A Comparison of Sensory and Function-based Antecedent Approaches to Decreasing Out-of-Seat Behavior

A Thesis Presented

by

Kate L. Desmond

The Department of Counseling and Applied Educational Psychology

In partial fulfillment of the requirements

for the degree of

Master of Science

In the field of

Applied Behavior Analysis

Northeastern University

Boston, Massachusetts

April 2010
Thesis Title: A Comparison of Sensory and Function-based Antecedent Approaches to Decreasing Out-of-Seat Behavior

Author: Kate L. Desmond

Department: Counseling and Applied Educational Psychology

Approved for Thesis Requirements of Master of Science Degree

Gary Pace Ph.D., BCBA

Katherine Gilligan M.S., BCBA

Hanna Rue Ph.D.
Antecedent Approaches to Out-of-seat

A Comparison of Sensory and Function-based Antecedent Approaches to Decreasing Out-of-Seat Behavior

Table of Contents

I. Title
   A. Introduction
      1. Out-of-Seat Behavior ........................................ 3
      2. Function-based Treatments .................................. 4
      3. Limitations of Functional Analyses ........................ 5
      4. Sensory-based Treatments .................................... 6
      5. Summary and Experimental Question ........................ 7
   B. Methods
      1. Participants .................................................. 8
      2. Setting and Materials ........................................ 8
      3. Dependent Variables and Operational Definitions ......... 9
      4. Measurement .................................................. 10
      5. Experimental Design ......................................... 10
      6. Interobserver Agreement ...................................... 11
      7. Procedural Integrity ......................................... 11
      8. Procedures
         a. Staff Training ............................................ 12
         b. Functional Assessments .................................. 12
         c. Initial Baseline .......................................... 13
         d. Alternating Treatments ................................... 13
   C. Results and Discussion ....................................... 14
   D. References ..................................................... 21
   E. Appendices ..................................................... 23
   F. Author Note ................................................... 27
   G. Figure Captions .............................................. 28
   H. Figures ......................................................... 29
Abstract

This study was designed to empirically assess a sensory-based treatment for out-of-seat behavior and to compare the practical effects of sensory and function-based treatments in an applied setting. Initially, individualized function-based treatments were designed for each of three participants based on the results of structured assessments. These antecedent treatments included functional communication, non-contingent attention and non-contingent reinforcement. The effects of these treatments on out-of-seat behavior were compared to the use of a therapy ball as a chair in an alternating treatments design. The results indicate that while function-based treatments did not further reduce rates of out-of-seat behavior, the use of therapy balls as chairs increased rates of this maladaptive behavior. This study highlights the risks of implementing treatments without prior assessment and supports the need for empirical evaluations of sensory-based treatments in applied settings.
A Comparison of Sensory and Function-based Antecedent Approaches to Decreasing Out-of-Seat Behavior

Out-of-seat behavior presents many issues for service providers and the individuals served. When an individual leaves a supervised area there are safety concerns and a potential for dangerous situations as pointed out by Piazza, Hanley, Bowman, Ruyter, Lindauer & Saiontz (1997). Also, in an overview of learning readiness skills, Rehfeldt & Rosales (2007) assert that structured environments can enhance learning. Since much of the formal instruction that occurs in schools happens with students seated at a desk, out-of-seat behavior presents significant obstacles to education. In school settings, teachers seek various professionals to address this problem behavior. Occupational therapists may suggest sensory replacement strategies (Richter & Oetter, 1978) whereas behavior analysts use function based treatments (Kodak, Grow & Northup, 2004; Piazza, et al., 1997). Mason & Iwata (1990, p. 367) state that several studies “indicated that sensory-integrative therapy might be a promising treatment for SIB. This conclusion, however, is not based on data collected using adequate experimental techniques.” This statement directs future research to apply experimental techniques to treatments suggested by other disciplines.

Defining the behavior to be changed in clear terms is an important aspect to conducting a systematic, experimental investigation of behavior. Cooper, Herron and Heward (2007) discuss this in their text and point to the importance of regarding both
topography and function when defining a behavior. Authors of behavioral literature provide varied definitions of out-of-seat behavior. Kodak, Grow, and Northup (2004, p. 229) define elopement as, “running more than 1 meter away from the kicking area or designated base when it was not functional to the game”, whereas Whitman, Scibak, Butler, Richter and Johnson (1982) provide a more topographically stringent definition “not hav(ing) her buttocks in contact with the chair and body oriented toward her work.” In the Journal of Occupational Therapy it is common for authors to define the behavior to be increased rather than defining the behavior to be decreased as in Schilling, Washington, Billingsley and Deitz’s 2003 study on in-seat behavior. From these definitions, researchers can begin to measure, analyze and attempt to treat the behavior to create socially significant change.

Function based treatments are fundamental to current applied behavior analysis. Since Iwata, Dorsey, Slifer, Bauman & Richman’s 1982 and 1994 descriptions of the analogue functional analysis, researchers have conducted countless analyses and created interventions for addressing the positive and negative reinforcement functions of behavior. Practitioners have demonstrated a number of effective treatments specifically designed to reduce out-of-seat behavior maintained by social positive and negative reinforcement. Piazza et al. (1997) conducted an analogue functional analysis of elopement with the addition of attempting to replicate the setting in which the behavior usually occurred. They found that one participant’s behavior was maintained by positive reinforcement in the form of attention and was successfully treated with differential reinforcement of other behaviors. Tarbox, Williams & Wallace (2003) replicated the 1997 Piazza et al. study and found that
their participants’ elopement functioned to gain access to a tangible item. Using modified analogue analysis methods to determine the function of the behavior, this study demonstrated the effectiveness of both functional communication training and noncontingent reinforcement to decrease elopement, (Tarbox, et al. 2003).

Functional analyses are not always effective in clearly identifying the maintaining variable for behaviors such as out-of-seat behavior. Alternatively, researchers have used descriptive assessments, such as those described by Bijou, Peterson and Ault (1968), to determine possible functions of behavior. By conducting analyses and assessments in applied settings researchers may be more successful in capturing naturally occurring contingencies that operate to maintain the target behavior (Tarbox, Williams and Wallace, 2003). Kodak, Grow & Northup embrace this concept in their 2004 study, conducting an in vivo functional analysis. By using this type of assessment they were able to demonstrate that the participant’s elopement was maintained by attention. They were also effective in decreasing rates of elopement by using a treatment package consisting of non-contingent attention and time-out contingent on elopement. (Kodak et al, 2004).

Often the results of a functional analysis or assessment lead behavior analysts to apply consequence based procedures. However researchers have also demonstrated the effectiveness of antecedent manipulations to decrease out-of-seat behavior particularly when the behavior is maintained by access to a tangible item. This was demonstrated by O’Reilly, Sigafoos, Edrisinha, Lancioni, Cannella, Choi, & Barretto (2006) using the principles of motivating operations. Cooper, Heron and Heward (2007) define motivating operation as, “an environmental variable that (a)
alters (increases or decreases) the reinforcing effectiveness of some stimulus, object, or event; and (b) alters (increases or decreases) the current frequency of all behavior that have been reinforced by that stimulus, object, or event.” In the O’Reilly et. al., (2006) study, rates of out-of-seat behavior decreased following access to the tangible item likely via an abative effect of pre-session access. The environmental variable was access to the tangible item, and access to that item resulted in satiation wherein the reinforcing effectiveness of the item was decreased thus the behavior maintained by access to that item decreased. Whether by manipulating antecedents or consequences, behavior analysts strive to understand behavioral contingencies to support the development of effective treatment plans.

Despite attempts to capture the naturally occurring contingencies, results of functional assessments can be inconclusive. Responding may be undifferentiated across conditions or responding may be inconsistent. When there is an unclear function or responding is highest in the absence of social consequences, behavior analysts might find fault with the measurement methods or they might hypothesize that the behavior is non-socially maintained. Vollmer, Marcus & LeBlanc (1994) point out the lack of research in the area of interventions for non-socially maintained behavior and go on to state that this may be due to the relative ease of controlling social contingencies. Though it may be difficult to control non-socially mediated reinforcement, behavior analysts can use scientific methods to complete research in this area.

Some research exists in behavioral literature suggesting interventions for participants who demonstrate undifferentiated results or responding highest in the
alone condition. Vollmer et al. (1994) describe interventions such as enriching the environment and providing preferred toys. Rapp (1997) suggests that access to stimulation along the same or similar sensory modality may reduce problem behavior via an abolishing operation. Theses studies propose that treatments that substitute one method of sensory stimulation for another can be effective in replacing automatically reinforced behaviors (Rapp, 1997, 2007). A participant whose functional analysis results indicate that their out-of-seat behavior is not maintained by socially mediated consequences may benefit from these findings. However, these studies focus on behaviors other than out-of-seat and the treatment effects could prove idiosyncratic.

Research in the field of occupational therapy provides a more specific focus on out-of-seat treated by substitution with alternative stimulation. Schilling et al. (2003) demonstrated that replacing students' chairs with therapy balls increased in-seat behavior. They point out that this is a sensory approach however there is no mention of automatic reinforcement or determining the function of the behavior. By using the theory of establishing operations, behavior analysts can describe the role of reinforcement contingencies in sensory-based treatments and can provide evidence-based hypotheses to describe why a treatment is or is not effective. Professionals in other fields may select sensory-based treatments based on perceptions of existing sensory needs and offer only anecdotal evidence to support the use of one type of treatment over another whereas behavior analysts are equipped with the tools to provide explanations of potential treatment effectiveness based on empirical data.

Applied behavior analysts are increasingly involved with collaborative teams that include professionals from other disciplines such as occupational therapy. A
sensory approach has support in occupational therapy literature. However, there is a lack of research for sensory-based approaches to out-of-seat behavior in journals of applied behavior analysis. It may be that currently, some behavioral based service providers are excluding potentially useful therapies due to a lack of empirical support for their use. Therefore the purpose of this study was two-fold, first to empirically assess a sensory based treatment for out-of-seat behavior and second to compare the practical effects of sensory and function-based treatments in an applied setting.

Method

Participants

Three students attending a school for children with autism participated in the study. Participants 1 and 2 were both diagnosed with autism and Participant 3 was diagnosed with autism spectrum disorder and attention deficit hyperactivity disorder. Inclusion criteria were that the student had out-of-seat behavior defined on the behavior support plan and Individualized Education Plan as a target for reduction. The participants were chosen from an initial group of 6. Of these six, the students who scored the highest percent of out-of-seat behavior occurring within each category (i.e., socially mediated positive / negative reinforcement) described by events on a structured assessment tool were selected for inclusion.

Setting and Materials

Sessions were each 15 minutes in length and were conducted in the classrooms of a private school for children with autism and other developmental disabilities. The classrooms included up to seven other students and their teachers. All sessions were conducted by teachers familiar with the participants, in settings in
which students were expected to sit during a regular school day. Participants either sat in their regular classroom chairs or on therapy balls depending on the condition. The chairs and therapy balls were individually sized so that when seated participants could place their legs at a 90 degree angle with both feet on floor and both buttocks in contact with the chair seat or top of the ball.

The primary investigator along with participants’ classroom teachers created individualized structured ABC assessment sheets for the initial assessments. Additional materials included a red-laminated card for functional communication, data sheets, and a watch or timer for marking intervals during noncontingent reinforcement and for marking session length. Also, a tally counter was used for participants once it was established that the target behavior could occur at high rates.

Response Definitions

The target behavior was out-of-seat defined as not having buttocks in contact with the chair seat or surface of ball for more than 1 second during seated activities. Additionally, for participant 3, a functional communication response was defined as any instance that the participant makes contact with the red laminated card. During non-contingent attention the secondary observer also recorded teacher behaviors. These included verbal interaction, orientation and physical contact. Verbal interaction was defined as the teacher stating the participant’s name paired with a social comment such as “nice shirt” or “you are holding your toy.” Orientation was defined as the teacher positioning her body so that shoulders, head and eye gaze are directed toward the participant. Physical contact was defined as the teacher moving
her hand to touch the participant on the hand, shoulder or back this included pats on
the shoulder or back and “high fives.”

Measurement

Classroom teachers recorded initial functional assessments on a structured
assessment tool (see Appendices A, B & C) by marking the location, activity,
immediate antecedent and immediate consequences for each occurrence of the target
behavior. Teachers marked at least one item from each category (i.e., location, activity, immediate antecedent and immediate consequence) for each instance of
behavior. Following no less than 40 recorded instances the data was analyzed by
graphing the percent of occurrences in each item in each category. This was
calculated by adding the number of checks on an item line then dividing by the total
number of recorded out-of-seats then multiplying by 100.

During baseline and alternating treatment phases observers collected a direct
frequency count of out-of-seat behavior. The total frequency from each 15-minute
session was reported as a separate datum point. Additionally, observers recorded
functional communication responses during sessions in which the card was available.
The total frequency of functional communication responses was also reported as
separate data point for each FCT session.

Experimental Design

Initially, observers completed functional assessments using a structured ABC
assessment tool. After this, baseline was conducted in which procedures remained
identical to those used during the participants’ daily activities. An alternating
treatments design was used to assess on the effects of sensory and function-based antecedent treatments.

**Interobserver Agreement**

A second observer recorded data simultaneously but independently of the primary observer during no less than 15% (range 15%-23%) of baseline sessions, and no less than 11% (range of 11%-36%) of treatment sessions. For each session, total count agreement was calculated by dividing the smaller count by the larger count then multiplying by 100. During baseline interobserver agreement was 75% for Participant 1 (range 0%-100%), 100% for Participant 2 and 67% for Participant 3 (range 0%-100%). During treatment sessions interobserver agreement was 98% for Participant 1 (range 96%-100%), 83% for Participant 2 (range 50%-100%) and 92% for Participant 3 (range 70%-100%).

**Procedural Integrity**

The secondary observer also completed a procedural integrity checklist during the alternating treatments phase for each participant. For therapy ball and functional communication sessions, the procedural integrity checklist included items regarding presence and use of necessary materials, steps of the antecedent procedure and teacher behavior for the consequence procedure in place. The secondary observer recorded a plus or a minus for each opportunity (i.e. each out-of-seat). For non-contingent attention sessions, the procedural integrity checklist also included a section for marking teacher attention (i.e., verbal interaction, orientation or physical contact). This was recorded by marking plus or minus for attention delivered at the end of each 30 second interval using a momentary time sampling method. The
checklist was completed by the secondary observer during 12% of sessions for Participant 1, 25% of sessions for Participant 2, and 9% of sessions for Participant 3. Procedural integrity across all participants and sessions averaged 100% with the exception of non-contingent attention for Participant 1 with an average integrity of 94%.

Staff Training

All observers and experimenters who participated in the study were provided with data sheets, behavior definitions and a brief description of how to complete the assessment tool. All experimenters (author excluded) had previous experience with the student and collecting data on the target behavior. In addition to this prior experience, training sessions were conducted in which staff collected data with the primary investigator simultaneously recording data and providing feedback.

Functional Assessment

During regularly scheduled activities throughout the day the participants’ teachers recorded each instance of out-of-seat behavior as defined above onto an individualized data sheet. The primary investigator created individualized structured assessment tools for each participant based on teacher reports and general observation. These forms were designed to gather descriptive data on the events in temporal proximity to the target behavior and included information about location, current activity, immediate antecedent events and immediate consequent events for each out-of-seat occurrence. Though other consequences could be identified via this form, the current consequence procedure as described in each participant’s behavior support plan remained in place. For all participants this included verbally and
visually ignoring the target behavior, blocking and/or redirecting the participant back to his seat and providing a cue to the participant to return to the current activity.

*Initial Baseline*

Following the initial assessments, trained observers collected direct frequency data for 15 minute sessions scheduled during activities that require the participant to be seated in a chair. These activities included academic work time, art class, and music class. Teachers continued to follow the participants’ consequence based behavior support plans with no changes during baseline conditions. Each 15 minute baseline session was separated by at least 30 minutes.

*Alternating Treatments*

Trained observers collected direct frequency data for 15 minute sessions scheduled during activities that require the participant to be seated, as in baseline. Teachers continued to follow the consequence portion of the participants’ behavior support plans during each condition with changes made only to antecedent procedures as described below. Again each session was separated by no less than 30 minutes. Participants experienced a control condition, therapy ball condition and individualized function-based treatment in an alternating treatments design. Multiple sessions were conducted daily and the treatments alternated across sessions controlling for sequence, time of day and staff members.

*Control.* This condition was identical to baseline for all participants. Out-of-seat behavior continued to be verbally and visually ignored. Teachers blocked participants from leaving the area or redirected them back to their seat (chair) as needed and provided a cue back to the current task.
**Therapy Ball.** The participant’s chair was replaced with a therapy ball sized as described above. At any point that the ball rolled away it was replaced promptly (i.e., within 3 seconds). In this condition the definition of out-of-seat remained the same except that contact was with the top of the ball rather than the chair seat.

**Non-Contingent Attention.** The teacher verbally interacted and physically contacted (participant 1) or orientated to (participant 2) the participant every 30 seconds during the 15 minute sessions. This attention was delivered independently of the participant’s current behavior.

**Functional Communication.** Prior to beginning the session, the teacher placed a 8.5 by 11 inch red laminated card on the table directly next to Participant 3’s field of work. Anytime the participant’s hand or arm came in contact with the red card staff immediately stopped demand presentation, stated “you asked for a break” and turned away. After 30 seconds staff directed the participant back to his seat and provided a cue back to the current activity.

Results and Discussion

**Functional Assessment**

Results of the functional assessment provided descriptive data to support hypothesized functions out-of-seat behavior for each participant. As shown in Figures 1 and 2, Participant 1 and 2 exhibited the highest percent of out-of-seat behavior associated with the immediate antecedent event, no staff interaction for 30 seconds to 2 minutes. Participant 3, in Figure 3, exhibited the highest percent of

---

1 Detailed results may be obtained from the first author, May Institute, 41 Pacella Park Drive, Randolph, Massachusetts 02368.
Antecedent Approaches to Out-of-seat

occurrences following being verbally directed to task or work. These results indicate that out-of-seat behavior may be maintained by attention for Participants 1 and 2, and escape for Participant 3.

Alternating Treatments

Table 1 shows the average frequency of out-of-seat for all participants during initial baseline, control, function-based and therapy ball sessions. For all three participants out-of-seat occurred most frequently during sessions in which the chair was replaced by a therapy ball.

Participant 1. Across all baseline sessions, Participant 1 exhibited an average of 2.1 occurrences with a range of 0 to 6 occurrences. In both control and function-based treatment sessions, out-of-seat behavior occurred an average of 4.8 times with a range of 0-13 for control and 0-10 for function-based sessions. Finally in therapy ball conditions, Participant 1 averaged 45.8 occurrences of out of seat with a range of 4 to 109. As shown in Figure 4, both the non-contingent attention condition and control condition were associated with frequencies similar to baseline. During therapy ball sessions, however, there were significantly more occurrences of out-of-seat behavior. The therapy ball condition resulted in clearly differentiated rates of behavior from the other conditions with the exception of session 32. His classroom teachers reported that during session 32 he appeared to be anxious. He sat still, clenched his hands in tight fists and did not respond to any stimuli for some time prior to the session, during the entire session and for some time following the session. Despite this one overlap, data showed that the use of a therapy ball resulted in a significant increase in the
target behavior. Overall, the frequency of out-of-seat behavior for this participant indicates that the therapy ball is not an effective treatment having a converse effect.

**Participant 2.** Participant 2 displayed similar results. During baseline and control sessions Participant 2 exhibited an average of less than 1 occurrence of out-of-seat behavior with a range of 0 to 2 occurrences. This participant exhibited slightly more occurrences during function-based treatment sessions with an average of 1.75 ranging from 1 to 3 occurrences. Therapy ball sessions resulted in the only significantly different average occurrence of the target behavior with an average of 5.5 ranging from 3-11. As shown in Figure 5, baseline, control, and the function-based treatment are undifferentiated whereas the therapy ball sessions are higher with no overlapping points. The results for this participant also indicate that when empirical methods are applied to this sensory-based treatment, the therapy ball shows a contrary clinical effect.

**Participant 3.** Figure 6 shows Participant 3’s results. Across all baseline sessions, Participant 3 exhibited an average of 1.7 occurrences with a range of 0 to 6 occurrences. This participant exhibited 0 occurrences of the behavior during 8 of the 27 baseline sessions and 0 in all control sessions. During function-based treatment sessions, Participant 3 exhibited an average of 1.4 occurrences with a range of 0-4 occurrences. Participant 3 exhibited the highest rates of out-of-seat behavior during therapy ball sessions with an average of 9 and a range of 6 to 15 occurrences. Though less pronounced than in the previous two participant results, the therapy ball again generally resulted in a higher frequency of out of seat behavior than any other condition.
Participant 3’s function-based approach was functional communication which allowed the student to access the contingency based on a behavior alternative to the target behavior. Observers collected data on the number of times Participant 3 contacted this contingency. As shown in Figure 7, of the four function-based sessions conducted observers collected data on communicative responses in three. Participant 3 requested a break using the red break card multiple times in two of the three sessions in which observers collected data. There does not appear to be a correlation between the number of requested breaks and the occurrence of out-of-seat behavior.

The results of this study indicate that the use of a therapy ball as a seat is not an effective treatment to decrease out-of-seat behavior. Not only were rates of out-of-seat behavior not reduced below baseline they were significantly elevated across all three participants. Also, antecedent procedures based on hypothesized functions were ineffective at further reducing out-of-seat behavior. The participants exhibited relatively low levels of the target behavior during baseline possibly clouding the effect of the function-based antecedent treatments. Due to the use of ignoring the target behavior and redirecting the participant back to task, rates of the behavior were such that any additional decrease would be slight. These data support the use of consequent procedures that address multiple functions of behavior. However, further research could enhance these findings.

In applied settings clinical teams are responsible for identifying target behaviors. Though the clinical teams identified this behavior as significant for these participants and there are reports that this behavior occurs frequently enough to impact daily activities, baseline sessions showed relatively low frequencies of the
behavior. The rates of behavior observed during this study were limited by 15-minute observation sessions. It is possible that longer sessions may have resulted in more clear data. Initially a replication of this study with participants with higher rates of the target behavior may be beneficial. Additionally, an extension that gathers direct data on on-task behavior or productivity would further clarify these results and their impact on skill acquisition.

Though descriptive methods provide information regarding the contingencies that may currently be in place, experimental methods more clearly determine the operate function, (Pence, Roscoe, Bourett & Ahearn, 2009). Thus a limitation to this study is that descriptive methods were used to identify the hypothesized function of participants' out-of-seat behavior. This provides a possible explanation for the lack of effect seen in the function-based treatments. Also, though the assessments conducted in this study for Participant 3 indicate maintenance by negative reinforcement, it may be important to note that previous clinical assessments have indicated that this participant's out-of-seat behavior may be multiply maintained. Future research could use functional analyses to identify the variables maintaining out-of-seat behavior prior to determining the function-based treatment. This may result in an even greater discrepancy between the use of a therapy ball and function-based treatments.

Another concern is that interobserver agreement appears to have been quite low for participants 1 and 3 during baseline sessions. It should be noted, however, that observers total count difference never exceeded one instance. Future research could use a different measurement, such as partial interval recording, to address this
issue. Furthermore fewer sessions of interobserver agreement were collected than is typically recommended. Also, this study included participants who were within the same age range and all were diagnosed with autism. It may be useful to replicate this study with participants that have other diagnosis and varying levels of ability as well as those whose out-of-seat behavior is maintained by non-socially mediated reinforcement. Additionally direct assessment of levels of staff interaction with participants during baseline, during non-contingent attention and follow-up sessions would provide more information on the best use of NCA for treatment of out-of-seat behavior.

Despite the aforementioned limitations, the results of this study indicate that an often-recommended treatment for out-of-seat behavior (therapy ball as chair) had an adverse effect. Across all participants the consequence procedure including ignoring the target behavior, blocking progress away from area and redirecting back to task resulted in the lowest rates of out-of-seat behavior. Additional antecedent procedures were ineffective at further reducing rates of the target behavior. The increase in out-of-seat behavior during therapy ball sessions support the notion that empirical investigation of treatments in applied settings would be beneficial. Furthermore, the inclusion of behavior analysts on multidisciplinary educational teams provides an opportunity for this research to occur. It would behoove the field of behavior analysis, as well as benefiting individuals served, to apply scientific investigation to those interventions that are suggested routinely in schools. Overall, this study highlights the importance of future research using empirical methods to
assess the merits of commonly suggested and often praised treatments that are not yet evidenced based.
References


**Additional Readings**

### Appendix A

#### Participant 1: Structured Assessment Form

<table>
<thead>
<tr>
<th>Student</th>
<th>Participant 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom</td>
<td>xxx</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
</table>

1. Out of Seat: not having buttocks in contact with the chair seat for more than one second

**LOCATION** (Check where behavior occurred)
- Table in Classroom
- Chair Away from Table in Classroom
- Computer
- Music
- Art
- Library

**ACTIVITY** (Check activity in progress at the time)
- Table Top instruction
- Group Activity
- Breaks / Leisure
- Lunch
- Listening to Music
- Art Project
- Reading Book

**IMMEDIATE ANTECEDENTS** (check all that occurred w/in 30 sec. before target behavior)
- Physical prompt or full support
- Verbally directed to task/work
- Denied access to preferred activity
- No staff interaction for 2 minutes or more
- No staff interaction for 30 seconds to 2 minutes
- Told to wait
- Computer On

**IMMEDIATE CONSEQUENCES** (check all that occurred w/in 30 sec. following target behavior)
- Verbally and Visually Ignored the Bx and Redirected back to seat
- Physically Blocked (successful)
- Physically Blocked (unsuccessfully)
- Physical Contact
- Instruction Stopped or Delayed
- Given item attempting to access
- Achieved access to preferred tangible activity
- Gained visual access to space previously blocked from sight
- Jumping occurred
Appendix B

Participant 2: Structured Assessment Form

<table>
<thead>
<tr>
<th>Student</th>
<th>Participant 2</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom</td>
<td>xxx</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Out of Seat: buttocks not in contact with chair seat for more than 1 sec

**LOCATION (Check where behavior occurred)**
- Chair at the table to the right
- Chair at the table in the middle
- Chair away from table (morning mtg.)
- Cafeteria
- Art
- Music

**ACTIVITY (Check activity in progress at the time)**
- Seated Instruction
- Morning circle or meeting
- Snack
- Lunch
- Seated Leisure Task
- Listening to Music
- Art Project

**IMMEDIATE ANTECEDENTS (check all that occurred w/in 30 sec. before target behavior)**
- Told to wait for next scheduled activity / denied access to activity
- No staff interaction for 2 minutes or more
- No staff interaction for 30 seconds to 2 minutes
- "Request" to leave seat denied/blocked
- Physical prompt or full support
- Verbally directed to task/work
- Sd Delivered

**IMMEDIATE CONSEQUENCES (check all that occurred w/in 30 sec. following target behavior)**
- Verbally and Visually Ignored Bx and Redirected Back to Seat
- Physical contact was initiated by James with a peer or staff
- Staff did not respond (ignore, leave)
- Instruction was stopped or delayed, even momentarily
- Directed to a more engaging activity
- Achieved access to PICA
- Achieved access to food
- Movement away from table (block began after 2 ft or more away from table)
- Successfully blocked access to PICA
Antecedent Approaches to Out-of-seat

Appendix C

Participant 3: Structured Assessment Form

<table>
<thead>
<tr>
<th>Student</th>
<th>Participant 3</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom</td>
<td>XXX</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Out of Seat **on task**
2. Out of Seat **off task**

**LOCATION** (Check where behavior occurred)
- Chair at the table (Classroom)
- Chair away from table (Classroom)
- Cafeteria
- Library
- Music
- Art

**ACTIVITY** (Check activity in progress at the time)
- Morning circle or meeting
- Snack
- Lunch
- Seated Leisure Task
- Listening to Music
- Art Project
- Xxx Program
- Xxx Program
- Xxx Program
- Incidental Program

**IMMEDIATE ANTECEDENTS** (check all that occurred w/in 30 sec. before target behavior)
- Told to wait for next scheduled activity / denied access to activity
- No staff interaction for 2 minutes or more
- Physical prompt or full support
- Verbally directed to task/work
- Praise Delivered

**IMMEDIATE CONS.** (check all that occurred w/in 30 sec. following target behavior)
- Verbally and Visually Ignored Bx and Redirected Back to Seat
- Physical contact was initiated by Jeremy with a peer or staff
- Staff did not respond (ignore, walk away, etc.)
- Instruction was stopped or delayed, even momentarily
- Directed to a more engaging activity
- Praise for more appropriate behavior
- Jumping was blocked after it began
- Movement blocked began after 2 ft or more away from table
- Gained access to tangible
Table 1. Average rates of out of seat behavior during initial baseline and alternating treatments sessions.

<table>
<thead>
<tr>
<th></th>
<th>Baseline (range 0-6)</th>
<th>Control (range 0-13)</th>
<th>Function-based (range 0-10)</th>
<th>Therapy Ball (range 4-109)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant 1</td>
<td>2.1</td>
<td>4.8</td>
<td>4.8</td>
<td>45.8</td>
</tr>
<tr>
<td></td>
<td>(range 0-6)</td>
<td>(range 0-13)</td>
<td>(range 0-10)</td>
<td>(range 4-109)</td>
</tr>
<tr>
<td>Participant 2</td>
<td>&gt;1</td>
<td>&gt;1</td>
<td>1.75</td>
<td>5.5</td>
</tr>
<tr>
<td></td>
<td>(range 0-2)</td>
<td>(range 0-2)</td>
<td>(range 1-3)</td>
<td>(range 3-11)</td>
</tr>
<tr>
<td>Participant 3</td>
<td>1.7</td>
<td>0</td>
<td>1.4</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>(range 0-6)</td>
<td>(range 1-4)</td>
<td>(range 1-4)</td>
<td>(range 6-15)</td>
</tr>
</tbody>
</table>
Author Note

This document is in partial fulfillment of the requirements for the degree of Master of Science in the field of Applied Behavior Analysis. I would like to thank my committee, Gary Pace, PhD, BCBA, Katherine Gilligan, M.S., BCBA, and Hanna Rue, PhD as well as the May Institute. I would also like to credit the staff that helped with collecting data and conducting sessions.
Figure Captions

Figure 1. Participant 1: percent of occurrences of out of seat behavior across antecedent events.

Figure 2. Participant 2: percent of occurrences of out of seat behavior across antecedent events.

Figure 3. Participant 3: percent of occurrences of out of seat behavior across antecedent events.

Figure 5. Participant 1: frequency of out of seat behavior during initial baseline and alternating treatments sessions.

Figure 6. Participant 2: frequency of out of seat behavior during initial baseline and alternating treatments sessions.

Figure 7. Participant 3: frequency of out of seat behavior during initial baseline and alternating treatments sessions.

Figure 8. Communicative responses and frequency of out-of-seat behavior for Participant 3.
Figure 1
Told to wait for next scheduled activity/denied access to activity
No staff interaction for 2 minutes or more
No staff interaction for 30 seconds to 2 minutes
"Request" to leave seat denied/blocked
Physical prompt or full support
Verbally directed to task/work
Sd Delivered

Antecedent Approaches to Out-of-seat

Figure 2: Participant 2: Antecedent

Immediate Antecedent
(within 30 seconds prior to the behavior)
Figure 3
Figure 4
Figure 5
Participants Approach to Out-of-seat Participation

Alternating Treatments

Baseline

Therapy Ball

FCT

Control

Sessions

Figure 6
Figure 7

Participant 3: Functional Communication

Alternating Treatments

Frequency

Sessions

28 29 30 31 32 33 34 35 36 37 38