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AN EXPLORATION OF THE USE OF FUNCTIONAL BEHAVIOR ASSESSMENT
AND NONCONTINGENT REINFORCEMENT ON DISRUPTIVE BEHAVIOR IN
MIDDLE SCHOOL GENERAL EDUCATION CLASSROOMS

by

Melody C. Andreasen

A creative project submitted in partial fulfillment of the requirements for the degree

of

MASTER OF EDUCATION

in

Special Education

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Logan, Utah
2014

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ABSTRACT

An Exploration of the Use of Functional Behavior Assessment and Noncontingent Reinforcement on Disruptive Behavior in Middle School General Education Classrooms

by

Melody C. Andreasen, Master of Education

Utah State University, 2014

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Department: Special Education and Rehabilitation

Teachers sometimes experience problems with disruptive behavior in their classrooms. These aberrant and socially mediated behaviors can be difficult for teachers to manage without the proper research-based skills and training. This project explored the effects of training general education classroom teachers to conduct a functional behavior assessment and deliver noncontingent reinforcement (NCR) for disruptive classroom behavior(s). Participants included four middle school general education teachers and four students who have been identified by each teacher as exhibiting disruptive behavior(s). Procedures included four hrs of teacher training on conducting functional behavior assessments and delivering NCR followed by a post-training questionnaire and rubric based role play to determine the readiness of the teacher to proceed with implementation. Pre-intervention data on the target students was collected by the researcher while the teacher conducted class as usual. Next, the intervention was initiated and data were

collected by the researcher and an independent observer trained by the researcher to determine the impact of the intervention on student behavior. The NCR intervention produced decreased disruptive behavior(s) for all student participants. The results obtained indicate training teachers to conduct functional behavior assessments and implement NCR interventions for reducing disruptive behavior(s) has potential to be a viable tool.

(47 Pages)

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Introduction

Aberrant and socially mediated behaviors (i.e., class disruptions, talk-outs, aggression and self-injury) are serious problems in school settings (Myles & Simpson, 1998). Teachers rely on motivational strategies and established classroom organizational routines to maintain a successful learning environment (Clark & Elmore, 1981; Hoetker & Ahlbrand, 1969 as cited in Fuchs, Fuchs & Bishop, 1992). As the diversity of students in public school increases, the need for more instructional adaptation, including behavior management for disruptive behavior is needed. It is difficult for teachers to manage the aberrant behaviors without proper skills and training (Myles & Simpson, 1998). The lack of necessary skills leads to increased stress for the teacher. This, in turn, transfers to the students and creates an environment that is not conducive to learning. Classroom management interventions such as precision commands, time out, referral to administration, and in school suspension have limited effectiveness for more complex behaviors (e.g., swearing, physical aggression towards peers or teacher, and destruction of school property) than the more common out-of-seat, lack of preparedness for class, and talking to peers during directed instruction. Effective interventions are needed for complex problem behaviors.

Noncontingent reinforcement (NCR), a fixed-time schedule of delivering reinforcement, is effective in the treatment of aberrant and socially mediated behaviors following a functional behavior assessment (Broussard & Northup, 1995; Carr, et al., 2000; Banda, Hart, & Kercood, 2012).

The majority of research to date has been conducted in controlled clinical settings with participants diagnosed with developmental disabilities (e.g., autism, attention deficit hyperactivity disorder, and mental retardation) and within the age ranges of 5 through 8 or 18 and older (e.g., Broussard & Northup, 1995; Hanley, Piazza, & Fisher, 1997; Banda, Hart, & Kercood, 2012). The Carr, et al, (2000) review of NCR treatment states that “the most important NCR research area that has not yet been adequately explored is the transfer of findings from extremely controlled clinical settings to the natural environment” (p. 388). To date, few studies have been conducted in the classroom (e.g., Broussard & Northup, 1995; Austin & Soeda, 2008; Waller & Higbee, 2010; Banda, Hart, & Kercood, 2012) to evaluate the effects of NCR after a functional behavior assessment. While NCR is an intervention with documented success for addressing aberrant and socially mediated behaviors of persons with developmental disabilities and elementary age students with learning and behavior difficulties, it is necessary for additional research in naturalistic settings to determine the efficacy and ease of use in secondary general education settings.

Broussard and Northup (1995) examined functional behavior assessments and functional analysis of disruptive behavior for three students in regular education classrooms. In this study they were examining the possibility of functional behavior assessments and functional analysis procedures used effectively in regular education classrooms for students considered at-risk for more restrictive placement educationally.

Three students between the ages of 6 and 9 years were chosen to participate in the study based on criteria which included students attending a regular education classroom,

an average range of intellectual functioning and considered at risk for special education placement.

Keith, an 8-year-old male in the second grade who had repeated the first grade, had the following target behaviors defined, based on a teacher interview and informal observation, as talking out, hand and arm gestures to other students, and work incompleteness. During the study he was not receiving any medication or special education services.

Mark, a 6-year-old male in the first grade, was identified to have the following target behaviors, based on teacher interview and informal observation, getting out of seat, talking out, and aggression toward other students (hitting). Mark was not taking any medication or receiving any special education services during the study.

Jimmy, a 6-year-old male in the first grade, had the following target behaviors identified during a teacher interview and an informal observation; playing with, and destruction of, school materials, crying, noncompliance and refusal to complete academic work. Jimmy has a diagnosis of attention deficit hyperactivity disorder and received 10 mg of Ritalin three times daily during the study. He was not receiving any special education services, however an evaluation for services was being conducted at the time of the referral to the study.

Additionally, the amount and accuracy of academic work completed by each student during observation periods were tracked to assess the correspondence between the target behaviors and academic work.

A descriptive assessment consisting of a teacher interview, classroom observations, and a review of academic records was conducted to provide an basis for selecting one of three hypotheses concerning the classroom variables (i.e., teacher attention, peer attention, escape) most likely maintaining the target behaviors. These results were then used to select the tasks and procedures used in a subsequent functional analysis.

One hypothesis was selected for each student for further evaluation based on the criteria: (a) during classroom observations, the associated consequence was most likely to occur following the target behavior, and (b) for academic task escape, target behaviors occurred more frequently for during more difficult academic tasks than those considered to be easy. If the functional analysis did not confirm the hypothesis, the same selection criteria would be used to select another. In this study, the initial hypothesis was confirmed during the functional analysis.

A functional analysis was conducted by the investigator (therapist) who had been introduced to the students and interacted with them as a “teacher’s aide”. During the functional assessment, the classroom teacher was instructed to withhold all attention from the participants while the participant was to continue to participate with the class.

Contingent and noncontingent teacher attention conditions were used during the functional assessment to evaluate the hypothesis of teacher attention maintaining disruptive behavior. Contingent attention included disapproving statements (e.g., “Pay attention to your work,” “Go to your seat”) by the therapist following each occurrence of the target behavior. Approving comments by the therapist (e.g., “Good job”, “I like the way you’re doing your work”) were provided every 60 s independent of the student’s

behavior during the noncontingent teacher attention. All occurrences of the behaviors were ignored.

The condition of no peers present (no peer attention) or two peers present was created to evaluate the hypothesis of peer attention as a reinforcer. Informal observations of previous interactions between the student participant and his peer led to the choice of two peers that would likely respond to any occurrence of a target behavior. An easy academic task was used during the two conditions, with the setting an empty classroom nearby with only the observers present. In the no peer session, the student was given only the instruction to complete the work. In the peer present session, the peers sat adjacent to and facing the participant and all were given only the instruction to “work quietly and complete these worksheets.”

For the hypothesis of escape from academic tasks, two conditions were conducted in which only the level of task difficulty was changed. The participant was given a difficult, nonpreferred task (worksheets) and the second condition used an easy, preferred task. During the difficult task condition, contingent escape was provided by the therapist removing the task from the student’s desk and turning and moving away from the student for a period of 1 min following the target behavior or the therapist, if the instructional materials were pushed away, allowed the student 1 min to remain off task.

The results of this study show that, for all three students, the target behaviors were near zero occurrences when conducting the contingency reversals. Additionally, the correspondence between a reduction in target behaviors and an increase in academic work completion and accuracy. Results also demonstrate that controlled FBA conducted

using students with average intellectual function in a regular education classroom are feasible.

Limitations to this study included the impossibility of replicating all FA conditions in the regular education classroom. While the contingency reversals provide some evidence of a potentially effective treatment approach, more evaluation is needed.

Individually selecting specific variables on the basis of a descriptive assessment followed by a functional assessment to confirm the results, demonstrates a comprehensive approach to functional assessment.

Banda, Hart, and Kercood (2012) studied decreasing disruptive vocalizations of a student with high-functioning autism in multiple general education classrooms.

Bryan, a third grade student diagnosed at age 3 with infantile autism, demonstrated delayed speech acquisition but, by third grade, was highly verbal. Academically, Bryan was on grade level with his peers and achieved As and Bs without academic modifications. He also passed state-based standardized tests for his grade level. The result was placement in a general education setting with inclusion support, to help remain focused and be quiet, from a special education teacher.

In the classroom, Bryan's vocal behaviors included calling out to the teacher, complaining about work tasks, growling, yelling, etc. These behaviors resulted in removal from the classroom for brief or extended periods of time.

The study occurred in a public school in a general education third grade classroom. The math teacher was also Bryan's homeroom teacher. The students, as a group, rotated among three classrooms and teachers to receive instruction in homeroom/math, reading,

and language arts. The student's spent a period of 60 min in each classroom for each rotation. Each classroom consisted of one teacher, one instructional aide, 15-20 students, and, on occasion, a support teacher.

Disruptive vocalizations were examined during the study and were separated into word and nonword categories. Word vocalizations included yelling or blurting words and phrases, whining or complaining about a task, or protesting a task. Nonword vocalizations included screaming, growling, and roaring.

Baseline data was collected for disruptive vocalizations using frequency count during three 45-min sessions during math, reading, and language arts instruction. Antecedent-Behavior-Consequence (A-B-C) recordings were taken during math, reading, and language arts instruction as were observations of interactions between Bryan and the teacher in each class. The results were a clear pattern of attempts to gain the teacher's attention across all classrooms. Additional information was collected from the completion of multiple assessment tools (e.g., Motivation Assessment Scale (Durand & Crimmins, 1992), Functional Assessment Interviews (Umbreit, Ferro, Liaupsin, & Lane, 2007) and a Student Behavior Interview (Umbreit et al., 2008) as cited in Banda, Hart, & Kercood, 2012) which all indicated the function of Bryan's vocalizations were an attempt to gain the teacher's attention.

A functional analysis was not conducted as a result of the school's request for immediate intervention. Also, the functional behavior assessment, using multiple assessment tools, gave a clear function of the behavior.

Teachers were trained to implement noncontingent attention (NCA) and were instructed to provide it during each 5-10 min portion of instruction. The NCA was delivered by the teacher walking over to Bryan and speaking to him individually. Some examples of NCA delivered to Bryan are “You are working hard, Bryan!”, “Do you need any help?”, and “Thank you for raising your hand.” Disruptive vocalizations were ignored. Additionally, each teacher used physical proximity at least once during each 5-10 min portion of instruction and environmental modifications, moving Bryan to the front of the class, were included to better support the NCA delivery.

The overall results of the intervention indicated a considerable decrease in the target behavior of the participant.

The consistent implementation of the intervention by all three teachers, and the ease of that implementation indicate the feasibility of use in various general education settings by multiple general education teachers particularly for students with Autism.

The use of an AB design in this study was a result of the need to implement the intervention immediately but, the recommendation would be for future research to use multiple baseline or other designs that show a strong functional relation. The author also indicates that, the collection of long-term data would have indicated durability of the intervention and effectiveness over time.

The previous two studies included different density schedules for intervention delivery while still achieving the desired reduction in disruptive behavior. Most reinforcement schedules are initially dense to correspond with the baseline schedule of disruption. These dense schedule requirements have been a major concern for the use of

NCR in the general and special education classroom. Austin and Soeda (2008) had a possible solution to the dense reinforcement schedules used in NCR studies and their practicality for classroom use. They asked a teacher to identify two third-grade boys who displayed frequent off-task behavior (i.e., calling out or engaging in one of the following behaviors for more than 3 s: coloring or drawing not appropriate to the assigned task, talking with peers, taking one's eyes off the teacher or task, or getting out of one's seat) as participants in their study. Andrew, a 9-year-old boy identified as having a Specific Learning Disability and receiving special education services and David, an 8-year-old boy classified as a general education student who is not receiving special education services were selected.

An ABAB design was used in all sessions for this study. The setting was in a language arts class which included both individual and group reading and writing activities. However, toward the end of the second NCR phase, David was in the same classroom but with different peers and the academic subject was math while Andrew was in a different classroom with a different teacher.

A functional assessment was conducted and it was determined that the reinforcer of the behavior was teacher attention for both participants.

The authors of this study not only wanted to determine the effects of an FT NCR on typically developing students, but also dispel the common idea that the FT schedule must be very dense in order to see similar results as in past studies. To determine a schedule that would fit with the teacher's current teaching model, the treatment rationale and procedures were presented to the teacher so as to provide the authors with a schedule that

she felt comfortable using. The teacher and authors agreed on a 4 min FT schedule tracked by using a timer with a vibration cue. The teacher was to provide individual brief attention to each boy appropriate to the behavior at the interval time (i.e., redirect for inappropriate behavior and praise for on-task behavior). The teacher alternated between the two boys and ignored behavior, appropriate and inappropriate, between intervals.

The results of this study serve as another indicator of the efficacy of NCR, and especially NCR used outside of the highly controlled clinical setting. Additionally, findings illustrate successful implementation of NCR with different behavioral functions (i.e., adult attention vs. peer attention or escape), a less dense schedule, and include the positive effect on typically developing students in a general education classroom.

As more studies are conducted in more naturalistic settings, “NCR will likely be established as one of the most effective treatments for aberrant behavior that has been reported in years” (p. 388, Carr, et al, 2000).

Exploration Statement

Teachers need research-based behavioral interventions that have maximum impact with minimal changes to their established routines. Teachers also need the ability to identify the function of the aberrant behavior to successfully implement NCR (OSEP Center on Positive Behavioral Interventions, Sugai et al, 2000). The purpose of this project was to train general education teachers to conduct a functional behavior assessment and implement NCR in their general education middle-school classrooms to decrease disruptive behaviors.

Method

Participants and Settings

Teacher Participants. Four general education teachers and four middle school students at a rural middle school in the western United States agreed to participate in this project. The middle school serves approximately 865 students in the seventh and eighth grades, and the student population is primarily Caucasian.

Ms. W, Caucasian, in her mid-twenties, is a third-year language arts teacher. Her first year of teaching was in a small rural town in the western United States where the majority of the students are Hispanic children of migrant workers. She taught language arts to dual language learners in the eleventh grade. Ms. W's classroom is approximately 5.5 m x 5.5 m with 33 individual desks in columns and a teacher's desk at the front of the room. There is a whiteboard at the front of the room and at the back of the room. There is a roll down projection screen on the front wall that can be used for viewing items from the document camera or the teacher's computer. One wall has a section of cabinets.

Ms. C, Caucasian, in her mid-thirties, has been teaching science for more than 12 years at the middle school level. She has been a district new teacher mentor and is currently the building new teacher mentor. She recently was awarded science teacher of the year for the school district. She has been teaching in one of the three middle schools in the same county for her entire career. Ms. C's classroom is approximately 6 m x 6 m with 20 tables, approximately 1 m x 2 m, used for student desks and 40 individual student chairs. The tables are arranged in rows and face the front of the room where there is a whiteboard, a smart board and the teacher's desk. Two walls have 1 m tall cabinets with

two sinks spaced evenly. The remaining wall has floor to ceiling cabinets. The back wall also has a fume hood and an eye wash/contamination shower area.

Mr. G, Caucasian, early fifties, has been teaching social studies in the same middle school his entire teaching career of just over 5 years. Mr. G's classrooms are approximately 5.5 m x 5.5 m with 33 individual desks in columns and a teacher's desk at the front of the room. There is a whiteboard at the front of the room and at the back of the room. There is a roll down projection screen on the front wall that can be used for viewing items from the document camera or the teacher's computer. One wall has a section of cabinets.

Ms. S, Caucasian, early fifties, has been teaching physical education in middle school for more than 15 years. She has just completed her Masters in School Counseling. Ms. S uses the gymnasium and weight room for her classes. The gymnasium has a full basketball court and can seat approximately 1000 spectators. The weight room is approximately 2 m x 2.5 m and contains free weights and weight machines. Music can be played in both areas via a public address system.

All classrooms in the school, including the gym and weight room, are equipped with voice enhancement systems and all teachers are required to use them during all classes.

Student Participants. Four middle school students who were identified by the teacher participants served as the target students in this study.

The teachers were given a definition of disruptive behavior as follows: A behavior that disrupts the flow of instruction. Example of behaviors are, out of seat at

inappropriate times and without permission requiring the teacher to redirect, talk outs that are off subject or inappropriate at the time which generally move the students away from the current instruction, and going in and out of the classroom without permission .

Another consideration of determining if a behavior is disruptive includes the duration of occurrence is longer than 5 s, increases in volume, and occurs more than 3 times per class period. The teachers were then asked to identify one student for the study based on the definition. I then observed the teacher's student choices and found that an additional training phase that focused on the definition of disruptive behavior using examples and non-examples was required as the teacher's initial student choices included behaviors such as "pen-clicking," infrequent talk-outs, and off-task. After the training, the teachers then identified a new student and I conducted observations to assure behaviors met the definition.

Ms. W's student, Billy, is a 13-year-old Caucasian eighth grade male student in an English language arts general education classroom. Neither he nor his identical twin has a known diagnosis or classification of a disability. Billy had off-topic talk-outs an average of nine times per 15 min observation. He also was out of his seat, walking around the classroom disrupting the teacher (i.e., sharpening his pencil, talking to peers, asking if he could use the restroom) an average of five times per 15 min observation (Figure 1).

Ms. C's student, Craig, is a 12-year-old Caucasian seventh grade male student in an integrated science general education classroom. He has been diagnosed with attention deficit hyperactive disorder but does not require specialized instruction to adequately progress academically. Craig had talk-outs to gain his teacher's attention (i.e., ask an off-

topic question, ask if he can hand out papers, ask for the instructions for the task multiple times) an average of five times per 15 min observation. Craig was also out of his seat, walking around (i.e., asking the teacher if he could use the restroom, asking if he was doing his work correctly, asking her to repeat the task instructions, requesting help) an average of three times per 15 min observation (Figure 2).

Ms. S's student, Juan, is a 13-year-old Hispanic eighth grade male in a general education weight training class. He has no known diagnosis or classification of a disability. Juan disrupted the class in various ways (i.e., leaving the weight room to go play basketball with another class, walking around the room and talking with peers while doing timed rotations where he needed to record his partners performance, using the drinking fountain in the hall rather than in the weight room, going to the restroom without permission) with no one single disruption that was occurring more often than the others. The sporadic attendance of the student during this exploration led the student researcher to determine that further discussion of this student would not be included due to a lack of data.

Mr. G's student, Ben, is a 13-year-old Caucasian eighth grade male student in a U.S. History general education classroom. He has no known diagnosis or classification of a disability. Ben had various types of talk-outs (i.e., call across the room to a peer, shout out answers, ask off-topic questions, shout out random statements) an average of 14 times per 15 min observation. Ben also disrupted classroom instruction as well as independent work time by going to talk with his peers, making random loud noises, laughing for no reason, banging his binder on the desk, and talking back to the teacher. The overall

amount of instances of the above behaviors was an average of eight per 15 min observation. Ben did not walk around the room at inappropriate times but he would sit in a seat by a peer that was not his assigned seat and refused to move when the teacher requested he do so (Figure 3).

Procedures

Teacher Training

The first training session included a PowerPoint® presentation listing examples and non-examples of disruptive behaviors and their specific definitions (Appendix A) which were discussed as a group. This training session occurred on a Monday during teacher collaboration time in the early afternoon and lasted for 60 min. The next training session occurred on a Monday during teacher collaboration time in the early afternoon and lasted for 70 min. It included a PowerPoint® presentation giving the history, common uses, and potential problems of a functional behavior assessment, and how to conduct a functional behavior assessment using a Problem Behavior Questionnaire (PBQ) (Lewis, Scott, & Sugai, 1994) (Appendix B). The teachers were given information on an imaginary student and asked to fill out the PBQ for that student. The completed assessments were reviewed as a group and any differences across the four teachers' analyses were discussed.

For the final training session, held on a Monday during teacher collaboration time in the early afternoon, the student researcher presented a PowerPoint® presentation detailing the history, uses, and proper classroom implementation of NCR based on results of a functional behavior assessment. Teachers were given scenarios which included an identified function and asked to formulate possible reinforcers. They then took turns role

playing the delivery of NCR to practice the process while the student researcher observed and modeled. We discussed why some of the identified reinforcers would work better than others and, as a group, identified additional reinforcers and a justification for each. We also discussed the different ways NCR can be delivered based on personal style of the teacher, specific student behaviors, the environment, and the desired outcomes of the intervention.

After the teachers completed the NCR role playing, the student researcher completed the rubric (Appendix C) on each teacher and administered a content knowledge test (Appendix D) to determine their level of understanding and readiness to implement NCR in their classroom. The determination of readiness was a minimum score of 85% on the content knowledge test and a minimum of 16 on the role-play rubric (Appendix E).

Once the teachers successfully completed the training, they completed a PBQ for their student. Together with the student researcher, they scored the data from the PBQ and analyzed the results. The results were then compared with the description of the behaviors recorded during the original observations, and the function of the behavior was determined. The teachers then wrote an operationalized description of the behavior(s) they were going to target. Ms. W wrote, "During independent work time, Billy will shout out random statements, walk around the room, sharpen his pencil excessively and/or for excessive periods of time, talk to peers, and request to use the bathroom multiple times during the work period." Ms. C's definition was, "During direct instruction, Craig asks off-topic questions. During independent work time, Craig will ask for one-on-one help

whether he needs it or not. He will get out of his seat to ask the teacher if he can use the restroom, or if he can help, or if he is doing his work correctly.” Mr. G described his student’s behaviors as, “During direct instruction and independent work time Ben will shout out random statements, shout to a peer across the room, talk loudly to himself, make random noises, change seats, and walk around without permission to sharpen pencil, look at papers, or talk to peers.”

Due to the fact that this exploration was conducted at the end of the school year, data collection opportunities were limited and therefore, the hypothesis behavioral function was not further verified by a functional analysis.

Finally, each teacher developed a written plan including the FT interval to deliver the reinforcer(s) and a list of reinforcer(s) to be used based on the results of the functional behavior assessment and operationalized description of the behavior. The FT interval was derived from the baseline interresponse time (IRT) and a schedule that the teacher determined would accommodate his/her planned classroom activities and cause minimal or no disruptions to the teaching schedule (Austin & Soeda, 2008). I then trained the teachers to use a MotivAider®, a countdown timer with a vibrating alert, for use during the implementation of NCR.

Intervention

Baseline. The language arts teacher conducted her class as usual using redirection, reprimands, reduced participation points, out of class time-outs, and referral to administration. The science teacher conducted class as usual using redirection, precision commands, out of class time-outs, proximity praise, ignoring, and referral to

administration. The history teacher conducted class as usual using reminders, redirection, reduction in participation points, other class time-out, time-out in hall, reprimands, ignoring, and referral to administration. The P.E. teacher also conducted class as usual using reminders, redirection, in class time-out, precision commands, referral to in school suspension, ignoring, and referral to administration.

Intervention. Each teacher wore a countdown timer with a vibrating alert. When the student researcher and interobserver were conducting the observations, they each used a regular timing device to verify FT intervals were used. To assure fidelity of use by the teacher, the student researcher did not give the teachers a schedule of when the observation sessions would take place. This caused the teacher to set the timer for the identified FT interval and start the timer when class began. By employing the intervention the entire class period, two things were achieved; (a) the teacher became more comfortable and proficient with the use of NCR, and (b) the intervention did not suddenly start when the observer came in thereby alerting the students to what was taking place. The teacher delivered the NCR when the device alerted. The language arts teacher used escape reinforcers, determined by the results of the functional behavior assessment, which included assisting teacher, run errand, 15 s break at desk, removal of a part of the assignment, and the choice of which task to begin first. The history teacher used peer attention reinforcers, determined by the results of the functional behavior assessment, which included the teacher verbally cueing the student that they would be answering a specific question, verbal acknowledgement of good work, student giving verbal reports to the class, student choice of team members for group activities, and assist the teacher

during direct instruction. Just prior to implementing NCR, the teacher changed the student's assigned seat and this reduced some of his behavior. The science teacher used adult attention reinforcers determined by the results of the functional behavior assessment, which included handing out and collecting papers, collecting supplies for activity, teacher verbal praise, one-on-one instruction, and special assignments for group activity (e.g., note taking, artist).

Dependent Measure

The dependent measure was the rate of disruptive behavior during a 15 min behavior observation within the 70 min class period. Disruptive behaviors included excessive talk-outs, out-of-seat, random vocalizations, talking loudly to peers, physical contact with peers, throwing things, verbal aggression toward teacher, and non-compliance.

Exploration Design

Pilot observation before and after a functional behavior assessment and NCR intervention.

Treatment Integrity

To ensure teacher participants were implementing the intervention as trained, the student researcher annotated the time intervals and intervention used at that interval on the same observation sheet used to collect the student data. (Appendix F). These notes were then compared to the implementation schedule for the individual teachers to determine treatment integrity. Ms. W delivered the reinforcers chosen with 100% while the FT schedule was used with 90% accuracy. Ms. C's scores were 90% on reinforcers

and 95% on FT accuracy. Finally, Mr. G delivered the identified reinforcers with 90% accuracy and his FT accuracy was 98%.

Inter-Observer Agreement

A paraeducator with more than nine years of classroom observation experience was chosen as an independent second observer and was trained with verbal instructions from me. She then performed practice observations of several different students in several different classroom settings to assure adequate training had been done. The independent second observer, once training was complete, simultaneously recorded data on the rate of student behavior(s) displayed during the sessions. The data was visually compared to the data collected by the student researcher. The total count interobserver agreement was 90%.

Data Analysis

The data on student behavior collected during pre- and post-intervention phases were recorded on a graph and visually analyzed to determine if the rate of the target behavior was reduced during the intervention phase.

Results

Figure 1 displays the results of NCR intervention during two observed sessions with Ms. W and Billy. It was determined through the functional behavior assessment that Billy's behavior reinforcer was task escape (e.g., during independent work time he makes inappropriate or off-topic comments, sharpens his pencil multiple times, walks around the room talking with peers, asks the teacher repeatedly if he can use the restroom, requests to go to his locker). The teacher used a variety of reinforcers during the class period

which resulted in a decrease in Billy's disruptions from an average of 20 per 15 min session to an average of four per 15 min session. This shows a reduction in his escape reinforced disruptions of more than 90%.

In Figure 2, the results of the NCR intervention for Craig's behavior reinforcer of teacher attention, determined after the functional behavior assessment was completed, indicates that the reinforcers chosen by the teacher were effective and reduced his attention seeking behaviors (e.g., asking off-topic questions, asking to help the teachers with jobs such as passing out supplies, asking for assistance multiple times, asking if he was doing his work correctly) by 60% overall. It is important to note however that during the second observation session, the student researcher observed for the entire 15 min session however, the class began a lab project in which the students were going to be going from one area of the room to another to different "stations" to observe different elements of the lesson. During this time, the students were allowed to talk and work with each other while the teacher walked around the room observing and assisting in the procedure. This affected the data collection for a portion of the observation period.

Ben's results in Figure 4 illustrate the choice of reinforcers by the teacher, using the results of the functional behavior assessment, were effective in reducing the peer attention disruptions (e.g., during direct instruction and independent work time he would shout out random statements, ask off-topic questions, shout out incorrect answers) by approximately 47%. His out-of-seat disruptions (e.g., during direct instruction and independent work time he would walk around the room talking with peers, making random noises, laughing for no apparent reason, grabbing stuff off of other students desks

then laughing when giving it back) were reduced by 100% and his other disruptions (e.g., talking back to the teacher, banging his binder on the desk, not sitting in assigned seat or continuously changing seats throughout the class period) were reduced by 54%.

Discussion

Given these results, it is evident that (a) the training in functional behavior assessments and NCR for the general education teachers was adequate; (b) the trained teachers accurately identified the function of the student's disruptive behavior (e.g., teacher attention, escape, peer attention) and successfully implemented NCR for the function of the behavior; (c) the participant students disruptive behavior(s) were reduced significantly illustrating a similar efficacy between NCR in the general education classroom and NCR in a controlled clinical environment; (d) the implementation across various school subjects by general education teachers trained in functional behavior assessments and NCR were done with ease and minimal disruption to the classroom routine; and (e) length of teacher experience does not determine success.

The ability to train teachers in basic functional behavior assessments will give them a research-based, viable tool which can be used when a student's disruptive behavior does not respond to traditional classroom management interventions (i.e., precision commands, seat away, and referral to administration). Extending teacher training to include implementation of NCR after a functional behavior assessment makes available a research-based behavioral intervention that has maximum impact with minimal disruption to the established classroom routine. Additionally, as the incidence of typically developing students with extreme aberrant behaviors and the inclusion of

students with emotional disabilities and oppositional defiance disorder continue to rise, these additional skills will assist teachers in maintaining an environment conducive to learning.

If this had been a study rather than an exploration, there are several limitations that have been identified. The first is an inadequate number of sessions per phase. Another is the length and type of teacher training. While the 2.5 hr were adequate in this exploration, more time may be required to give teachers ample time to understand and gain adequate proficiency before implementation. Additionally, there was an assumption that the teachers had no knowledge of functional behavior assessments or NCR. A pre-test should be administered to determine the knowledge level of the teachers. The next limitation is the use of only one student participant per teacher participant. The chosen student could withdraw from the study, have increased absences, or be moved to a different class or teacher leaving the participant teacher with no student to work with. Further, low fidelity in implementing NCR could be a limiting factor and would have to be closely monitored. An additional limitation was the absence of a preference assessment which would have verified that the reinforcer the teacher chose was actually reinforcing to the student.

Conclusion

Based on the results of this exploration, the ease of implementation, the minimal training time, and, the ability to use NCR across various classroom environments and teacher skill levels, makes the need for in-depth research imperative. This research should include the

trained teachers identifying another student and repeating the process to determine the continued independent use by trained teachers. Future research may also include an increase in overall teacher training time or just that of one area to better prepare the teachers for implementation; increase the number of student participants to reduce the effects of a student that does not complete the study by allowing the teacher to complete the study; observing a student participant in more than one of his/her classes to determine if NCR generalizes; and, replicating this study in the elementary and high school grades to determine the efficacy when implemented across different ages and environments indicating the value of the functional behavior assessment and NCR training and implementation.

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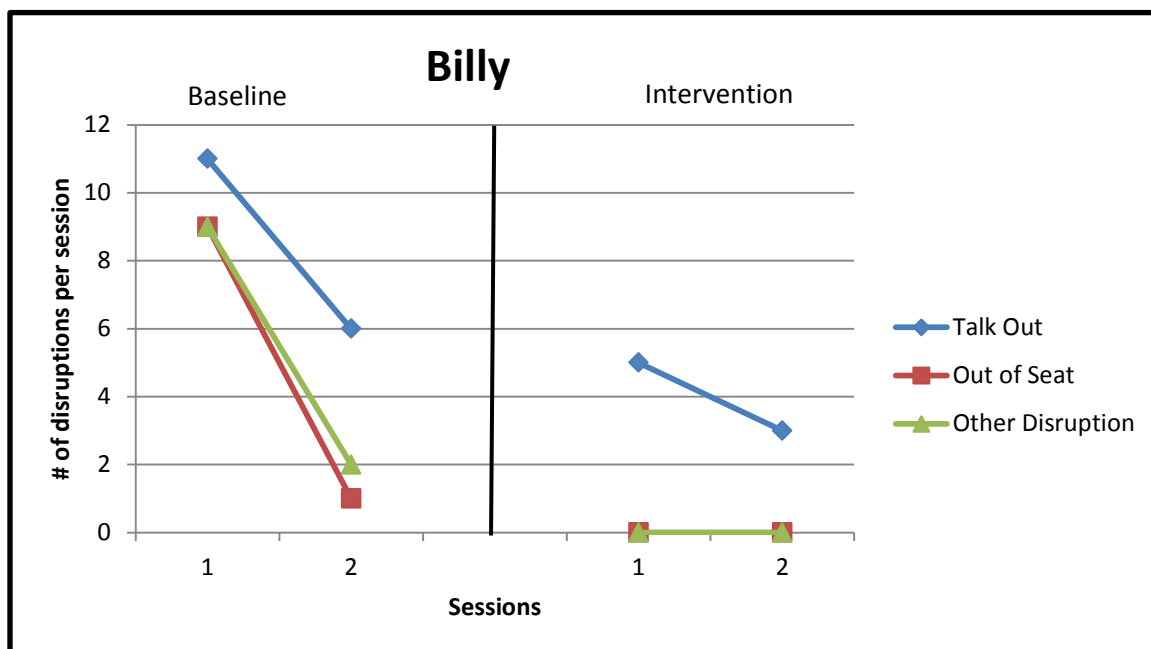


Figure 1. Comparison of total disruptions by type and session during the baseline and intervention phases.

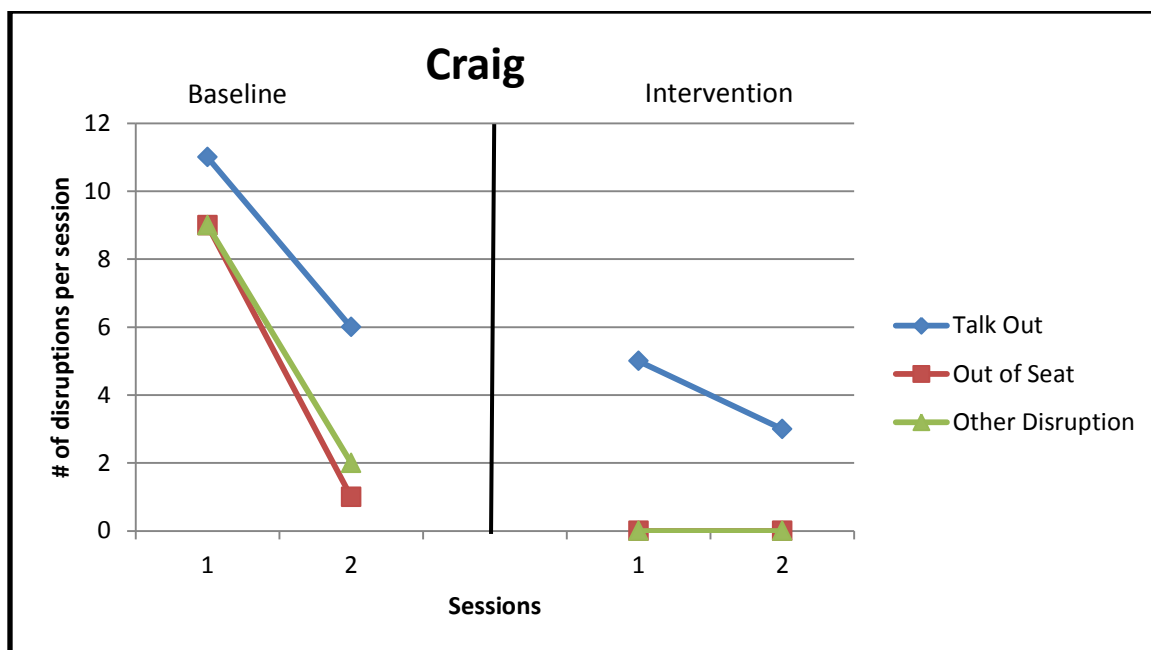


Figure 2. Comparison of total disruptions by type and session during the baseline and intervention phases.

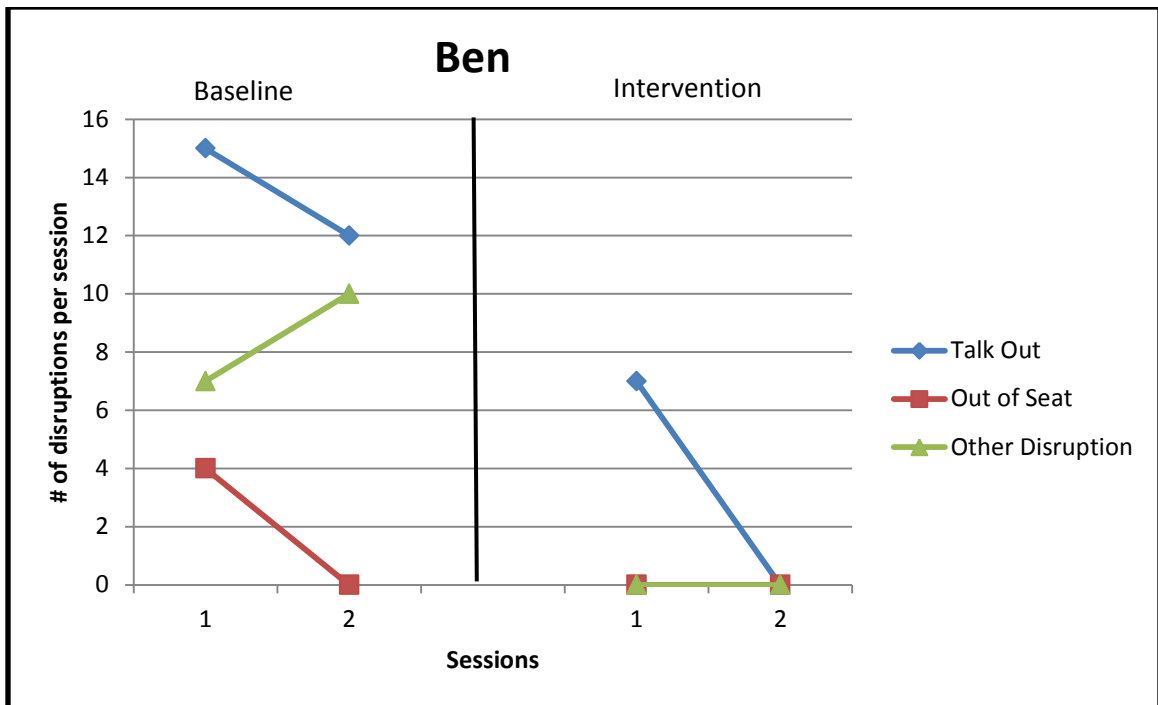


Figure 3. Comparison of total disruptions by type and session during the baseline and intervention phases.

APPENDIX A
Problem Behavior Questionnaire

Student _____
School _____

Teacher _____ **Grade** _____
Date _____

Interviewer _____

Specific Behavior Description:

Directions: Keep in mind a typical episode of the problem behavior, circle the frequency at which each of the following statements are true.

	Never	10%	25%	50%	75%	90%	Always
1. Does the problem behavior occur and persist when you make a request to perform a task?	0	1	2	3	4	5	6
2. When the problem behavior occurs do you redirect the student to get back to task or follow rules?	0	1	2	3	4	5	6
3. During a conflict with peers, if the student engages in the problem behavior do peers leave the student alone?	0	1	2	3	4	5	6
4. When the problem behavior occurs do peers verbally respond or laugh at the student?	0	1	2	3	4	5	6
5. Is the problem behavior more likely to occur following a conflict outside the classroom (e.g., bus write up)?	0	1	2	3	4	5	6
6. Does the problem behavior occur to get your attention when you are working with other students?	0	1	2	3	4	5	6
7. Does the problem behavior occur in the presence of specific peers?	0	1	2	3	4	5	6
8. Is the problem behavior more likely to continue to occur throughout the day following an earlier episode?	0	1	2	3	4	5	6

9. Does the problem behavior occur during specific academic activities?	0	1	2	3	4	5	6
10. Does the problem behavior stop when peers stop interacting with the student?	0	1	2	3	4	5	6
11. Does the problem behavior occur when peers are attending to other students?	0	1	2	3	4	5	6
12. If the student engages in the problem behavior do you provide one-to-one instruction to get the student back on-task?	0	1	2	3	4	5	6
13. Will the student stop doing the problem behavior if you stop making requests or end an activity?	0	1	2	3	4	5	6
14. If the student engages in the problem behavior, do peers stop interacting with the student?	0	1	2	3	4	5	6
15. Is the problem behavior more likely to occur following unscheduled events or disruptions in classroom routines?	0	1	2	3	4	5	6

APPENDIX B

FBA/NCR Content Knowledge Test

Instructor: Melody C Andreasen Name: _____
Class: Teacher PD Date: _____
Period: _____ Results: _____

Instructions

Read each question carefully and circle the letter for the best answer(s).

Part I: Purpose of FBA

- 1) _____ **What is the main purpose of an FBA?**
- a. Give me something else to do.
 - b. Identify the reinforcement for an undesired behavior.
 - c. Identify the problem behavior.
- 2) _____ **Behaviors are:**
- a. Punishable
 - b. Premeditated
 - c. Learned
- 3) _____ **One type of behavior is:**
- a. Confused
 - b. Overt
 - c. Introspective

Part II: Defining Problem Behaviors

- 1) _____ **The definition of a behavior MUST be:**
- a. Written
 - b. Observable

- c. Measurable
 - d. Observable & Measurable
- 2) _____ **Measurable includes:**
- a. Ability to touch it
 - b. Distance
 - c. Counted & Timed
 - d. Counted or Timed
- 3) _____ **Which of the following is NOT a behavior?**
- a. Defiant
 - b. Hungry
 - c. Beautiful
 - d. Confused
- 4) _____ **To be observable a behavior MUST be (select all that apply):**
- a. Obvious
 - b. Seen
 - c. Overt
 - d. Chronic

Part III: Functions of Behavior

- 1) _____ **The TWO major categories of problem behavior function are:**
- a. Obtain/Get something
 - b. Poor grades
 - c. Escape/Avoid something
 - d. Lack of motivation
 - e. Parental approval

- 2) _____ **One thing problem behavior can avoid:**
- a. Lunch
 - b. Physical demand
 - c. Bad grades
 - d. Boredom
 - e. Leaving class early
- 3) _____ **ABC as it pertains to FBA stand for:**
- a. After, Before, Concurrent
 - b. Alone, Beside, Content
 - c. Amaze, Bedazzle, Control
 - d. Antecedent, Behavior, Consequence
 - e. Attention, Behavior, Conclusion
- 4) _____ **A setting event happens:**
- a. Before the behavior
 - b. Before the consequence
 - c. Before your class
 - d. After the behavior
- 5) _____ **Why must an FBA be done before the intervention is begun?**
- a. It is easier
 - b. If you don't know why it is happening you cannot address it properly
 - c. It tells you what the behavior is
 - d. It helps you determine the student who needs the most help

Part IV: Noncontingent Reinforcement

- 1) _____ **What MUST be done in order to ensure success with NCR (select all that apply)?**
 - a. Determine the reinforcer
 - b. Determine the behavior
 - c. Implement intervention with fidelity
 - d. Evaluate the student for special education referral
 - e. Extinguish the behavior

- 2) _____ **Why does noncontingent reinforcement work (select all that apply)?**
 - a. Reduces or eliminates the need for the behavior
 - b. Reduces the need for the reinforcer
 - c. Shows the students who the boss is
 - d. Can be done with ease and simplicity
 - e. Affects other students positively

- 3) _____ **Who can give NCR to a student (select all that apply)?**
 - a. A principal
 - b. A classroom aid
 - c. Another student
 - d. A teacher

- 4) _____ **What ONE word guarantees success with any NCR intervention?**
 - a. Observable
 - b. Success
 - c. Fidelity

APPENDIX C

Teacher Training NCR Role Play Rubric

CATEGORY	5 Proficient	4 Strong knowledge	3 Continue to practice	2 Review Skills	1 Lacks understanding
Attention to Timer	Sets timer for identified time, approaches student on vibrate, moves at every alert, smooth transition.	Sets timer for identified time, approaches student at vibrate, moves at every alert.	Sets timer for identified time, approaches student at vibrate, misses alerts.	Sets timer for identified time, approaches student on 50% of alerts.	Sets timer for identified time, approaches student on 10% of alerts.
Reinforcement Delivery	Delivers reinforcement at every alert, uses correct reinforcement, smooth delivery, non-invasive.	Delivers reinforcement at every alert, uses correct reinforcement, some disruption to class.	Delivers reinforcement at every alert, uses correct reinforcement, causes disruption every delivery.	Delivers reinforcement at 50% of alerts, uses correct reinforcement 50% of time, causes disruption every delivery.	Delivers reinforcement at 10% of alerts, uses correct reinforcement 50% of the time, very invasive.
Attention to Target Behavior	Ignores target behavior for entire session.	Ignores target behavior 80% of session.	Ignores target behavior 50% of session.	Reinforces target behavior 10% of time.	Reinforces target behavior on all instances.
Self-evaluation	Feel confident in delivery of NCR with no coaching in or out of classroom.	Feel confident in delivery of NCR with reminder coaching out of classroom.	Feel somewhat confident in delivery of NCR with coaching in classroom.	Feel somewhat confident in delivery of NCR with coaching in and out of classroom.	Feel unprepared to deliver NCR successfully with or without coaching.

APPENDIX D

Content Knowledge Test and Role Play Rubric Scores

Teacher	Content Knowledge Test	Role Play Rubric
Ms. W	92%	18
Mrs. C	90%	18
Ms. S	97%	17
Mr. G	89%	17

APPENDIX E

Glossary of Key Terms

Functional Analysis (FA)

An analysis of the purposes (functions) of problem behavior, wherein antecedents and consequences representing those in the person's natural routines are arranged within an experimental design so that their separate effects on problem behavior can be observed and measured. (Cooper, Heron, & Heward, 2007, pp. 696)

Functional Behavior Assessment (FBA)

A systematic method of assessment for obtaining information about the purposes (functions) a problem behavior serves for a person. (Cooper, Heron, & Heward, 2007, pp. 696)

Treatment Integrity

The extent to which the independent variable is applied exactly as planned and described and no other unplanned variables are administered inadvertently along with the planned treatment. (Cooper, Heron, & Heward, 2007, pp. 706)

Noncontingent Reinforcement

A procedure in which stimuli with known reinforcing properties are presented on fixed-time (FT) or variable-time (VT) schedules completely independent of behavior. (Cooper, Heron, & Heward, 2007, pp. 700)

APPENDIX F

Observation Data Sheet

Teacher _____ Subject: _____ Time: _____ Date: _____

Beh	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
TO															
OS															
OD															

Teacher _____ Subject: _____ Time: _____ Date: _____

Beh	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
TO															
OS															
OD															

Teacher _____ Subject: _____ Time: _____ Date: _____

Beh	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
TO															
OS															
OD															

Teacher _____ Subject: _____ Time: _____ Date: _____

Beh	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
TO															
OS															
OD															

Teacher _____ Subject: _____ Time: _____ Date: _____

Beh	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
TO															
OS															
OD															

Teacher _____ Subject: _____ Time: _____ Date: _____

Beh	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
TO															
OS															
OD															

TO-Talk-out OS-Out-of-seat OD-Other Disruption I-Intervention

*Tally marks were used as were annotations.