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A Component Analysis of Behavior Skills Training to Train School Staff to Implement Noncontingent Attention

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**A COMPONENT ANALYSIS OF BEHAVIOR SKILLS TRAINING TO TRAIN
SCHOOL STAFF TO IMPLEMENT NONCONTINGENT ATTENTION**

A Master's Thesis

Presented to

The Graduate College of

Missouri State University

In Partial Fulfillment

Of the Requirements for the Degree

Master of Science, Applied Behavior Analysis

By

Joshua E. Parrish

August 2023

A COMPONENT ANALYSIS OF BEHAVIOR SKILLS TRAINING TO TRAIN SCHOOL STAFF TO IMPLEMENT NONCONTINGENT ATTENTION

Psychology

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Joshua E. Parrish

ABSTRACT

As the field of Applied Behavior Analysis expands into multiple disciplines, efficient and effective training becomes an increasingly important aspect of implementing behavior analytic methods and procedures in these additional disciplines. Specifically, as behavior analysis in schools increases, the need for an efficient method of training in implementing behavioral interventions increases due to multiple responsibilities held by school professionals and an occasional high student to teacher ratio. Behavior Skills Training (BST) is among the most researched forms of training for multiple levels of participants in increasing new skills. In evaluating the individual components of BST, effectiveness and efficiency may increase when only the necessary components for each participant are implemented. Additionally, eliminating unnecessary components of the BST training method may also minimize social punishers through participants feeling belittled or less than. By fostering a training environment rich in reinforcement, the trainer also increases the probability of correct implementation of Behavior Analytic methods.

KEYWORDS: Behavior Skills Training (BST), Noncontingent Reinforcement (NCR), noncontingent attention, component analysis, modeling, feedback, rehearsal

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In the interest of academic freedom and the principle of free speech, approval of this thesis indicates the format is acceptable and meet the academic criteria for the discipline as determined by the faculty that constitute the thesis committee. The content and views expressed in this thesis are those of the student-scholar and are not endorsed by Missouri State University, its Graduate College, or its employees.

TABLE OF CONTENTS

Introduction.....	1
Method.....	9
Participants.....	9
Setting.....	10
Data Collection.....	10
Materials.....	11
Experimental Design.....	11
Measurement.....	11
Interobserver Agreement.....	13
Procedure.....	13
Baseline.....	13
Behavior Skills Training.....	13
Testing.....	14
Follow-Up.....	15
Results.....	16
Follow-Up.....	16
Social Validity.....	17
Discussion.....	18
Strengths.....	19
Weaknesses.....	20
Future Research.....	20
References.....	22
Appendices.....	25
Appendix A: Script for Behavior Skills Training for Noncontingent Attention.....	25
Appendix B: Task List.....	27
Appendix C: Social Validity Survey Items.....	28
Appendix D: Noncontingent Attention Integrity Checklist.....	29
Appendix E: Social Validity Survey Results.....	30
Appendix F: Research Compliance Certificate.....	31
Appendix G: Missouri State University Consent Form.....	32

LIST OF FIGURES

Figure 1: Results.....24

INTRODUCTION

In the growing field of Applied Behavior Analysis, basic concepts, procedures, and evaluations are making their way into additional disciplines (Gilmore 2016). As research continues to be published and introduced to the public, ABA methods are more accessible than ever before (Carr 2009). The education system, in particular, adopted many behavior analytic methods. (Coleman 1970). Board Certified Behavior Analysts (BCBA) are increasingly employed in school districts and their methods are slowly being adopted. The efficacious use of empirically validated interventions in school settings is more important than ever before. Over time, classroom teachers are becoming more aware of antecedent and consequent events, administrators are basing their disciplinary actions on valid research, and school staff such as paraprofessionals are developing within a culture that views behavior as an adaptation to the school environment.

As awareness of behavior analytic methods increases, the demand for effective training of staff and teachers does as well. Frequently, the responsibility for training staff falls on a behavior analyst. To be effective, behavior analysts should train staff in schools continually.

Prior to implementation of behavior analytic interventions for problem behavior, some deficits should be addressed. First, treatment of problem behavior in schools is often reactive rather than proactive. That is, staff can be quick with a consequence for problem behavior, but remiss when it comes to analyzing the functions of the behavior. For example, it is common practice within schools to present a generic penalty following the occurrence of any problem behavior. These penalties often include loss of recess time, increased schoolwork, or removal of a preferred stimulus or activity. This could be problematic as the function of the problem behavior is rarely determined, leading to unresolved problem behaviors and natural reinforcers that are rarely experienced by the student. An analysis of the contingencies responsible for problem behaviors in the school setting would allow educators to not only address current events but prevent problem behavior in the

future. Staff are often responsible for multiple students, in addition to other duties, limiting the time available for completing functional analyses. Without a full understanding of the environmental events around a problem behavior, any progress made is likely to be temporary.

One result of the reliance consequences and lack of functional analyses is a overreliance on more restrictive procedures, such as punishment and penalty. Procedures like contingent time-out at recess and in-school detention may be utilized when more effective alternatives exist. Whenever possible, punishment procedures should be replaced with less restrictive procedures, such as positive reinforcement. In this context, noncontingent reinforcement has shown utility as a more acceptable procedure for reducing problem behaviors (Foley 2018).

Noncontingent reinforcement (NCR) is defined as the delivery of reinforcers according to a schedule (e.g., Fixed-Time or Variable Time) that is independent of responding (Kahng 2000). The delivery of scheduled reinforcement without the need of a response acts as a proactive measure that requires no behavior, specifically problem behavior, to contact a desired outcome. For example, behaviors that are disruptive in the classroom that are maintained by teacher attention may decrease if teacher attention is provided prior to the occurrence of disruptive behaviors. Additionally, this proactive presentation of reinforcement may also provide increased exposure to a preferred stimulus prior to the occurrence of problem behavior. In a large classroom setting, where a teacher-to-student ratio is relatively low, reinforcement in the form of attention for desirable behavior may be less practical. With additional staff, such as paraprofessionals, being added to the classroom, it is becoming increasingly possible to provide proactive noncontingent reinforcement in the form of attention to students who exhibit attention-maintained problem behaviors.

Multiple studies have been conducted to evaluate the effects of NCR on different problem behaviors. In 2000, Kahng et. al conducted a study of the effectiveness of NCR using a Fixed-Time schedule of reinforcement with three individuals who lived in a treatment facility exhibiting self-

injurious behaviors (Khang 2000). Following functional analysis, experimenters found that two of the participants' self-injurious behaviors (SIB) were maintained by attention while the third was maintained by access to a tangible item. Experimenters then compared the effectiveness of different schedules of NCR. The experimenters found that all three participants exhibited near-zero levels of SIB under all schedules of NCR, and maintained under thin the schedules of reinforcement. In 2011, Phillips et. al. conducted a study of already existing evidence to evaluate the efficacy of NCR for reducing aggressive behavior. However, in this study, the experimenters evaluated the effectiveness of NCR when used by non-behavior analysts in a natural environment. Phillips found that the addition of NCR to extinction and activity choice was the most effective treatment in decreasing aggressive behavior maintained by attention (Phillips 2011).

Subsequently, Phillips et al completed an analysis of 27 applications of NCR (Phillips et al. 2017). The study included participants ranging from 5 to 33 years-old with developmental and/or intellectual disabilities. A functional analysis was completed with all participants and NCR was evaluated in isolation independent of other treatment components. A reversal experimental design was used in 24 studies, a multielement design was used two studies, and a multiple baseline design was used in one of the studies. For all 27 studies, one or more of the following was implemented: NCR without extinction, NCR with extinction, and NCR with response blocking. This meta-analysis concluded that the implementation of NCR in accordance with other individualized approaches was effective in decreasing severe problem behaviors in those with developmental and/or intellectual disabilities (Phillips 2017).

In addition, Panahon et al. (2013) conducted a study comparing the effects of noncontingent plus contingent reinforcement to contingent reinforcement alone on the increase of academic performance. Three students in a fourth-grade classroom participated and an ABCB reversal design was used to complete the comparison. In the contingent reinforcement alone condition, students

were given the choice of a desired reward following the completion of an academic task. In the noncontingent plus contingent reinforcement condition, students received points for the number of math problems they completed. In addition, the students were given a free point every 15 seconds during the task. The findings of this study were mixed with a lack of stability across conditions. Contingent reinforcement alone did increase the academic performance within these tasks. The addition of noncontingent reinforcement produced decreases in academic performance for two participants, however, the decrease did not stabilize in this condition.

Phillips et al. (2011) sought to examine the effects of NCR on problem behavior maintained by social reinforcers versus automatic reinforcers. NCR, or noncontingent reinforcement, is a general term that refers to the delivery of maintaining reinforcers independent of a response while noncontingent attention refers the delivery of attention specifically independent of a response (Cooper et al. 2019). In this study, a functional analysis of severe problem behavior was conducted with 27 individuals with intellectual and developmental disabilities in an inpatient hospital unit. During the functional analysis phase of this study, 22% of problem behavior was found to be maintained by attention (Phillips 2011). Based on this data, attention as a maintaining variable was moderately prevalent among problem behaviors exhibited by those with intellectual and developmental disabilities. In other settings, such as school classrooms, with students who exhibit less severe problem behavior, stereotypic behavior, and higher developed language, it is possible that the prevalence of socially maintained problem behavior would be even greater.

With the moderate prevalence of socially-maintained behaviors in those with intellectual and developmental disabilities, attention as a maintaining and highly-preferred consequence is also more likely. Additionally, the presentation of attention as a reinforcer is easily implemented by non-behavior analysts in settings such as the classroom. Based on the previously established effectiveness of NCR in the treatment of problem behavior and the prevalence of attention as a maintaining

variable in problem behaviors, it is possible that increasing school professional's repertoire to include noncontingent attention will directly correlate with a decrease in behavioral referrals. The presentation of noncontingent reinforcement without the presentation of a task or demand could directly correlate with a decrease in problematic behavior in the classroom setting. If this is an effective procedure for reducing problem behavior in schools, then effective dissemination to schools is important. NCR must be implemented with precision or the behavior analyst risks making the problem worse, and high-quality training must be utilized to ensure that NCR is applied effectively.

Behavior Skills Training (BST) has been shown to be an effective form of training for many kinds of participants in a variety of settings. These include staff and students within school settings, staff and clients within a clinical setting, as well as providing training for parents and caretakers (Lerman 2020). The four components of BST include instruction, modeling, rehearsal, and feedback. The first component, instruction, involves direct verbal or written description of the skill being trained. Second, the modeling component allows the trainer to provide the trainee with visual examples of the skill being performed correctly. The third component, rehearsal, allows the trainee the opportunity to practice these skills in a controlled environment while the trainer observes. Finally, the feedback component allows the trainer to provide reinforcement and descriptive feedback regarding the trainee's performance during rehearsal. The rehearsal and feedback components can then be repeated until mastery has been achieved.

Behavior Skills Training has also been augmented with the addition of the Pyramidal Training procedure (Lerman 2020). This procedure increases generality by allowing other staff and professionals to implement behavior analytic procedures following instruction from a previously trained behavior analyst or other staff (Lerman 2020). In this way, basic behavior analytic practices can easily be distributed and implemented in school districts and a wide variety of other settings. In

addition to staff training within the school system, BST also provides a way for staff to maintain their effectiveness over time with minimal additional training. An evaluation of the long-term maintenance of training skills in a school setting found that staff exhibited trained skills with high fidelity 30 years after the initial training session (Reid 2017). Due to the extended period of time that passed during this study, it can be assumed that staff turnover was significant. This suggests that some form of pyramidal training may have continued following the initial BST session.

Decades of research using BST has consistently found the procedure to be easy to implement and effective. One reason BST has found so much success is that it is a very thorough approach to training others. BST includes four basic components, and the learner is required to engage in multiple responses across varying topographies during the session. These responses include verbal responses as both the speaker and listener during the instruction and feedback phases, observation of multiple exemplars during the modeling phase, and performance of the target skill during the rehearsal phase. However, the modeling phase may not be a required component of BST. There are three primary reasons why the omission of the modeling component would be beneficial in the training of school personnel. First, across the four components of Behavior Skills Training, the modeling component requires little response effort and no overt responses for the implementer to observe and reinforce. Second, the omission of this component promotes a more efficient form of training for school personnel who likely have multiple responsibilities. Finally, though modeling may be important to establish equivalence between verbal instruction and performance of a response for young children, adults may view this component as unnecessary or embarrassing.

Previous research suggests that modeling may not be required. Yeaton and Bailey (1983) trained crossing guards using both modeling and written instruction. They found that using instruction and modeling together did not produce a significant change in behavior as compared to

using only written instruction. They did, however, find that rehearsal, feedback, and praise were necessary in creating behavior change (Yeaton & Bailey 1983).

In addition to the effectiveness of Behavior Skills Training as a whole, is how effective each component of Behavior Skills Training may be individually. In a study conducted by Clayton et al (2019) BST was used to improve staff implementation of Discrete Trial Training. However, rather than including direct instruction as a component, the experimenter began the training with feedback based on the participant's performance during baseline. The study yielded positive results indicating that this method improved staff performance. High levels of performance were also observed after a 30-day follow-up (Clayton et al. 2019).

Erath et al. (2021) also conducted a study to develop a more efficient method of training to train individuals in human services organizations with diverse backgrounds. This study included four staff members in a non-profit human services organization serving individuals with intellectual and developmental disabilities. A task analysis was provided to each of the participants for the target skills being trained. The purpose of the task analysis was to provide direct instruction in addition to verbal instruction. However, the video training alone proved to be an effective method of training with verbal feedback only being needed occasionally (Erath 2021).

Procedures like noncontingent attention must be applied with fidelity and consistent, which requires well-trained staff. The procedure for providing noncontingent attention involves several different skills that staff must be proficient in during implementation. These skills include, but are not limited to, 1) undivided attention for a predetermined interval of time, 2) avoiding the presentation of a task or demand, and 3) terminating the attention with direct instructions for transition. Behavior Skills Training is a validated and established method for training non-professional staff, particularly in the school setting. However, it is possible that similar results can be attained without the modeling component due to the advanced verbal repertoire of adult

participants. The purpose of this study was to evaluate and identify the components of Behavior Skills Training necessary in training paraprofessionals in a special education classroom to implement noncontingent attention.

METHOD

Participants

The participants in this study included three paraprofessionals employed at middle school and high school in southwest Missouri. Participants One and Two worked in self-contained special education classrooms with middle school students that exhibited a variety of developmental/learning disabilities. Participant Three worked in a high school special education classroom. Students exhibited challenging behaviors such as noncompliance, frequent disruption, aggression, and elopement in the classroom. Participant One was a 38-year-old, white female paraprofessional with a college degree and 18-months of experience as a special education paraprofessional.

Participant Two was a 25-year-old white female paraprofessional with a high school diploma and 3.5 years of experience working in an early childhood learning center and six months in a special education classroom. This participant was placed one-on-one with a first-grade student with additional instructional and physical assistance who exhibits occasional challenging behaviors.

Participant Three was a 47-years-old white female paraprofessional with a high school degree and 22 years of experience as a paraprofessional in the school system. She was assigned as a one-on-one paraprofessional to a student with Down Syndrome and extensive learning/intellectual disabilities. Participant Three holds a high school diploma and has 22 years of experience as a paraprofessional in the school system.

Setting

During baseline and testing, data collection for all three participants took place in their normal classrooms. These rooms were typical classrooms that included 12 student desks/chairs and a desk/chair in the front of the room for the teacher. Classrooms also included thirteen additional students, two additional paraprofessionals, and the data collector. Inside the classroom were individual desks for each student and individual U-shaped tables for each paraprofessional and the data collector. During BST, data collection for all three participants took place in the same special education classroom. This room was a typical classroom with 12 chairs/desks for students and a desk/chair for the teacher at the front of the room. Unlike during baseline and testing, only the participant and the experimenter were present during BST.

Data Collection

Baseline data was collected during the first hour each morning and each participant was assigned one student to which they would provide noncontingent attention. Baseline data was collected during this first hour period due to more routine during this time that decreased the likelihood of variability. Participants One and Two provided NCR for their assigned one-on-one students. Baseline data was collected for Participant Three during the first hour period in the high school special education classroom and the participant provided NCR to their assigned one-on-one student. Prior to moving into the training phase, stability was achieved in baseline. Stability was defined as having no decreasing trend and variability less than 5 percent across three or more data collection sessions. During the training phase, data was collected using 10-second partial interval data collection for five minutes. Following the rehearsal phase, the participant received feedback and returned to the rehearsal phase as needed during which the experimenter will record 10-second partial interval data for one minute. Mastery was achieved when all the skills represented in the task list were performed in a single rehearsal session with at least 90% accuracy.

Materials

The data sheet for collecting participant responses used a partial interval 10” for a 10-minute session of observation. During the behavior skills training session, a script (See Appendix A) was kept by the experimenter to assure treatment integrity and to provide consistency across participants. A written task list was also provided to each participant to use during each session (see Appendix B). A social validity survey (See Appendix C) for each participant was administered following the conclusion of the testing portion of the study. Treatment integrity data was collected in addition to partial interval data to measure the fidelity of implementation (See Appendix D).

Experimental Design

A concurrent multiple baseline across participants design was used to demonstrate experimental control. The independent variable (BST) was introduced in a staggered fashion across participants (Carr 2009).

Measurement

Data was collected using a 10-second partial interval data collection method. The implementer acted as the data collector. The target for increase was defined as a 10-second interval with no interruptions in non-contingent attention and no presentations of tasks or demands. Each interval in which there were no interruptions in attention and no tasks or demands present was considered successful. An unsuccessful interval was defined as interruption in attention due to any external variables (e.g., talking to other students, attending to a computer, phone or other device, or orienting body/eye contact away from the student). Unsuccessful intervals also included a

presentation of task or demand or conversation about tasks, demands, or past inappropriate behaviors (e.g., “Can you tell me why you lost recess time today?”)

Participant 1’s baseline and testing data collection took place in their everyday classroom setting with students they work with daily. Though this participant does not have a one-to-one student assigned to them, they were given the choice of which student they would implement noncontingent attention with. Prior to each baseline data collecting session, the participant was given brief instructions to provide noncontingent attention to the student in the hallway away from the student. The participant then entered the room where they sat with the student at least 5 m away from the other students. The participant then proceeded to tell the student that they had her undivided attention.

Participant 2’s baseline and testing data collection took place in their everyday classroom setting with the one-to-one student they are assigned to by school administration. Prior to each baseline data collecting session, the participant was given brief instructions to provide noncontingent attention to the student in the hallway away from the student. The participant then entered the room where they sat with the student at least 5 m away from the other students.

Participant 3’s baseline and testing data collection took place in the everyday setting in the Special Education classroom. Though this participant does not have a one-to-one student assigned to them, they were given the choice of which student they would implement noncontingent attention with. To maintain consistency across participants, Participant 3 was given brief instructions to provide noncontingent attention to their student just as Participant 1 was. The participant then entered the room with the student.

Interobserver Agreement

Interobserver agreement (IOA) was conducted for 33% of observations during baseline, training, and testing. Both the experimenter and the interobserver collected data for these sessions. To calculate agreement, the number of intervals where both observers were in agreement was totaled and divided by the total number of intervals in the session. This number was then multiplied by 100 to produce a percentage.

Procedure

The study consisted of three phases: 1) Baseline, 2) Behavior Skills Training, and 3) Testing.

Baseline

Five sessions of baseline data were collected in the paraprofessional's assigned setting where they spent most of their time each day. The experimenter provided one simple instruction at the beginning of the session to provide the assigned student noncontingent attention for 10 minutes prior to the presentation of a task. A timer was then set within view of the participant. The experimenter then observed from a neutral location such as the back of the classroom or the teacher's desk. To avoid providing additional attention to the assigned student or other students, the experimenter remained at least three meters from the participant and their assigned student and used a computer to collect data.

Behavior Skills Training

Following the baseline phase, the participant moved into the training phase. During training, the participant alternated between the components of Behavior Skills Training and Testing until mastery was achieved. Mastery was defined as correct implementation of noncontingent attention in 90 percent or more of the intervals during the session. The first training sessions included only the

instruction component of BST. Following this session, the participant returned to the testing or rehearsal component. If mastery is achieved during this session, BST was concluded for this participant. If mastery is not achieved, training continued into the feedback phase in which the participant received detailed feedback regarding correct and incorrect implementation of noncontingent attention. Following the feedback component, the participant again returned to the testing or rehearsal phase. If mastery was achieved during this session, BST was concluded for this participant. If mastery is not achieved, training then advanced to include the modeling phase in which the experimenter modeled a 10-minute session of implementing noncontingent attention to the participant followed by the final session of testing or modeling. The experimenter conducted the behavioral skills training in the special education classroom without any students present. All three participants were present during the training session in addition to the experimenter. The experimenter used the written script to provide instruction to all three participants simultaneously.

Testing

The testing phase was identical to the baseline data collection phase. This phase took place in the paraprofessional's assigned setting with the same assigned student used during baseline. The participant was given a simple instruction to provide ten minutes of noncontingent attention prior to the presentation of a task. The experimenter collected data using a computer device from the back of the classroom or the teacher's desk at least three meters away from the participant and the assigned student.

Follow-Up

A follow-up testing session took place approximately 2 months following the study. Two of the three participants were again prompted to choose a student and deliver noncontingent attention for 10 minutes. This session took place in the same classrooms as the original testing sessions and noncontingent attention was delivered to the same students.

RESULTS

Data for all three participants is shown in Figure 1. Daily sessions and the percentage of correct intervals are represented on the abscissa (x-axis) and ordinate (y-axis), respectively.

During baseline, Participant One (Figure 1, top) correctly implemented noncontingent attention during 11.6% of intervals per session, on average. With the introduction of the instructions component of BST, average responding increased to 75.6%. As this was below the mastery goal of 90%, feedback was added to the instructions component. The introduction of feedback increased correct responding to 96.1%.

During baseline, Participant Two (Figure 1, middle) correctly implemented noncontingent attention during 1% of intervals per session, on average. With the introduction of the instructions component of BST, average responding increased to 93.7%. Since responding was above the mastery criterion of 90%, feedback was not needed for this participant.

During baseline, Participant Three (Figure 1, bottom) correctly implemented noncontingent attention during 73.1% of intervals per session, on average. With the introduction of instructions, average responding increased to 97.8%. This participant also met the mastery criterion with just the instructions component of BST, thus feedback was not introduced.

Follow-Up

During this session, mastery of 95% or better was achieved by both participants. Participant One was accurately performing the intervention at 97% and Participant Two was at 98% (see Figure 1).

Social Validity

The social validity survey yielded positive results among all three participants suggesting that the three were in agreeance that the study and the skills trained were important and useful for them and their students in their respective settings (Appendix E). Each participant was given a 10-item social validity survey in which they provided an answer 1-5 (1=Strongly Disagree, 5=Strongly Agree). The score for each item was then averaged between the answers the three participants provided. According to the data collected with the survey, all three participants either agreed or strongly agreed that the skills being taught could be applied in their daily settings and that the skills were an important variable to increase in the management of behavior in their settings. In addition, all three participants either agreed or strongly agreed that they now have an understanding of the skill being trained, they are more independent and confident in implementing the skills, and training and feedback were sufficient for the increase of these skills.

Written Informed Consent

Each participant in this study provided written informed consent (See Appendix F).

IRB Approval

IRB approval was also provided for this study on December 12, 2021 (See Appendix G).

DISCUSSION

The results found in this study confirm that the modeling component of Behavior Skills Training is not necessary in training school paraprofessionals to implement noncontingent attention. Each participant was successful in achieving mastery of this skill after only receiving instruction and feedback while the test portion of the study acted as the rehearsal. In addition, the data from the follow-up testing session confirms that these three components alone are sufficient to maintain the skill after approximately two months. Additional findings in the current study also found that the skills being trained were considered important and useful during the social validity survey.

In addition to the success observed in this study, other implications include the effectiveness of rules and rule-governed behavior in increasing performance among school staff members. The function of feedback in these scenarios may vary and may be grounds for future exploration. Due to the lack of uniformity in the implementation of feedback, the complexity of the function of feedback remains largely unexplored. In additions, feedback can be classified as an antecedent stimulus, and consequence, or both. Known functions of feedback include feedback as a Respondent Conditioned Stimulus, feedback as a Discriminative function, and feedback as a Motivation Operation (MO). As a Respondent Conditioned Stimulus, feedback involves the use of emotionally laden words they are paired with stimuli that evoke an emotional response. As a

Discriminative Function, feedback can function as a Discriminative Stimulus if the presentation of feedback signals the availability of reinforcement. Finally, feedback can function as a motivating operation if the feedback presented is correlated with punishment. Then, the removal of the feedback following improved performance can function as negative reinforcement (Douglas 2023).

In the case of the current study, the function of feedback remains to be evaluated. However, due to the use of language in the BST components, the feedback most likely functions as a Respondent Conditioned Stimulus in which the verbal stimulus presented by the trainer may be paired with stimuli that can evoke an emotional response. Additionally, the possibility of feedback as a Discriminative Stimulus must also be considered the distant improvement of problem behaviors in the classroom is considered to be the available reinforcer.

Another implication of this study is the effectiveness of a least-intrusive method of training for school personnel. This proved beneficial for participants for multiple reasons. First, this least-intrusive method was beneficial in preserving the co-worker relationship as well as the supervisor-supervisee relationship. In preserving the relationship, variables that could be considered punishing were avoided. These variables may include the implication of superiority or inferiority between the trainer and trainee. By avoiding these variables, unintended punishing consequences were also avoided increasing the probability of the target skill occurring.

Second, school staff and administrators reported the lack of time in resources necessary to train uncertified staff (i.e. paraprofessionals, maintenance employees, etc). With the implementation of a least-intrusive method of training, limited resources were required and small increments of time were necessary in improving the skills of uncertified staff members.

Strengths

Results suggest that a single component from BST was effective for increased accuracy of NCA. One participant required feedback to meet the mastery criterion. This suggests that, depending on the skill and the recipients, a smaller subset of the BST system can be effective for effective staff training. In addition, the social validity survey showed that the participants found the training and skills acquisition to be acceptable uses of their time.

Weaknesses

There was some variability between participants with respect to their experience, mastery of NCA, and the clients they worked with during this study.

When referring to the data, Participant 3 had a higher level of performance during baseline than other participants averaging 73.12% correct intervals per session. This may be partially due to the fact that this individual has worked closely with the experimenter in past years providing prior exposure to the skill being trained. In addition to Participant 3's increased prior exposure to the skills, Participant 3 resigned from their position at the school during the study. They did return for the completion of the study, however, this setting was no longer their everyday setting to apply skills. An unforeseen inconsistency in settings was found when Participant 2 and their student were placed in a separate room eliminating the opportunity to deny attention to other students attempting to recruit attention.

Finally, before follow-up testing began approximately Two months following the study, Participant 3 resigned from their position at the school. Though the remaining participants participated in follow-up testing, it cannot be confirmed that the skill was maintained for 100% of the participants.

Future Research

Further investigation regarding the effectiveness of the individual components of BST to train school personnel would be beneficial in establishing proactive measures for problem behaviors in the school setting. First, a pairwise analysis of instruction and feedback to determine the most effective component would be beneficial. In the current study, the procedure was terminated following instruction if mastery was achieved. If mastery was achieved, the effectiveness of both of them together was evaluated. No data was collected to determine the most effective component. Second, a component analysis of Behavior Skills Training in training behavior for increase for students in this setting rather than staff. Finally, data collection and analysis in the effectiveness of noncontingent attention in decreasing problem behaviors in the classroom setting.

The findings in this study may also imply other applications for this form of training. First, Continued use of the method in training other staff skills such as Discrete Trial Training, multiple methods of data collection, and the implementation of response skills for students with Behavior intervention plans. Also, continued use and analysis of noncontingent attention in the classroom setting may be beneficial in establishing a proactive measure to avoid the occurrence of problem behaviors. Finally, broader scope of staff members being trained in behavior response skills using this method of behavior skills training without the modeling component may help to establish a more effective, efficient, and socially appropriate method of training.

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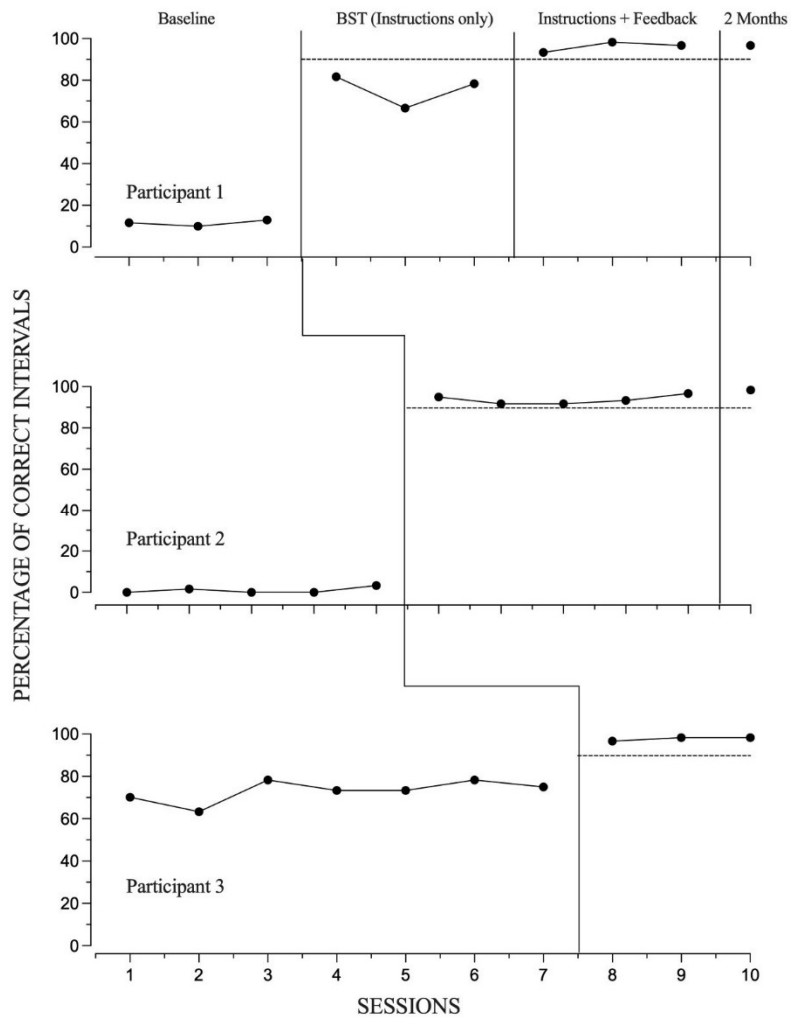


Figure 1: Percentage of 10-sec intervals where Noncontingent Attention was implemented correctly per 10-minute session.

APPENDICES

Appendix A: Script for Behavior Skills Training for Noncontingent Attention

Instruction

Trainer: “Today, we will be going over the implementation of Noncontingent Attention as a proactive method of decreasing future problem behaviors.”

“Noncontingent attention is simply undivided attention given to a student that does not require the performance of any behavior.”

“Important things to note about noncontingent attention are:

Interruptions to the attention should be avoided. This includes talking to other students, talking to other staff members, or attending to a computer phone or other device.

Eye contact and body orientation are forms of attention. Therefore, during the presentation of noncontingent attention, your body should remain oriented toward the student and eye contact should be maintained as much as possible.

The presentation of a task or demand is not considered noncontingent attention and should also be avoided. This could include any question or statement that requires the student to engage in another behavior.”

“Now I am going to give you a task list for you to refer to. This list includes skills that you will need to implement noncontingent attention.”

Rehearsal

“Now it is your turn to try these skills.”

“I am going to set this timer for 5 minutes and you will provide me with noncontingent attention for the entire interval. It is okay to use your task list to assist you.”

Feedback

Following rehearsal, review each skill on the task list with the participant.

Provide positive praise prior to correction.

Provide detailed examples of ways to correct skills that need additional rehearsal.

Return to the rehearsal phase following feedback. Set the timer for only one minute and allow the participant to attempt the skills again. The skills will be considered mastered following the completion of all tasks in any rehearsal interval.

Appendix B: Task List

Task	Examples
Establish your attention and provide a time	“You have my attention for the next 10 frame. What would you like to talk about or do?”
Follow the student into whatever conversation or activity they prefer at the time.	
Provide a verbal prompt if the student fails to choose an activity or topic of conversation.	“Can you tell me what you did this weekend?”
Orient your body towards the student and maintain eye contact as much as possible.	
Avoid conversations with other students or teachers.	Face your body away from others to decrease the probability that they try to engage with you.
Avoid presenting a task or demand of any kind regardless of response effort.	“Will you close the door for me, please?”
Terminate the implementation of noncontingent attention with a statement of praise and the presentation of the next task or activity.	“I really enjoyed my time with you today. I think it might be time to start our math lesson.”

Appendix C: Social Validity Survey Items

1. The skills that were trained can be applied in my setting.
2. I understand the skills necessary to implement noncontingent attention following the training sessions.
3. I became more independent and confident in the implementation of noncontingent attention following the training sessions.
4. Questions regarding this activity were answered promptly and sufficiently.
5. I have access to all the necessary materials for the implementation of noncontingent attention.
6. I received sufficient verbal instruction during the training sessions.
7. I was offered sufficient opportunities for rehearsal during the training sessions.
8. I received sufficient feedback during the training session to improve my implementation of noncontingent attention.
9. The skills trained in the activity improved the culture in my setting in addressing difficult behaviors.
10. Noncontingent attention is an important variable to increase in the management of behavior in my setting.

Appendix D: Noncontingent Attention Integrity Checklist

Staff Skill	Record “yes,” “no,” or “no opportunity” and notes on skill
1. Attention is established and a time frame is provided.	
2. Allow the student to choose a preferred topic of conversation or activity	
3. Provide a verbal prompt and 2-3 choices for topics of conversation or activities if the student fails to make a choice.	
4. Body remains oriented towards the student.	
5. Frequent eye contact is maintained throughout the session.	
6. Avoid conversations with other teachers or staff members during the session.	
7. Avoid conversation, body orientation, and eye contact with other students during the session.	
8. No task was presented to the student during the session.	
9. A statement of praise is provided at the end of the session.	
10. Presentation of the next task is presented prior to attention being terminated.	

Appendix E: Social Validity Survey Results

Survey Items	Average Scores
1	4.33
2	5
3	4.67
4	4.67
5	5
6	5
7	5
8	5
9	4.67
10	4.33

Appendix F: Research Compliance Certificate

Date: 4-20-2023

IRB #: IRB-FY2022-355

Title: The Effectiveness of Behavior Skills Training minus the Modeling Component to Train Paraprofessionals to Implement Noncontingent Attention

Creation Date: 12-3-2021

End Date:

Status: **Approved**

Principal Investigator: Michael Clayton

Review Board: MSU

Sponsor:

Study History

Submission Type	Initial	Review Type	Expedited	Decision	Approved
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Key Study Contacts

Member	Michael Clayton	Role	Principal Investigator	Contact	MClayton@MissouriState.edu
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Member	Joshua Parrish	Role	Primary Contact	Contact	jp17@live.missouristate.edu
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Appendix G: Missouri State University Consent Form

I am asking you to participate in a research study titled “The Effectiveness of Behavior Skills Training minus the Modeling Component to Train Paraprofessionals to Implement Noncontingent Attention”. I will describe this study to you and answer any of your questions. This study is being conducted by Joshua Parrish at Missouri State University. The Faculty Advisor for this study is Dr. Michael Clayton, Ph.D., Psychology Department at Missouri State University.

What the study is about

The purpose of this research is to evaluate the effects of Behavior Skills Training without the modeling component in training paraprofessionals in a special education classroom to implement noncontingent attention.

What we will ask you to do

I will ask you to implement noncontingent attention and allow me to observe you doing so in your everyday classroom setting for three 10-minute sessions. Following the completion of these three observations, you will be asked to participate in a short training session that involves verbal instruction, an opportunity to practice this skill, and detailed feedback. Following the completion of this training session, three more 10-minute observation sessions will take place in the classroom where you will again be asked to implement noncontingent attention.

Risks and discomforts

I do not anticipate any risks from participating in this research.

Benefits

Possible benefits of participating in this study may include but are not limited to:

- Increased basic skills for classroom management.

Compensation for participation

No monetary compensation will be provided for participation in this research.

Privacy/Confidentiality/Data Security

In order to protect the confidentiality and privacy of all participants, names and all other identifiable information will be excluded from all publication and recorded data. The only individual who will have access to names, identifiable information, or contact information is the investigator conducting the study and training sessions.

Please note that email communication is neither private nor secure. Though I am taking precautions to protect your privacy, you should be aware that information sent through e-mail could be read by a third party.

Your confidentiality will be kept to the degree permitted by the technology being used. We cannot guarantee against interception of data sent via the internet by third parties.

Sharing De-identified Data Collected in this Research

De-identified data from this study may be shared with the research community at large to advance science and education. We will remove or code any personal information that could identify you before files are shared with other researchers to ensure that, by current scientific standards and known methods, no one will be able to identify you from the information we share. Despite these measures, we cannot guarantee anonymity of your personal data.

Identifiable information might be used for future research with obtaining your consent.

Taking part is voluntary

Participation in this research is not required and is entirely voluntary. You may refuse prior to the beginning of the study or request to discontinue your participation at any point during the study. In addition, you may request to skip or not participate in any procedures that may make you uncomfortable.

If you have questions

The main researcher conducting this study is Dr. Michael Clayton, a professor at Missouri State University. Please ask any questions you have now. If you have questions later, you may contact Dr. Michael Clayton at MClayton@missouristate.edu or Joshua Parrish at jp17@live.missouristate.edu.

You will receive a copy of this document after agreeing to participate and signing below.

Statement of Consent

I have read the above information and have received answers to any questions I asked. I consent to take part in the study.

Your Signature _____ Date _____

Your Name (printed) _____

Signature of person obtaining consent _____ Date _____

Printed name of person obtaining consent _____

This consent form will be kept by the researcher for five years beyond the end of the study.