ABSTRACT

Self-Management for Young Children with Autism

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Previous research has indicated that self-management interventions may play a crucial role in helping children reduce off-task behaviors within learning environments (Briesch & Chafouleas, 2009). The self-management process allows participants to set personal goals and self-monitor such goals (Briesch & Chafouleas, 2009). The present study implemented a self-management intervention with two young boys diagnosed with Autism. Specifically, the intervention aimed to decrease out of seat behaviors in a clinical setting with the use of a pre-service practitioner. An ABAB design was implemented to establish experimental control. During baseline, no consequences were provided for either in or out of seat behavior. The intervention consisted of the participants self-recording their individual behaviors at the onset of an auditory timer. The participants received a small edible reinforcement if they achieved the predetermined in seat goal. The results showed the intervention decreased out of seat behaviors for both participants as their baseline and intervention data were compared. Future research should seek to generalize such behaviors in a variety of settings.

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DEDICATION

First and foremost, I want to thank my thesis mentor, Dr. Bagby, for guiding me through the research and thesis process. I am beyond thankful for her and Dr. Davis' ongoing encouragement and support. They both have inspired me going to into graduate school and I could not be more grateful. They supported me with welcome arms, always being available to give advice. I have been honored to work with such caring and passionate professors. Secondly, I have to thank my mom and Carter who encouraged me to chase to my goals despite the challenges of life. Throughout my four years at Baylor, and despite complaining, they have always been there to support me and give the perfect advice. Finally, thank you to my friends who listened to me talk about my thesis project for the past year. I could not have asked for a better support system to help me through this thesis.

CHAPTER ONE

Literature Review

Self-management for Young Children with Autism

Students are often found to be unfocused and off-task within the school setting, which may result in lower grades and frustration among teachers (Moore, Anderson, Glassenbury, Lang, & Didden, 2013). It is crucial that children and students remain focused in order to sufficiently learn appropriate behaviors and course requirements. Several negative outcomes are associated with students who are chronically off-task or disruptive, such as poor social interaction skills and failure of state-mandate testing (Peterson, 1999). Previous research has indicated that self-management may be the key to helping young adolescents manage their behavior within learning environments (Briesch & Chafouleas, 2009; Peterson, 1999; Reid, Trout, & Schartz, 2005). Self-management allows students to set their own personal goals, self-monitor such goals, and self-evaluate (Briesch & Chafouleas, 2009; Suk-Hyang Lee, Simpson, & Shogren, 2007; Yucesoy Ozkan & Sonmez, 2011).

Self-management intervention process involves multiple facets and procedures. At the same time, most intervention programs are uniquely designed for each participant according to their overall abilities. Popular techniques include self-monitoring behaviors, self-evaluating, as well as self-reinforcement (Briesch & Chafouleas, 2009; Yucesoy, Ozkan & Sonmez, 2011). Self-monitoring primarily involves an external cue that elicits the participation of the student. Previous studies have used a variety of methods to

prompt students' awareness including discrete tones and timers in order to signal students to self-record and evaluate their present behaviors (Briesch & Chafouleas, 2009; Moore et al., 2013). With self-evaluating, students assess their behaviors according to defined standards. These standards must be set by first deciphering between on and off-task behaviors, which can include a wide variety of tasks such as appropriate talking and sitting (Fox & Garrison, 2003; Plavnick, Ferreri, & Maupin, 2010).

While the standards must be explicitly defined and addressed before beginning the intervention, studies have found that pre-training the participant to self-manage does not significantly increase positive behaviors (Suk-Hyang Lee et al., 2007). This may be beneficial in reducing the overall time allotted for the intervention program. Further, the primary task of setting personal goals before and during the intervention allows students to self-reinforce as they determine what will be required to obtain their goals and desired reinforcement (Briesch & Chafouleas, 2009; Fox & Garrison, 2003). Such techniques used in combination provide a strong self-management intervention with individual children (Briesch & Chafouleas, 2009).

Educators strive to increase students' performances, which have resulted a multitude of research and literature have focused on depicting beneficial interventions (Briesch & Chafouleas, 2009; Joseph & Eveleigh, 2011; Yucesoy Ozkan & Sonmez, 2011). Specifically, results from self-management experiments have produced encouraging statistics that provide significant evidence for its success (Reid et al., 2005). Self-regulating interventions have been described in broad terms within literature while specific on and off-task behaviors descriptions are also determined by each particular study according to the participant. Self-management involves participants monitoring

and regulating their individual behaviors based on certain procedures. This self-management technique gives each participant the responsibility to obtain his or her own perceived goals by alternating his or her behaviors accordingly (Briesch & Chafouleas, 2009). This can be accomplished by giving a participant the task of filling in a sheet with smiling or frowning faces depicting their on or off-task behaviors (Callahan & Rademacher, 1999). Previous research has indicated that children benefit from self-management interventions because they are able to determine appropriate behaviors that allow them to individually shape their own actions (Briesch & Chafouleas, 2009; King-Sears & Bonfils, 1999; Moore et al., 2013).

Positive Effects

Once students are well equipped with the knowledge of how to manage and substitute appropriate actions, teachers or therapists no longer have the ongoing burden of getting the students on-task (Moore et al., 2013). Another study found that self-regulation promoted pro-social behaviors and ameliorated overall social relationships (Padilla-Walker, Harper, & Jensen, 2010). As made evident through various studies, the benefits are widely dispersed across the educational system. Students see improvements in their grades, the amount of work they are able to accomplish during the school day and in other environments, as well as learning to set their own goals (King-Sears & Bonfils, 1999).

While studies have focused on the physical and overt effects of self-management strategies and interventions on regulating behaviors, research has also indicated positive emotional correlations (Padilla-Walker et al., 2010; Reid, 2013; Suk-Hyang Lee et al.,

2007; Villavicencio & Bernardo, 2013; Yucesoy Ozkan & Sonmez, 2011). A study by Villavicencio and Bernardo (2013) researched the influence on emotional outcomes of pride and achievement. The study found that self-regulation corresponded to positive outcomes for grades. Further, pride and enjoyment were both found to be positive predictors of grades. The findings suggest that positive emotions such as pride and enjoyment influence self-regulation and overall achievement. Previous research has also indicated that self-management allows children to be empowered (Suk-Hyang Lee et al., 2007). This empowerment stems from the notion that children are given the opportunity to take control of their behaviors, and after learning to self-monitor appropriately, they begin regulating when they see fit (Suk-Hyang Lee et al., 2007). This research proposes that self-management is positively effective due to a child's need and desire for independence.

Differing Techniques within the Self-Management Process

A meta-analysis by Yucesoy Ozkan and Sonmez (2011) found that self-monitoring was the most widely used self-management technique while antecedent cue regulation was the second most popular. Further, there are a variety of strategies to implement the self-management process including video monitoring, peer tutoring, and goal setting, in which data is collected primarily using teachers, undergraduate or graduate students, or therapists (Yucesoy Ozkan & Sonmez, 2011). Studies have indicated that self-monitoring increases the rate of on-task behaviors, while self-assessment and self-reflection have not proven to be as effective (Joseph & Eveleigh, 2011; Mammolenti, Vollmer, & Smith, 2002; McConnell, Regehr, Wood, & Eva, 2012).

The findings suggest that self-monitoring involves awareness of whether one has the capabilities and knowledge to face a problem at a specific moment in time (McConnell et al., 2012). On the other hand, self-assessment or self-reflection involves judging one's overall abilities to succeed at tasks set before him or her. Therefore, younger children may be better at self-monitoring as opposed to being able to rate their overall abilities, which may require higher cognitive abilities that they do not possess (McConnell et al., 2012).

Using an AB design, one study's results reported that students' behaviors improved significantly over baseline by allowing the participants to engage in self-regulation and self-monitoring (Axelrod, Haugen, Klein, & Zhe, 2009). The self-regulation gave the students the ability to be in control while the self-monitoring involved the students observing and recording their own behaviors in hopes that they would choose appropriate actions. Moreover, the students then made conclusions about their behaviors, deciding if they were on-task behaviors or off-task. Then, they received a reinforcement once or if their perceived goals were reached (Axelrod et al., 2009). One such reinforcement process that has shown to improve appropriate behaviors and vocalization is a token economy in which participants receive physical tokens for on-task behaviors. Participants are then given the opportunity to trade their tokens for other reinforcements such pencils or small toys (Plavnick et al., 2010; Reinecke, Newman, & Meinberg, 1999).

Another study recorded behaviors for two middle school boys (Axelrod et al., 2009). The teachers were given specific prompts to deliver to the students in order to analyze each of their on and off-task behaviors. The teachers would remind the boys of

the three “keys”, which were to be respectful, responsible, and have pride. Although the intervention included observers recording the behaviors instead of the student, it involved self-regulation as the student was prompted to think about his actions after being cued with the three keys (Axelrod et al., 2009).

Disabilities and Self-Management

ADHD

An in-depth literature review by Briesch and Chafouleas (2009) found that self-management intervention programs do in fact result in an increase for on-task behaviors. The extensive research has indicated that self-management allows participants to regulate their behaviors with an increase in on-task behaviors and as well as a significant decrease in off-task behaviors (Briesch & Chafouleas, 2009). These findings have narrowed into the analysis of the behaviors of children who have been diagnosed with disabilities or disorders. For example, similar results to the study by Briesch and Chafouleas (2009) were found when analyzing students’ actions that exhibited Attention Deficit Hyperactive Disorder (ADHD) behaviors (Reid et al., 2005). Although all children appear to experience off-task behaviors to some degree, those with ADHD may be at a greater risk of experiencing these off-task behaviors at an increased rate (Jackson, 2004). The particular study suggested that young adolescents with ADHD benefit from self-management and self-reinforcement (Reid et al., 2005). When students feel as though they are in control, they learn to exhibit self-regulated behaviors. Overall, the study

found that self-regulation resulted in strong effects on the students' on-task behaviors (Reid et al., 2005).

Autism

Studies involving children diagnosed with autism have reported a significant improvement in their on-task behaviors through self-management interventions (Suk-Hyang Lee et al., 2007). One meta-analysis examined single-subject studies with young children diagnosed with autism and found that 81.9% of the interventions provided effective treatment (Suk-Hyang Lee et al., 2007). The analysis found that across subjects, settings, and various conditions the self-intervention model proved to be beneficial as it displayed significant improvements for the participants, while another meta-analysis found similar results (Suk-Hyang Lee et al., 2007; Yucesoy Ozkan & Sonmez, 2011). The literature also indicated that self-monitoring with a co-participant resulted in higher effectiveness ratings (Suk-Hyang Lee et al., 2007). This finding suggests that young children monitoring their behaviors together may result in quicker or more efficient improvements in a variety of behaviors (Suk-Hyang Lee et al., 2007).

Numerous intervention programs have reported to be effective for children with autism (Legge, DeBar, & Alber-Morgan, 2010; Suk-Hyang Lee et al., 2007). One study created a program for a high functioning eight year old diagnosed with autism (Callahan & Rademacher, 1999). The researchers used paraprofessionals to further assist and monitor the child's behaviors. Both the child and the paraprofessional recorded the student's behavior. The child earned points for determining if he was on-task, reaching his goal of on-task behaviors for the day, and extra points for accurately matching the

aid's depiction of his on and off-task behaviors (Callahan & Rademacher, 1999). After the intervention, the participant accurately matched the aid's ratings of on and off-task behaviors more than 73% of the time. Moreover, the child improved on his overall abilities to perform tasks independently (Callahan & Rademacher, 1999). Research has suggested that this notion of independency can be further increased through the use of technology, such as IPads (Bouck, Savage, Meyer, Taber-Doughty, & Hunley, 2014). While both paper and IPad self-management interventions have been effective, the use of IPads was found to significantly decrease prompting (Bouck et al., 2014). This may allow children to exercise greater responsibility and thus, independently increase on-task behaviors.

Current Study

Previous research indicates that self-management processes can be beneficial both physically and mentally. Self-management may give individuals a sense of self-worth and it may bolster self-esteem (Villavicencio & Bernardo, 2013). Although self-management has been previously studied, additional research is needed in order to uncover more of its implications and effects. For example, if students were given self-management procedures during their first years within the school system, would their learned skills carry over into their adolescent years?

The literature indicates the effectiveness of self-management among various populations (Hamilton, 2007; Lemberger & Clemens, 2012; Plavnick et al., 2010; Reid, 2013). While there is extensive research providing evidence for self-management procedures for students within the school system, there is little research involving pre-

service practitioners within the intervention program. There is limited research implementing self-management for children with disabilities (Yucesoy Ozkan & Sonmez, 2011). Specifically, there is a need for research with children diagnosed with autism in a clinical setting in which pre-service practitioners implement the self-management techniques. Pre-service practitioners may play a crucial role in helping children develop the skills required to self-manage their behaviors. The goal of the present study was to establish and implement a self-management intervention using an ABAB design with two young children diagnosed with autism. The hypothesis was that the participants would learn to self-monitor and ultimately increase their on-task behaviors of sitting appropriately with the help of pre-service practitioners in a clinical environment.

CHAPTER TWO

Methods

Participants

Participants were two boys, Andrew, aged six years seven months and Eli, five years and ten months. Andrew and Eli were home schooled and attended one-hour sessions at the Baylor Center for Assessment, Research, and Education twice a week. The sessions were conducted in a small sized room that contained a single table and chairs. Additionally, the boys participated in the same session in which one pre-service practitioner instructed. The pre-service practitioner was a graduate student specializing in ABA who had previously been conducting sessions with the boys prior to the onset of the study.

Both boys were diagnosed with autism by independent clinicians. The participants exhibited decreased eye contact and social-emotional reciprocity in accordance with the Diagnostic and Statistical Manual for Mental Disorders (DSM-V) criteria for autism spectrum disorders (American Psychiatric Association, 2013). They were slightly delayed in their language and pre-academic skills. However, they were both capable of forming complete sentences and utilized spoken language functionally. They possessed the ability to develop cooperative skill play, as well as carry out explicit tasks given by the pre-service practitioner. Andrew and Eli exhibited similar capabilities, functioning at approximately the same skill levels.

Measures

This study examined the effectiveness of a pre-service practitioner facilitated self-management program for young school-aged children. The target behavior was sitting in the chair appropriately. Out of the seat behavior was defined as (a) bottom not in contact with the chair seat (b) feet anywhere but hanging in the front of the chair, and (c) any of the four chair legs losing contact with the ground.

The primary researcher simultaneously observed the boys and recorded if the target behavior occurred using a 10-second partial interval recording system. Data were taken for each boy separately. A secondary researcher collected data in an identical manner, but on a separate data sheet from the primary researcher, approximately 35% of the sessions. The primary and secondary researchers' data were compared in order to measure overall reliability.

A single-subject ABAB design was implemented in which A represented the baseline behaviors and B represented behavior during the self-management intervention for both participants. This procedure allowed stable responding to be observed before the next phase was conducted. The ABAB method allows for experimental control, while also allowing for a small population (Kennedy, 2005). Thus, the measurements during phase A were compared to phase B for each boy individually.

Confidentiality was ensured throughout the process. The data sheets, all materials, and identifying information were kept inside a locked cabinet in order to protect the participants' right to privacy.

Procedure

The current study consisted of four phases: 1) pre-service practitioner training, 2) baseline measurements, 3) intervention implementation, 4) data analysis.

During the first phase of the project, the pre-service practitioner was given full knowledge of the purpose of the study, data collection measures, and her role in the intervention process.

During the entirety of the study, the participants were seated at a table, one at each end with the pre-service practitioner seated in between them. Each session consisted of structured board games for approximately seven minutes followed by a brief period of approximately three minutes of free play at the table (e.g. building blocks, coloring).

The second phase consisted of collecting baseline data in which no consequences were provided for in or out of seat behaviors. The pre-service practitioner refrained from redirecting the boys to sit in their chair and she did not praise them for appropriate sitting.

The third phase was the implementation of the intervention program. The pre-service practitioner explicitly explained, defined, and modeled the on-task behavior as sitting in the seat appropriately and off-task behavior as getting out of the seat to the participants before starting every intervention session. The pre-service practitioner then assisted the participants in identifying the behavior goal, which was sitting in their chair for four out of the five checkpoints for the certain lesson and interval. This introduction allowed the boys the opportunity to understand appropriate sitting behavior and their target goal in order to maximize their reinforcement as well as increase their overall on-task behavior.

During this phase, the pre-service practitioner taught each of the participants how to self-monitor his own data by self-recording on- and off-task behaviors as it occurred on a specifically designed data sheet. This data sheet contained simple smiling and frowning faces for the boys to associate with their behaviors. The pre-service practitioner would verbally remind the participants of the target behavior and their goal at the start of each session. An automatic timer would sound every minute. At the onset of the timer, each boy recorded if he was exhibiting an on- or off-task behavior at that moment and then subsequently circled the smiling or frowning face accordingly on the data sheet. If the participant met the criteria of having four out of the five smiling faces circled in the five-minute interval, he was reinforced with one piece of a small snack (i.e. pretzel).

At the beginning of the intervention phase, the pre-service practitioner had to remind Andrew and Eli when to complete their self-managed data sheets. Initially, the boys needed prompting as to if they were in their designated seats at the onset of the timer. As the intervention continued, the prompting steadily decreased (the boys heard the timer, stopped what they were doing and filled out their data sheet) and the boys were able to determine if they were displaying appropriate sitting behavior. This initial phase of the intervention consisted of 4 sessions.

After stabilized behaviors were exhibited, the intervention was removed and a second set of baseline measurements was taken. The process was identical to the first phase, but consisted of 4 sessions. Lastly, the intervention was implemented a second time for an additional 4 sessions.

The final phase consisted of data analysis. The researcher calculated the on- and off-task behaviors for each boy individually and graphed each accordingly. The changes

in the target behavior were analyzed for the baseline and self-management phases. This phase was intermittent during the baseline and intervention process because it was important to track the participants' progress as it occurred. This allowed the team to determine when the boys' behaviors were steady. When the behaviors were fairly regular, the next phase would be implemented (i.e. baseline to intervention).

CHAPTER THREE

Results

Andrew

Figure 1 displays Andrew's overall percentage of out of seat behaviors during baseline as well as during the self-management intervention. During the first baseline, Andrew's percentage of out of seat behaviors fluctuated between the sessions from 31.6% to 65.0% with an average of approximately 39.6%. His out of seat behaviors decreased during the intervention phase to an average of 16.7%, with one session exhibiting 0% of out of seat behavior. When the intervention was removed, his out of seat behaviors increased to slightly above the first baseline (42.9%). Finally, as the intervention was implemented the second time, the percentage of out of seat behavior declined to an average of 6.2% across four sessions, with three being below 4%.

Eli

Figure 2 compares Eli's out of seat behaviors during baseline and intervention sessions. Eli's behaviors were more consistent across sessions. During the first baseline, 73.4% of his behaviors were off-task and sitting inappropriately. His out of seat behaviors continued to decrease throughout the four sessions with an average of 14.6%. Once the intervention was removed, his out of seat behaviors increased to 37.0% in comparison to 22.0% for the second intervention phase.

Reliability

For reliability purposes, a secondary researcher collected data along with the primary researcher approximately 35% of the total number of sessions. When observing Andrew and Eli, inter-rater reliability was approximately 92% and 95% respectively.

CHAPTER FOUR

Discussion

Positive Results

The results support the hypothesis that the desired on-task behavior of sitting appropriately would be increased as a result of the implementation of the self-management intervention. These results displayed similar conclusions as previously conducted studies because both participants reduced their out of seat behavior during the intervention period (Briesch & Chafouleas, 2009; Moore et al., 2013). Further, the current study was successful in applying the unique strategy of using a pre-service practitioner to implement the intervention.

Andrew's behaviors varied more than expected. His out of seat behaviors decreased during both of the intervention phases, with the second intervention phase displaying a large decline in out of seat behavior in comparison to baseline. During the second baseline measurements when reinforcements were absent, Andrew again exhibited a high rate of out of seat behavior. Comparing multiple baselines and intervention phases was important in displaying that the self-management intervention caused the decrease of out of seat behavior rather than by chance or the effects of another variable. Overall, Andrew's out of seat behaviors were reduced by approximately thirty-three percent by the end of the self-management intervention (first baseline average to second intervention phase average).

Eli's behaviors were fairly consistent during baseline and then the intervention, with the exception of the second baseline phase. His out of seat behaviors decreased by approximately fifty percent at the end of the second intervention phase in comparison to the first baseline average. Eli's out of seat behaviors increased during the second baseline and decreased at a steep rate when the intervention was implemented for the second time. These behaviors suggested that the intervention had a high probability of causing the decrease in off-task behavior.

At the beginning of the first intervention phase, the pre-service practitioner prompted the boys by handing them a pencil in order to fill out their data sheets at the onset of the auditory timer each minute. The pencils were then returned to the pre-service practitioner after the data sheet was filled in hopes of reducing distraction between intervals. During the latter interventions sessions, pencils and data sheets remained by each participant in order to allow them to independently self-manage. This technique enabled the pre-service practitioner's verbal reminders to decrease. The prompting by the pre-service practitioner needed to be minimized in order to give the boys independence in fulfilling the self-management process. Multiple times, Andrew specifically, would not respond to the verbal timer and needed prompting to fill out his data sheet even when he was sitting appropriately. It may have been beneficial if the prompting via the pre-service practitioner could have been reduced further or eliminated completely. Future studies should seek to minimize individual prompting to increase independence and self-monitoring.

Implications

This study replicated and expanded upon the findings of previous research, such as the study conducted by Mammolenti et al. (2002). The study by Mammolenti et al. (2002) successfully implemented a self-monitoring intervention with children with learning disabilities. However, the participants in the study were forth and fifth grade students, ten to twelve years of age. Another study by Callahan and Rademacher (1999) found successful results implementing a self-management intervention with a nine year old boy with autism. The results of the current study further provide evidence that self-management systems can be implemented with younger children.

The abundance of literature in regards to self-management systems is assuring, however, there is limited research using children with disabilities who are often found excluded from such studies. This study suggests that simple intervention programs are successful and can improve on-task behaviors, which may increase opportunities for children with various disabilities to be involved with their peers. As the study by Padilla-Walker et al. (2010) suggested, interacting with peers may not only increase on-task behaviors, but social skills and relationships as well.

This study supported previous research that intervention programs do not need to be confined to school systems. While the study by Mammolenti et al. (2009) used paraprofessionals to help implement the intervention, the current study used a single pre-service practitioner. This suggests that a simple intervention process can be implemented in a variety of settings and does not take a highly skilled individual to implement such a system. This is an important finding because a Sunday school teacher, daycare worker, etc. may be successful in implementing an intervention with young children.

Limitations

The results of the study are promising, however, several limitations could have added to the variability in the boys' behaviors. Andrew's behaviors varied more than expected. While the number of sessions was ultimately determined when the boys' behaviors were fairly consistent, more sessions may have further increased the consistency of their average behaviors. Future studies should anticipate and plan for the allowance of extra sessions in order for steady behaviors to be observed before moving onto further phases. Additionally, the activities that they boys completed during the study differed slightly from session to session, which could have contributed to the variability in behaviors. Depending on what activity the boys were involved in determined how focused they were on self-monitoring. While the boys appeared to self-manage their sitting behaviors, they were less focused on completing the data sheets. Another limitation that existed in the study was the lack of IQ data on the participants to determine their cognitive abilities. This data would have helped to evaluate whether the results of the intervention were correlated with their IQ.

Future Research

While the results are promising in regards to the clinical environment, future research should study the generalization of such results. It would have been beneficial to examine if the boys' sitting behaviors generalized into their home school or another classroom setting. Additionally, there is limited research in regards to self-management processes within clinical settings (Briesch & Chafouleas, 2009). Future research should expand upon the present study and aim to implement self-management interventions

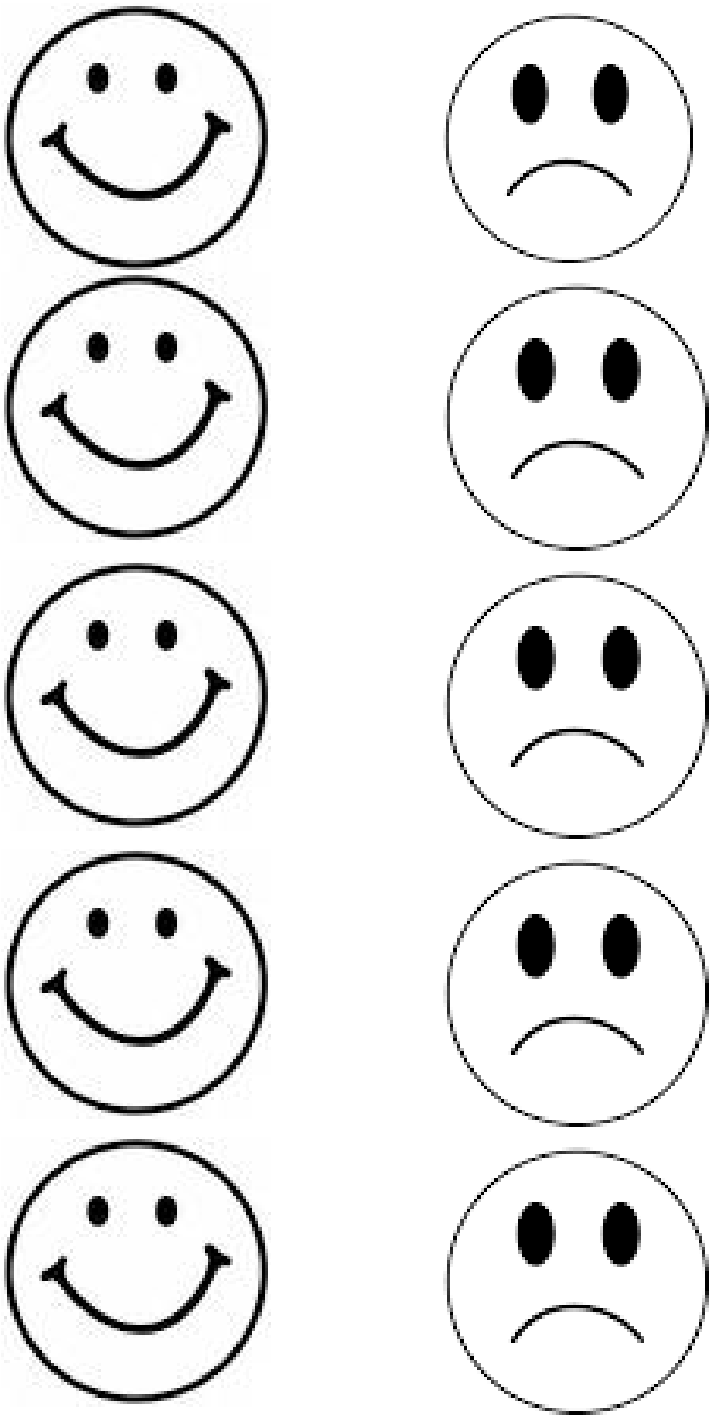
within clinics in order to help young children who may not be able to attend a normal classroom setting. The clinical environment may play a role in acclimating young children into the classroom as well as generalizing their on-task behaviors to a variety of settings.

This study contributes to the ongoing literature involving self-management interventions (Fox & Garrison, 2003; Moore et al., 2013; Yucesoy Ozkan & Sonmez, 2011). The study was successful in using a pre-service practitioner to implement the study and showed promising results within a clinical setting. Pre-service practitioners may be a beneficial factor in helping teachers and clinicians implement interventions with a variety of children.

APPENDICES

APPENDIX A

Participant's Data Sheet



APPENDIX B

Researcher Data Collection Sheet

Participant: _____ Date: _____

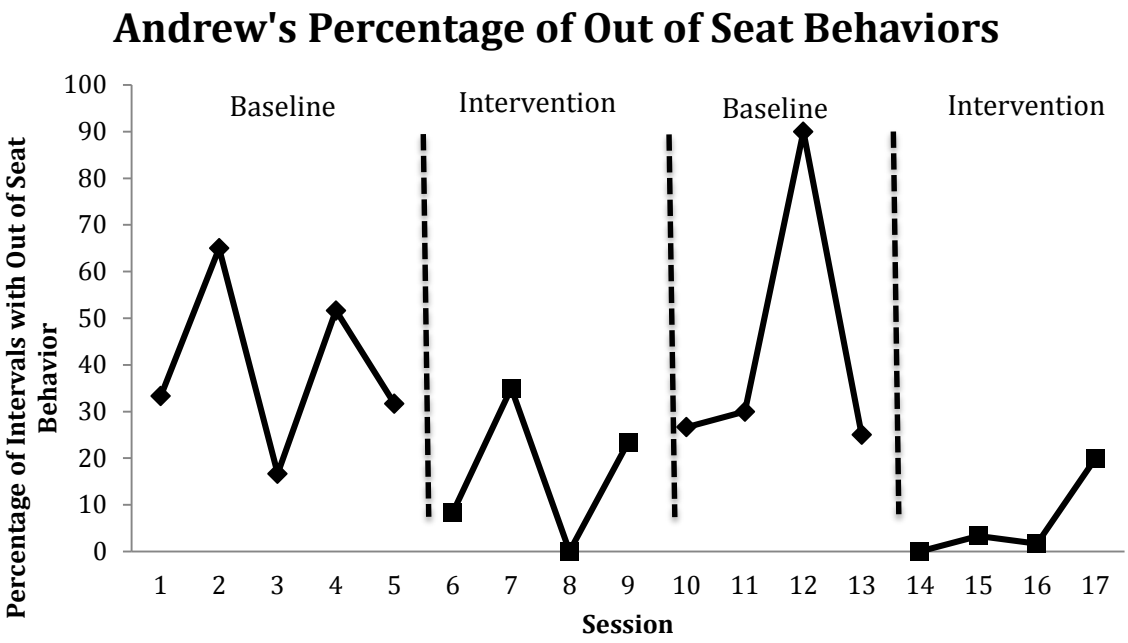
Primary Researcher _____ Session #: _____

Secondary Research _____ Condition *(circle one)* Baseline Intervention

	0 -1 min	**1 - 2 min**	**2 - 3 min**	**3 - 4 min**	**4 - 5 min**
0- 10 sec	Out of Seat	Out of Seat	Out of Seat	Out of Seat	Out of Seat
10 - 20 sec	Out of Seat	Out of Seat	Out of Seat	Out of Seat	Out of Seat
20 - 30 sec	Out of Seat	Out of Seat	Out of Seat	Out of Seat	Out of Seat
30 - 40 sec	Out of Seat	Out of Seat	Out of Seat	Out of Seat	Out of Seat
40 - 50 sec	Out of Seat	Out of Seat	Out of Seat	Out of Seat	Out of Seat
50 - 60 sec	Out of Seat	Out of Seat	Out of Seat	Out of Seat	Out of Seat

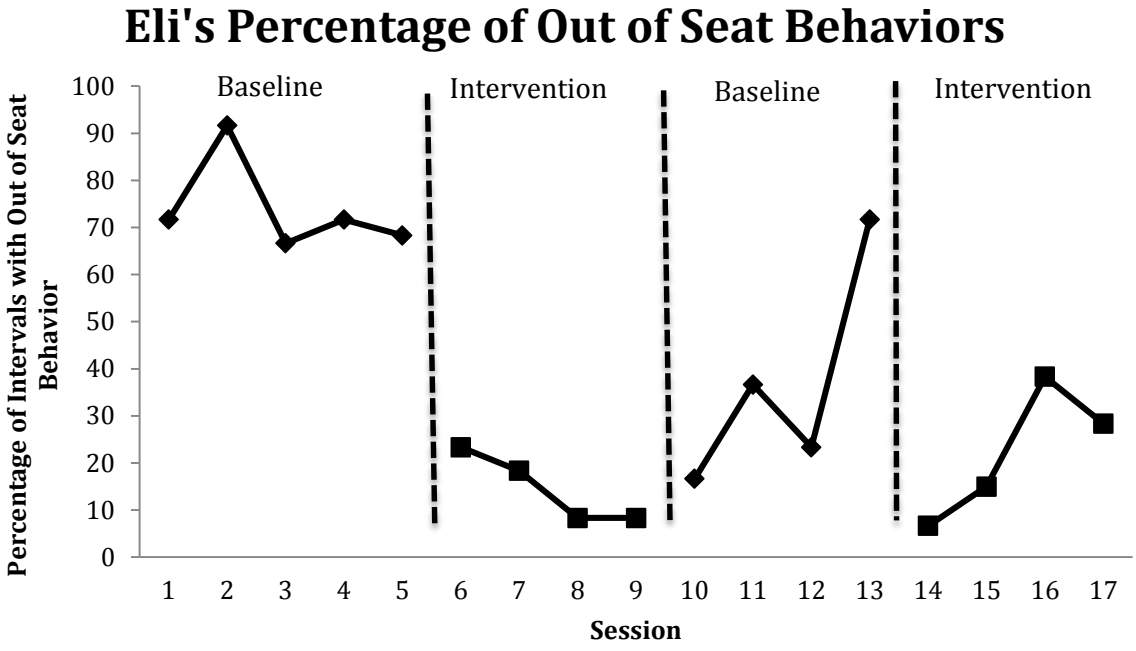
Appendix C

Andrew's Results



Appendix D

Eli's Results



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