/she is in the class of a teacher that has volunteered to participate in this study.

Procedures

If you agree to let your child participate in this research study, the following will occur:

- Your child will be observed while the teacher is teaching and using Precision Requests via a secure video feed and data will be collected on his/her compliance with the teacher's requests. Videos will be saved on a secure encrypted and password protected computer that only the researchers will have access to. Names of students and other personally identifiable information will not be collected as part of the data collection.
- At the end of the study the researchers will ask your child to complete a questionnaire to determine how much your child liked the Precision Requests and how effective they were for your child.
- If you choose to withdraw your child from the study, the KUBI recording system will be placed so that your child is out of view. No research data will be recorded for your child.

Risks

Although it is not anticipated that this study will pose any significant risk, all research has some risk. The risks of participating in this research may include mild emotional stress related to a new classroom procedure and being observed by researchers. Additionally, there is a risk of loss of privacy or of being observed by someone other than a researcher should there be a problem with the observation technology. The researchers will minimize these risks by ensuring that the teacher is well trained to implement the Precision Requests to minimize stress. No personally identifiable information (e.g., name, grades, etc.) will be collected about your child, however the recorded sessions may contain information that identifies your child (such as name). These recorded sessions will be securely protected, and only available to research personnel. Additionally, the researchers will use inconspicuous observation methods (i.e., remote observation) and keep all passwords that allow access to the observation technology in a password-protected file.

Confidentiality

The research data, including consent forms and observation forms, will be kept on a secure cloud-based storage service called Box, which is a HIPPA compliant service. The data will have

two layers of password protection; one layer to access the service and one layer to access the file with research data. The researchers will use an alias in the place of your child's name on any records so that your child's name will not be on any forms other than this form. Finally, the researchers will use an alias for your child's name in all meetings and conversations that could be overheard by individuals not directly involved in this research. In compliance with the recommendations of the American Psychological Association, the data will be kept for 7 years and then destroyed. Observation recordings will only be used for data transcription purposes and will only be viewed by research personnel.

Benefits

There are no direct benefits for your child's participation in this project. However, this research could be a meaningful contribution to special education. The purpose of this research is to better understand a specific intervention, the Precision Request, and its effectiveness in improving classroom management.

Compensation

There will be no compensation for participation in this project.

Questions about the Research

Please direct any further questions about the study to Christian Sabey at Christian_Sabey@byu.edu or 801.422.8361.

Questions about your child's rights as a study participant or to submit comment or complaints about the study should be directed to the IRB Administrator: Brigham Young University, A-285 ASB, Provo, UT 84602. Call (801) 422-1461 or send emails to irb@byu.edu.

You have been given a copy of this consent form to keep.

Participation

Participation in this research study is voluntary. You are free to decline to have your child participate in this research study. You may withdraw your child's participation at any point without affecting your child's grade/standing in school, treatment, or benefits, etc.

Child's Name: _____

Parent Name:_____ Signature: _____ Date: _____

APPENDIX C

Data Collection

Coding Instructions

Dependent Variables

Percent Compliance:

- Collect Y/N – Did the student comply with the directive?
- Include only requests made to a single student (no group requests)
- Include requests made by any adult in the room but do not include requests made to student "N" or student "B"
- Code any statement made by an adult which is intended to initiate or terminate a student behavior (e.g., "Do you want to get out your math book?", "Come over here," "Do you have permission to do that?")
- Code as one request if less than 10 seconds between repeating same directive; code as two requests if more than 10 seconds.
- Calculate percentage of compliance by adding requests complied with, then dividing by total requests.

Latency:

- How many seconds until INITIATION OF compliance?
- Code 1 second for immediate compliance
- Code real time seconds from 1-10
- Code 10 seconds for compliance that happens after 10 seconds or never happens
- Calculate average latency per session by adding up all latency to requests then dividing by total number of requests

Verbal Praise:

- Code all (behavior specific or general; e.g., "Perfect!", "Thanks," etc.)
- Take a total tally

Reductive Consequence:

- This only applies in Phase D
- Take a total tally of reductive consequences applied (i.e., giving a checkmark)
- You may not see or hear this sometimes; they collected it on a sheet of paper. Just mark what you see

Also collect implementation fidelity (Phases B, C, and D only)

- Tally whether correct or incorrect, then calculate percentage correct
- Any teacher statement intended to initiate or terminate a student behavior is counted as an INCORRECT delivery, but is still counted as a request

Phase B correct implementation:

"Please _____" followed by wait time of 3-10 sec

Phase C correct implementation:

"Please _____" followed by wait time of 3-10 sec; praise for compliance, or, for noncompliance then "You need to _____" followed by praise for compliance

Phase D correct implementation:

"Please _____" followed by wait time of 3-10 sec; praise for compliance, or, for noncompliance then "You need to _____" followed by praise for compliance and delivery of a reductive consequence for noncompliance.

Example:

Teacher: "Go grab your math book"

Student: [ignores] 3 seconds transpires

Teacher: "Do you want to grab your math book?"

Student: "No"

<u>This would be coded:</u>

*Tally NO for compliance (coded as one request only because less than 10 seconds between utterances of same request)

*Latency is 10 seconds (always 10 seconds for no compliance)

*No tally for praise

*No tally for reductive consequences

*Tally INCORRECT for implementation fidelity

Example:

Teacher: "Please get out your math book"

Student: [wanders room for 9 seconds then walks toward desk and gets math book at the 11 second mark]

Teacher: "Thanks"

<u>This would be coded:</u>

*Tally YES for compliance (student initiated walking over to get book before 10 second mark)

*Latency is 9 seconds

*Tally 1 for praise

*No tally for reductive consequences

*Tally CORRECT for implementation fidelity

APPENDIX D

Training Materials

Training PowerPoints

Noncompliance Intervention Training: Part II

ALPHA COMMAND, WAIT TIME, SECOND COMMAND, PRAISE

Review Previous Phase

- "Please" Alpha command
- Wait 3-10 seconds

Add Praise

- We will now be adding verbal praise in to our intervention
- If a student responds to your "Please" command, verbally praise him or her!

Behavior Specific Praise

- Behavior Specific Praise is an important component of this intervention. This type of praise labels the behavior that you want to reinforce.

Examples:

- "Thank you for sitting down!"
- "I love the way you are working quietly."
- "Way to raise your hand before speaking!"
- "Great putting your book away so quickly."

Nonexamples:

- "Nice job."
- "Thank you."
- "Way to go!"
- "Awesome!"

Add a second command or "prompt"

- If a student responds to your "Please" command, great! Verbally praise him or her using Behavior Specific Praise.
- If a student does not comply with your "Please" command, wait 3-10 seconds and **then give a second command using the word "Need" in one of two forms:**
  - "I need you to"
  - "You need to"

The key word is "Need"

Praise for Compliance

- If the student responds to your second "Need" command, great! Praise, using Behavior Specific Praise.
- If not, do nothing. **Please do not provide any punishers during the 15 minutes we are observing.**

That's it!

Review:

- "Please" command
- Wait 3-10 seconds
- BSP for compliance OR
- "Need" command
- Wait 3-10 seconds
- BSP for compliance

Example:

"Tom, please get out your math book."
(Wait 3-10 seconds)
"Tom, you need to get out your math book."
(Tom gets out his book)
"Thank you for getting out your book, Tom!"

Example

- You have just given out a math assignment and Hailee has not begun working on it but is instead drawing a picture. What do you do?
- Answer: **Give a Precision Request and allow Hailee time to comply.** You walk towards Hailee and quietly say "Hailee, please put away the drawing and get to work on your assignment." You turn to other students and give positive feedback while allowing Hailee 5-10 seconds to comply with your request.
- After allowing Hailee time to comply with your request you come back to Hailee to see if she's begun working on the assignment and she has not. What do you do?
- Answer: **Make the request a second time using the word "need."** You say, "Hailee, you need to start working on your assignment." You once again give Hailee 5-10 seconds to comply with your request.
- Hailee has begun working on her assignment. What do you do?
- Answer: **Give verbal praise.** You immediately respond by saying, "Hailee, great job! Thank you for getting to work on your assignment!"

Practice

For each of the examples below, assume the student does not comply with your first request.

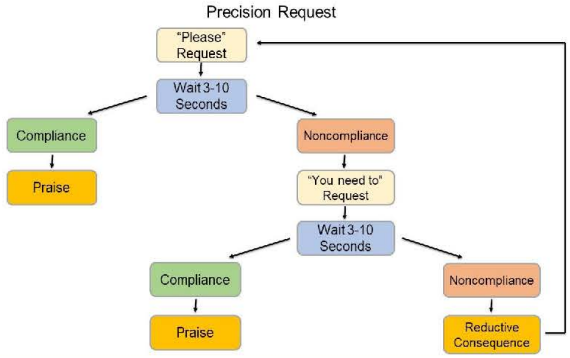
- Rebecca is repeatedly shouting out answers during your lesson.
- Cameron is playing with a Pokémon figure he got out of his desk while the rest of the class is reading.
- Lacy is talking to her friend while you are reading to the class at the rug.
- Alana throws her pencil across the room when she gets frustrated with a problem.
- You have asked the class to take out their math books but Mark ignores you and continues coloring.

The Precision Request

COMPLETE INTERVENTION

The Precision Request

- You have been implementing parts of the Precision Request intervention, an intervention which is designed to reduce noncompliance by use of **alpha commands, praise, and reductive consequences.**
- The Precision Request creates a predictable pattern for students. When asking them to complete a task, you use the same key words each time.



Add Reductive Consequence

- You have already been using alpha commands and praise. Now we will add a reductive consequence.
- Use the consequence that you already have been using in your classroom. This could be loss of points, loss of free time, change seating assignment, etc. Use whatever you would normally do for noncompliance.
- Make sure your students know and understand what reductive consequence they will receive for noncompliance before you implement the Precision Request!

Begin Again

- After you apply the reductive consequence, you will immediately give the request again using the "Please" request.
- This ensures that students understand that receiving consequences does not allow them to escape complying with your request.
- If the student complies then verbally praise using BSP, but do not remove the consequence they already received.
- If the student continues not to comply, move through the procedure again and give another consequence.
- It is important to have a hierarchy of preplanned consequences you can use, from mild to most severe. If the student does not comply a second time, you can move on to the next consequence.

Example

Jenna is playing with her bracelets at her desk instead of doing an assignment. You walk over to Jenna and quietly say, "Jenna, please put away your bracelets and get to work."

You wait 3-10 seconds while helping Jenna's neighbor. You see that she is still playing with her bracelets.

You say, "Jenna, I need you to put away those bracelets and get to work."

After waiting 3-10 seconds you see that Jenna is still playing with her bracelets. You say, "Jenna, you owe me $5 of class money (the preplanned consequence). Now please put your bracelets away and get to work."

Within 5-10 seconds Jenna puts her bracelets away and begins working. At this point you give verbal praise: "Jenna, thank you for putting your bracelets away."

Things to remember

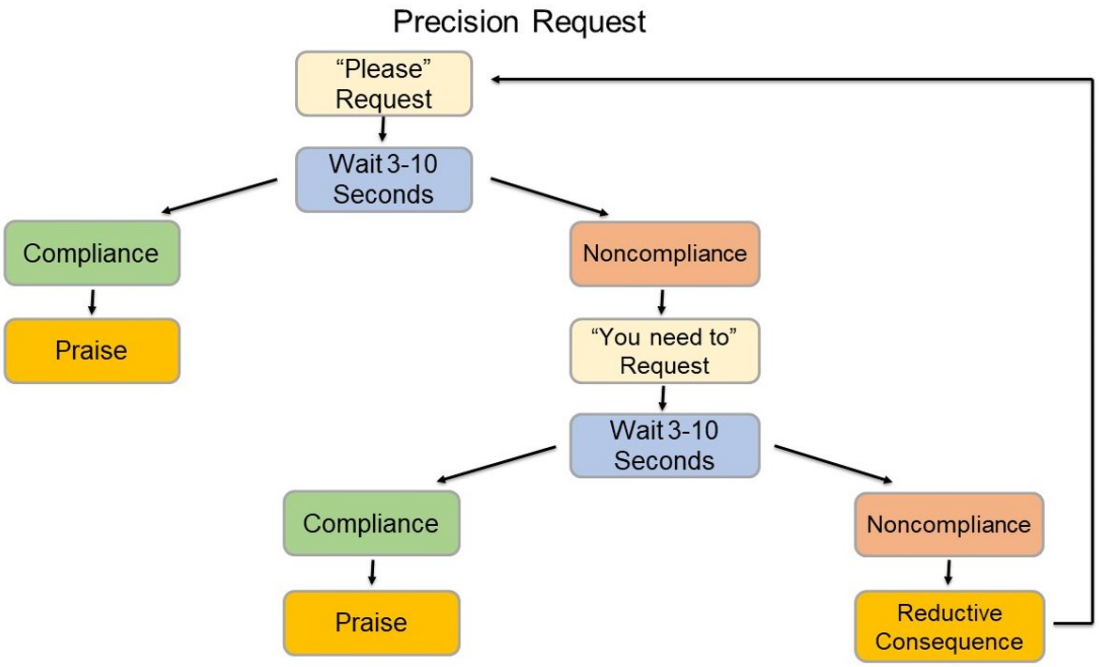
- Be close to the student (within 3 feet)
- Make eye contact
- Use a quiet but firm voice
- Use Behavior Specific Praise
- Have your consequences preplanned, and make sure the students know ahead of time what they are.

Practice

For each of the examples below, assume that the student does not comply with either of your requests.

- You have asked the class to put away their markers and get ready for the next lesson. Carla continues coloring.
- The class is lining up for lunch but Dan is wandering the room.
- You have told the class to turn to page 20 in their math books, but Sue is leafing through her book and humming.
- Devin is running around the room during free time.
- Laura is repeatedly touching her classmate during silent reading.

Precision Request Poster



APPENDIX E

Implementation Tools

Teacher Scripts for Implementation

Phase B – Alpha command + Wait time
"Starting today, I am going to be using a statement when I ask you to do something. I'll use the word 'Please' and then I'll tell you to do something." Then I'm going to give you some time to do it. Here is an example: 'Please put your book away.'"

Phase C – Alpha command + Wait time + Second command + Wait time + Praise
"Starting today, I am going to be giving you two chances to comply. 'Comply' means that you do what I ask you to do. First, I'll use the word 'Please', and tell you to do something like I did for the last few days. If you do it, then I'll praise you. 'Praise' means that I'll tell you what a great job you did. If you don't do it, then I'll give you a second chance and I will use the words 'You Need' and I'll give you some time to comply. If you do it the second time, I'll praise you. "Here is an example: 'Please get out a pencil' Let's say you didn't do it. After I wait a few seconds I'll say 'You need to get out your pencil.'"

Phase D – Alpha command(s) + Wait time + Praise OR Reductive Consequence
"We've been working on doing what I ask for the last little while. Starting today, I am going to be adding in a consequence for not complying with what I tell you to do. It will be (lose points, recess time, check on board, etc.). I'll still give you two chances and use the words 'Please' and 'Need', like we've been doing. And I'll still praise you if you do what I tell you to do. But if you don't, after the second chance, you'll (e.g., lose two points, get a checkmark on the board, etc.). "Here is an example: 'Please keep your hands to yourself.' Let's say you didn't do it.
I'll say 'You need to keep your hands to yourself.' If you do, I'll praise you. If you don't, you'll (lose points, stay in from recess, etc.)."

Implementation Fidelity Checklist

Precision Request Fidelity Checklists

Phase B

- ☐ Participant explains the term "alpha command"
- ☐ Participant demonstrates correct usage of an alpha command plus wait time
  - Alpha command is in the form of a statement
  - Alpha command begins with the word "Please"
  - Alpha command is brief and concise
  - Alpha command is stated positively
  - Alpha command is followed by a wait time of 3-10 seconds
- ☐ Participant uses the Phase B script to introduce intervention to class

Phase C

- Participant reviews the components of an alpha command, as learned in Phase B
- Participant gives examples of Behavior Specific Praise statements
- Participant explains when to praise versus when to move on to second command
- Participant demonstrates correct usage of alpha command plus wait time plus second command plus praise
    - First alpha command follows rules outlined in Phase B and begins with the word “Please”
    - First alpha command is followed by a wait time of 3-10 seconds
    - First command is praised if applicable
    - Second command follows the rules outlined in Phase B and contains the word “Need” and begins with either the statement “I need” or “You need to”
    - Second command is followed by a wait time of 3-10 seconds
    - Second command is praised if applicable
- Participant uses the Phase C script to introduce intervention to class

Phase D

- Participant reviews the Phase C procedures
- Participant explains when to praise versus when to apply reductive consequence
- Participant demonstrates correct usage of full Precision Request procedure with correct usage of alpha commands, praise, wait time, and reductive consequences at the appropriate times
    - Alpha commands follow rules outlined in Phases B and C
    - Wait time is used
    - Praise occurs for compliance after first or second commands
    - Reductive consequence is applied after noncompliance to second command
- Participant uses the Phase D script to introduce intervention to class
- Participant explains in detail the reductive consequence students will receive to the class

Reductive Consequence Tracker

Student:
Reductive Consequence:

Date							Initials

Reductive Consequence Reward Game

Good Behavior Dice Rewards

	Choose from the treasure box
	Pick a treat or snack
	Soda pop
	5 minutes of free time

	**5 minutes of electronic time on an iPad or Chromebook**
	**5 minutes extra recess**

No marks= 2 ROLLS 1-2 marks= 1 ROLL 3+ marks= No ROLLS

APPENDIX F

Social Validity Questionnaire

Precision Request – Component Analysis Interview

1. Tell me a little about your philosophy on classroom management. How do you feel that problem behavior and noncompliance should be managed?

2. What were some of the challenges in implementing this intervention?

3. What supports would have been more helpful during implementation?

4. Did you feel that this intervention benefitted your students? If so, how?

5. Would you use this intervention under any other circumstances or settings?

6. Is there anything else you would like to tell me about your experience in this study?