USING "SELF & MATCH" TO REDUCE PROBLEM BEHAVIORS IN A CHILD WITH AUTISM

by

Debra Shapin-Ruff

A thesis

submitted in partial

fulfillment of the requirements for the degree of

Master of Science in School Psychology

in the College of Education

National University, Bakersfield

August 15, 2009

APPROVED

For the Department of Counseling and School Psychology:

We, the undersigned, certify that the thesis of the following student meets the required standards of scholarship, format, and style of the university and the student's graduate degree program for the awarding of the master's degree.

Debra Ruff
Thesis Author

Dr. William Matthew
Chairperson's name (Chair) Department name

Karrie Tallon
Committee member's name Department name

Joe Dayan
Committee member's name Department name or professional affiliation

ACKNOWLEDGMENTS

I owe all my success to my mother, grandma and grandpa. I could not have completed this without all your love and support. Thank you for every opportunity you have given me. I appreciate all of you everyday.

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ABSTRACT

USING "SELF AND MATCH" TO REDUCE PROBLEM BEHAVIORS
IN A CHILD WITH AUTISM

The "Self and Match" system is a self-management system combined with positive reinforcement. This study explored the effects of the "Self and Match" system for a kindergarten student with Autism who demonstrated a number of behavior problems in the classroom setting. The researcher executed the "Self and Match" system using a single-subject design. Data were collected during the baseline and intervention phases. The participant demonstrated an increase in overall compliance during the intervention phases. This paper presents results for this participant as well as implications and suggestions for future research.

Debra Ruff
July 9, 2009

CHAPTER 1

Introduction

One of the primary purposes of education is to provide students with the necessary tools for success in the future, whether it is to prepare students for the working world or to continue further education through college. Unfortunately, success in school does not come easily to everyone, and educators have spent decades in attempting to create interventions for students with a myriad of needs. One condition that currently affects 1 out of 150 children is Autism. Children with Autism are affected adversely in education settings due to behavior problems; therefore, the most effective treatments for Autism are behavioral approaches, such as self-management and positive reinforcement (Ruble & Gallagher, 2004).

Background of the Study

Children with Autism usually exhibit one or more of the following behavioral symptoms: hyperactivity, short attention span, aggressiveness, impulsivity, self-injurious behaviors and temper tantrums (American Psychiatric Association). Self-management is an effective intervention strategy for children with Autism because it utilizes structure and visuals to help students in the classroom (Mancina, Tankersley, Kamps, Kravits & Parrett, 2000; Stahmer & Schreibman, 1992; Wilkinson, 2008). Self-management is a non-aversive way to correct a wide range of behaviors. Self-management is also easy to implement because students do not require any change in teaching methods and do not

require constant supervision (Koegel et al.). Some of the other benefits of self-management are that it is cost effective, tailored for each individual, and a great way to collaborate with the parents of students in special education (Shapiro & Kratochwill, 2000; Wilkinson, 2008). An important component of self-management is positive reinforcement. Research indicates that reinforcement along with self-monitoring works better than self-monitoring alone (Koegel et al., 1992; Rooney et al., 2001).

Statement of the Problem

The problem is that children with Autism exhibit socially unacceptable behaviors, and these behaviors need modification in order for children to function successfully in society.

Purpose

The purpose of this study was to determine if self-management along with positive reinforcement, to a student with Autism, would increase the number of positive behaviors the student exhibits on a daily basis.

Research Question

The following research question guided this study: “Will teaching self-management skills, along with positive reinforcement, to a student with Autism increase the number of positive behaviors the student exhibits on a daily basis?”

Assumptions

One assumption was that the student who participated in this study will remain in school throughout the course of this experiment. Another assumption was that the staff included in the study implemented the system on a consistent basis.

Delimitations

Because this study only included one student, a limitation to this study is that the results may not be generalized to all populations and settings. Another limitation was that more than one observer collected data for this study.

Definitions

For the purposes of this study, the following words are defined:

Self-management: A series of steps during which a person first determines whether (s)he has demonstrated a specific behavior, next records the occurrence of this behavior, and then decides whether or not to receive an award (Koegel, Koegel, and Parks, 1992).

Reinforcer: Anything that follows a behavior and increases that behavior (Miller, 2006).

Positive Reinforcement: The process of giving a reinforcer to increase the rate of a behavior (Miller, 2006).

Target behaviors: The following were specifically defined based on the needs of the target student:

1) Being respectful: waiting to be called on before talking, complying with teachers and staff;

2) Following directions: stopping when told to stop, working on task, not talking to other students during individual work time;

3) Personal space: staying in assigned seat or area, not touching other students with hands or feet.

Compliance: Demonstrating an increase in a target behavior.

Overall Compliance: The degree to which the participant demonstrates compliance in all three target behaviors combined.

Summary

Children with Autism are affected adversely in education settings due to behavior problems. Many children with Autism do not demonstrate the appropriate social skills to achieve success in and beyond the classroom. The purpose of this study was to determine if self-management, along with positive reinforcement, was effective in increasing the number of appropriate behaviors of a student with Autism.

CHAPTER 2

Review of the Literature

One of the many goals of our public education system is to provide students with tools for success in the future, whether it is to prepare students for the working world or to continue further education through college. Unfortunately, success in school does not come easily to everyone, and educators have spent decades in attempting to create interventions for students with a myriad of needs. Presently, one condition that affects 1 out of 150 children is Autism, which is characterized by impaired communication and socialization skills (American Psychiatric Association, 2000). Most children with Autism are affected adversely in education settings due to behavior problems; therefore, the most effective treatments for Autism are behavioral approaches (Ruble & Gallagher, 2004). Some popular behavioral interventions currently used in the educational setting are self-management and positive reinforcement. This chapter will discuss some of the obstacles that keep students with Autism from success in the classroom as well as review suggestions that past research has proven to be effective.

Autism

The cause of Autism is currently unknown, and at this time, there is no known cure. A diagnosis of Autism is based primarily on observable behaviors and not on medical tests. According to the American Psychiatric Association, (2000) some features of Autism are impaired development in social interactions and communication as well as a limited amount of activities or interests. This may include a preoccupation with one

narrow interest and a strong resistance to change. Children with Autism usually exhibit one or more of the following behavioral symptoms: hyperactivity, short attention span, aggressiveness, impulsivity, self-injurious behaviors and temper tantrums (American Psychiatric Association).

Students with Autism have impaired social skills, which means they often have difficulty understanding how to take turns and share with others, reading the emotions of others, following instructions, and initiating and maintaining interactions or conversations with others. In addition to their having difficulty with social skills, children with Autism often have problems organizing their free time, transitioning (moving from one activity to the next), and flexibility with modifications to their daily activities. Overall, their limited communication skills create frustration in children with Autism and interfere with almost every area of their development (Ruble & Gallagher, 2004).

Self-Management

Because children with Autism need structure and visuals to help them in the classroom, self-management is an effective intervention strategy (Mancina, Tankersley, Kamps, Kravits & Parrett, 2000; Stahmer & Schreibman, 1992; Wilkinson, 2008). The training manual by Koegel, Koegel, and Parks (1992) defines self-management as a "series of steps where a person first determines whether a specific behavior has occurred, next records the occurrence of this behavior and then obtains a reward." Self-management is a non-aversive way to correct a wide range of behaviors. Self-management is also easy to implement because it does not require any change in teaching methods and does not require constant supervision (Koegel, et al.). Some of the other

benefits of self-management include that it is cost effective, tailored for each individual, and a great way to collaborate with the parents of students in special education (Shapiro & Kratochwill, 2000; Wilkinson, 2008).

Another benefit of self-management is that it can be used to help students with different types of disabilities. Brooks, Todd, Tofflemoyer and Horner (2003) conducted a functional assessment along with a self-management system for a ten year-old girl with Down's syndrome. During seatwork and group work in both her general education and resource classroom, the student demonstrated high rates of off-task behavior in the classroom such as making faces at or talking to her peers, drawing, playing with objects and refusing to work. In addition, the student failed to complete multistep tasks without multiple prompts (Brooks, et al.).

The goal of the self-management program implemented by Brooks et al. was to increase academic engagement and work completion. During the training, the student learned positive alternative skills for obtaining attention by using a printed hand icon as a prompt to raise her hand. The accuracy of the student assessment form was checked but not measured because the experimenters were more focused on the use of the system. When the student recorded her behavior correctly, she was acknowledged for accurate ratings instead of getting in trouble for being off-task. The results of this study showed an increase in the rates of academic engagement and work completion across settings; however, this intervention was not effective in increasing engagement during group instruction (Brooks, et al., 2003).

Rooney, Hallahan and Lloyd (2001) created a self-management system for students with learning disabilities. Data were collected using a self-management procedure from four 2nd grade students who had been selected by the severity of their attention problems. The self-management procedure consisted of a self-recording sheet and a tape recorder. The teacher placed the tape recorder on the side of the room and then instructed the children to ask whether they were paying attention whenever a tone sounded. Then the students were supposed to mark either yes or no. These four students were observed three times a week for twenty minutes. During this time, data were collected using a time-sampling procedure. The dependent variable for this study was the time of on-task behavior. Attention to task increased for learning disabled children in the regular education classroom; therefore, the results from this study revealed that self-management is promising for the future of students in the educational setting (Rooney, et al.).

Both of the two previous studies indicated the effectiveness of self-management for students with Down syndrome and learning disabilities (Brooks el at., 2003; Rooney et al, 2001). In addition to being useful for different disabilities, self-management is also beneficial to students who have similar disabilities, but different problem behaviors. Stahmer and Schreibman (1992) and Wilkinson (2008) designed experiments to test the effects of two self-management treatments with children with Autism.

Stahmer and Schreibman (1992) selected three children with Autism who displayed very few appropriate toy play and self-stimulatory behaviors without supervision. Baseline data on this single-subject multiple baseline design across subjects

were obtained in 10-minute segments over a few days. During this period, the researcher observed the children through a one-way mirror while they were given free access to toys, but no feedback. Once baseline data were collected, the students went through discrimination training twice a week for one hour. After the students finished their training, the self-management program was implemented. The data from this treatment resulted in increased appropriate play behaviors and illustrated how self-management can be effective in helping students with Autism succeed in the classroom.

Wilkinson (2008) completed another study that examined the use of self-management with children with Autism; however, this study investigated whether self-management could cause an increase in on-task behavior and compliance. The eight-year-old selected for this study was a high-functioning student on the Autism spectrum, which is the range of severity of autistic characteristics, and had a history of behavior problems. The self-management involved two steps. The first was to teach the student to observe his own behavior, and the second was to document his behavior on a recording sheet. The teacher taped the self-recording form to the corner of the student's desk and every ten minutes the special education teacher physically cued him to ask himself and record if he were paying attention and following the rules. The outcome of this study confirmed that self-management is promising for teaching high-functioning students with Autism independence and self-control (Wilkinson).

Any self-management program will be more successful long-term if the reinforcement is faded away gradually. Unfortunately, only two of the previous studies incorporated fading into their programs. Stahmer and Shreibman (1992) faded the

experimenter's presence once the student was able to play well for twenty minutes at a time. At this time, the experimenter would leave the room and gradually reduce reinforcement by increasing the time between reinforcers. As the student demonstrated more of an increase in appropriate play behavior, the teacher removed the self-management materials, followed by the watch and monitoring sheet and eventually, all of the self-management was done verbally (Stahmber & Shreibman). During Wilkinson's (2008) self-management program, the system was faded when 90% of the goals were met by increasing intervals between reinforcement, then by slowly eliminating prompts so the student could continue to learn to keep track of his behavior.

Positive Reinforcement

An important component of self-management is positive reinforcement and reinforcement along with self-monitoring works better than self-monitoring alone (Koegel, et al., 1992; Rooney, et al., 2001). The definition for positive reinforcement is the process of giving a reinforcer to increase the rate of a behavior, and a reinforcer is anything that follows a behavior and increases that behavior (Miller, 2006). Some examples of reinforcers are candy, stickers, or even a pat on the back from a special education teacher. Each of the four above-mentioned studies involved some type of reinforcement. The researcher from the study completed by Brooks et al. (2003) gave the student a star sticker, a thumbs up, or a pat on the back from her special education teacher when she raised her hand. At the end of each class period, the student also had the option to share her work with her classmates. Rooney et al. examined the results of self-

management with and without the use of reinforcers, such as candy or snack crackers, and concluded that reinforcement added to the success of the self-management procedure.

The two studies that involved students with Autism also used reinforcement. In the study by Stahmer and Schreibman (1992), reinforcement that included stickers, sodas, and access to toys, were given if the child demonstrated appropriate play and made a check mark in the specified box. If the child self-monitored correctly, the teacher praised the child. The teacher allowed the student to make a selection from a group of pre-selected reinforcers, such as extra computer time and access to a preferred game or activity, when he met his goal for the day (Wilkinson, 2008).

Another team of researchers created a study involving a student with Autism to investigate the effects of token reinforcement, which occurs when a child receives a token as a reinforcer. (Tarbox, Ghezzi, & Wilson, 2006). A five-year-old boy with Autism collected the tokens in this study, and he could exchange them for a break to play with a selection of preferred toys. Throughout the course of this study, the experimenters also collected data when the student earned tokens but did not exchange them for back-up reinforcers, or play breaks, when the time between earning the tokens and play breaks increased and when the amount of tokens required for a reinforcer increased. The results of this study showed that the teacher may increase tokens required for back-up reinforcers but the method is more effective when the back-ups are available and immediate (Tarbox et al., 2006).

One important finding from this study is that not all reinforcement is successful. In order for reinforcement to be successful, certain factors must be considered. A teacher

must only deliver the reinforcer immediately after the correct behavior occurs, the amount of the reinforcer must be worthwhile, and the teacher should not give too much of the reinforcer (Miller, 2006). It is also paramount that students share control in the choice of reinforcers. A student will always work harder if he or she is working towards a reward that is meaningful to him or her. All rewards need to be paired with social praise. Initially, the reward should be easy to obtain in order to ensure success and larger rewards should be given less frequently (Koegel et al., 1992).

Summary

Similar to reinforcement, self-management will only be effective when the teacher implements the method correctly. First, the child needs to understand what is expected and have the skills necessary to record his or her own behavior. The child must learn the definition of the target behavior and simple recording procedures, there must be special education teacher reliability checks, and the child must practice (Shapiro & Kratochwill, 2000). If the teacher implements the self-management method correctly, and uses successful positive reinforcement and fading procedures appropriately, a student with Autism will learn to decrease problem behaviors as well as increase appropriate replacement behaviors.

CHAPTER 3

Research Design

The purpose of Chapter 3 is to present the quantitative design and procedures that were used to answer the research question present in Chapter 1: Will teaching self-management skills, along with positive reinforcement, to a student with Autism increase the number of appropriate behaviors the student exhibits on a daily basis?

Research Design

The researcher utilized the A-B single-subject design for this study. A single subject design was chosen because only one student was selected for this study. The A phase was the baseline, which is the time data were collected before the intervention was implemented. The B phase is the time during which data were collected during the implementation of the "Self & Match" intervention. The change in criterion occurred when the number of stars required to earn a reward was increased from 5 to 6 stars. The independent variable was the "Self & Match" intervention. The dependent variable was the percent of compliance for each of the three-targeted behaviors as well as the overall percentage for the combination of all three targeted behaviors.

Site Setting

The setting was at an elementary school in South Orange County, California. The researcher selected this site because this was the location where the researcher was

completing her internship hours. The researcher obtained permission from the principal and special education teachers from the designated school site.

Population

A student with Autism with a high number of problem behaviors, including disrespect towards teachers and staff, an inability to follow directions and an inability to stay in his assigned seat and area, was selected to participate in this study. The student was also enrolled in a Special Day Kindergarten Class.

Sample

The researcher chose one participant to complete this study. This participant was a five year-old male enrolled in a Special Day Kindergarten Class. This student exhibited at least three target behaviors that were adversely affecting this student's performance in the classroom.

Measurement methods

The researcher used the following forms developed by Salter and Croce (2008) for this study: "Self & Match: Considerations Prior to Implementation Form", "Self & Match Monitoring Form", List of Rewards, and Occurrence/Non-Occurrence Chart. The "Self & Match: Considerations Prior to Implementation Form" is a 7-page questionnaire (See Appendix A). The purpose of this form was to gather information about the student who the examiner selected to participant in this study. The examiner, special education teacher, Autism specialist, school psychologist, and parent participated in filling out this form. The researcher then used this form to help individualize the target student's "Self &

Match" system. The following was determined from this form: 1) the target behaviors, 2) the criteria for the reinforcer, 3) the frequency of the reinforcer.

The "Self & Match Monitoring Form" had a chart on it, along with the reinforcer the student was working towards and the amount of points needed to earn the chosen reinforcer (See Appendix B). Both the special education teacher, or instructional aide, and the student completed this form throughout each day. The examiners analyzed this form by determining the percent of points earned each day and then graphing these numbers daily. The List of Rewards contained an assortment of reinforcers that the examiner, Autism specialist, parent, and student agreed on and approved (See Appendix C). The researcher, special education teacher, and Autism specialist determined the reinforcers through observations and student interviews.

The researcher used the Occurrence/Nonoccurrence Chart (O/NO Chart) to collect baseline data for this study before the "Self and Match" system was implemented (See Appendix D). This is a partial-interval recording form, which means the first instance of a targeted behavior within the 5-minute recording period that the examiner documented. The special education teacher and instructional aide used this chart to take data in 5-minute intervals throughout the student's school day. The researcher graphed the percentages of intervals with targeted behaviors daily. The special education teacher and instructional aides were the persons responsible for collecting data for the O/NO Chart completing the "Self and Match Monitoring" form. The examiner conducted reliability checks throughout the study by arriving unannounced to collect data simultaneously with

the special education teacher or instructional aide. The examiner then analyzed these data for consistency between the examiner and special education teacher or instructional aide.

The researcher required that both the parent and school site representative complete and sign the consent form before the implementation of this study (See Appendix E & Appendix F).

Procedure

Once the examiner received parental consent for the student in the study, the examiner, Autism specialist, special education teacher, parent and school psychologist worked together to complete the "Considerations Prior to Implementation Packet." The examiner and Autism specialist then reviewed the packet and developed an individualized "Self & Match Monitoring" form. The student's special education teacher, instructional assistant and examiner collected baseline data using the Occurrence/Non-occurrence Chart (O/NO Chart) prior to the implementation to "Self & Match." Once the examiner obtained a stable baseline, the examiner and special education teacher taught the student how to use the "Self & Match Monitoring Form."

As soon as the student was able to demonstrate an understanding of the "Self & Match Monitoring Form," implementation began. At the beginning of each week, the student brought in a toy from home and wrote his choice at the top of his "Self & Match Monitoring Form." At the end of each designated time, the student and his special education teacher or instructional assistant independently answered the three questions on the form by circling either a smiley or frowning face. The examiner and Autism specialist

created these questions based on the problem behaviors specific to the student. Then, the student and either the special education teacher or instructional assistant compared answers. To facilitate understanding of adding the points, the special education teacher or instructional aide covered the frowns when counting the smiles and vice versa. At the designated times, the student and the special education teacher totaled his points to see if he earned a star. If the student received the predetermined number of stars for the day, the teacher allowed the student to use time at the end of the school day to play with his toy. If he did not earn his reward, the student still received a break, but he also received little attention and no access to his toy to avoid reinforcement. Each day, the student selected and wrote what reinforcer he was working for at the top of his new form. The teacher allowed the student to bring in a new toy to trade for his old one at any time. As the student demonstrated a decrease in target behaviors, the teacher increased the number of stars needed to receive his reward at the end of the day.

Ethical Considerations

The researcher required the participant's parents to submit a signed permission slip before the student began participating in this study. There was minimal risk to the student for participating in this study. Because this study was voluntary, the participating student could choose to stop participation at any time, and all parties involved kept the results confidential.

Summary

The current study involved the participation of one student currently enrolled in a Special Day Kindergarten Class. The teacher taught this student specific rules, which the

examiner, special education teacher, and Autism specialist created, based on student observations, and parent, teacher, and student interviews. The researcher then created a "Self & Match Monitoring Chart" (Salter & Croce, 2008) for the student. The student and the teacher, or instructional aide, filled this chart out daily. The student needed to earn a specified number of stars before he could receive the chosen reinforcer. The student had the opportunity to bring in one toy from home to play with as his reinforcer. Once the student began to demonstrate a decrease in target behaviors, the teacher increased the number of stars the student needed to obtain in order to play with his toy at the end of the school day.

CHAPTER 4

Data Analysis and Discussion

The purpose of chapter 4 is to review the data that the examiner collected throughout the "Self & Match" intervention. The researcher will present data in graphs, which are separated by each of the following targeted behaviors: personal space, following directions, and being respectful. Another graph combines all three targeted behaviors to provide a visual analysis of the participants overall compliance.

Data Analysis

The researcher analyzed all data from the Occurrence/Non-occurrence Chart and "Self & Match Monitoring Form" through visual analysis. Basic statistical data included the mean, effect size and percentage of overlap across phases. The outcome of the graphs determined whether this intervention was successful. If the percentage of intervals daily remains above the target percentage, then the intervention will have been successful. As the criterion changes, if the percentage of daily intervals continued to remain stable or above the target percentage, then the increase in target behaviors will have been due to the intervention and not due to chance. Data for personal space, being respectful, following directions and overall compliance are presented in Figures 1-4.

Data Presentation

Personal Space. A stable baseline with a mean of 20 was recorded (see figure 1). The mean for the first intervention phase was 69.1 with 22.2% of overlapping data points.

The first intervention phase showed an effect size of 2.35 when compared with the data from the baseline phase. The mean for the second intervention phase was 74.7 and produced an effect size of 0.27 when compared to the first intervention phase.

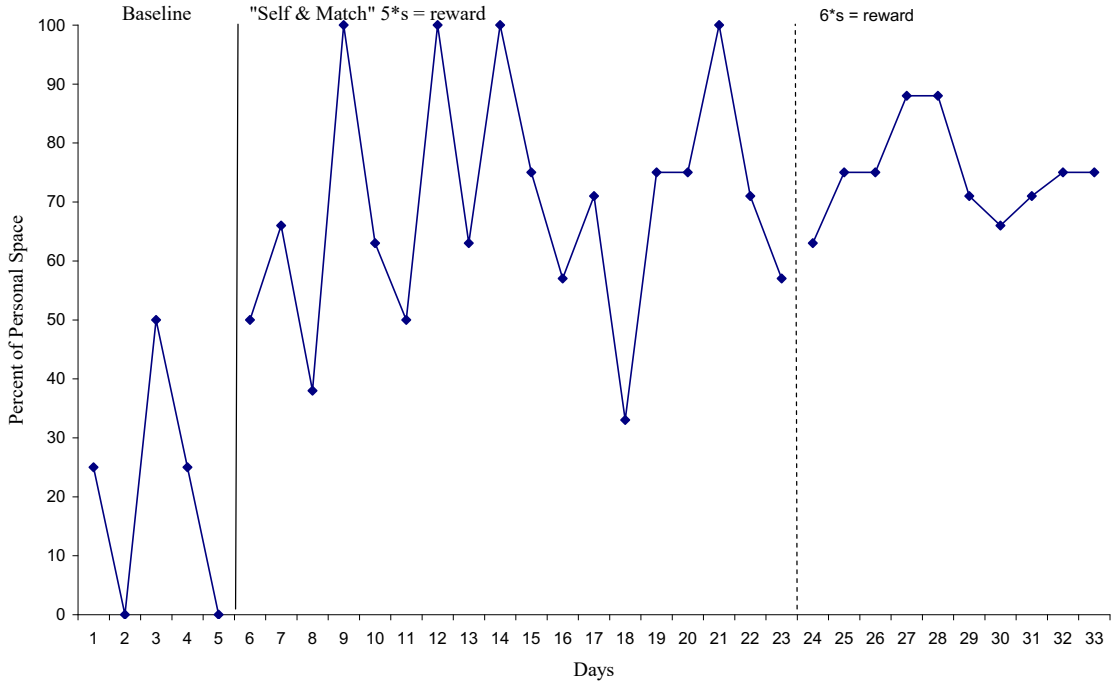

Figure 1 Personal space across baseline and intervention phases

Being Respectful. A stable baseline with a mean of 30 was recorded (see figure 2). The mean for the first intervention phase was 73.1 with 16.7% of overlapping data points. The first intervention phase showed an effect size of 3.86 when compared with the data from the baseline phase. The mean for the second intervention phase was 65.4.

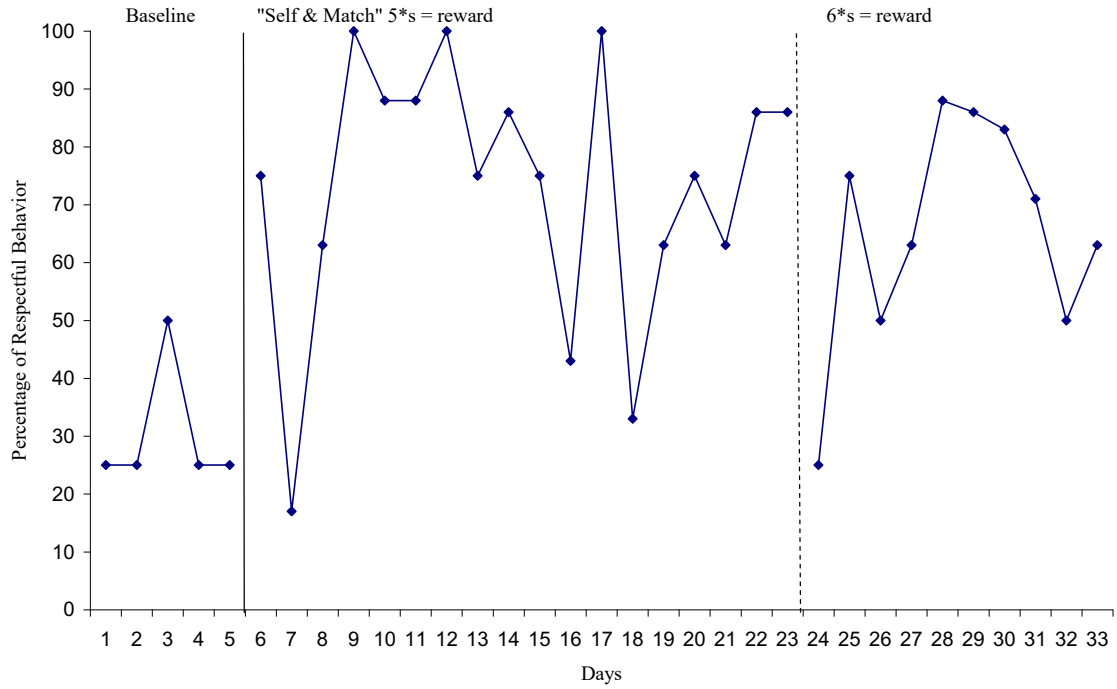

Figure 2 Being Respectful across baseline and intervention phases

Following Directions. A stable baseline with a mean of 10 was recorded (see figure 3). The mean for the first intervention phase was 67.5 with no overlapping data points. The first intervention phase showed an effect size of 4.2 when compared with the data from the baseline phase. The mean for the second intervention phase was 58.5.

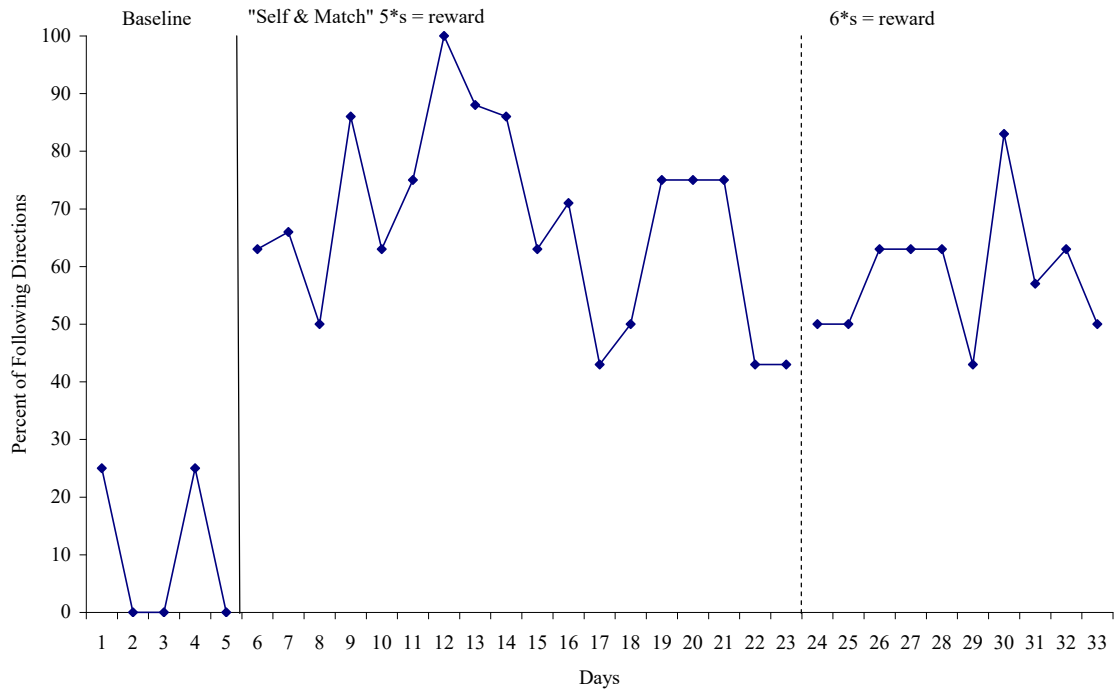

Figure 3 Following Directions across baseline and intervention phases

Overall Compliance. A stable baseline with a mean of 19.8 was recorded (see figure 4). The mean for the first intervention phase was 69.3 with no overlapping data points. The first intervention phase showed an effect size of 4.4 when compared with the data from the baseline phase. The mean for the second intervention phase was 66.4.

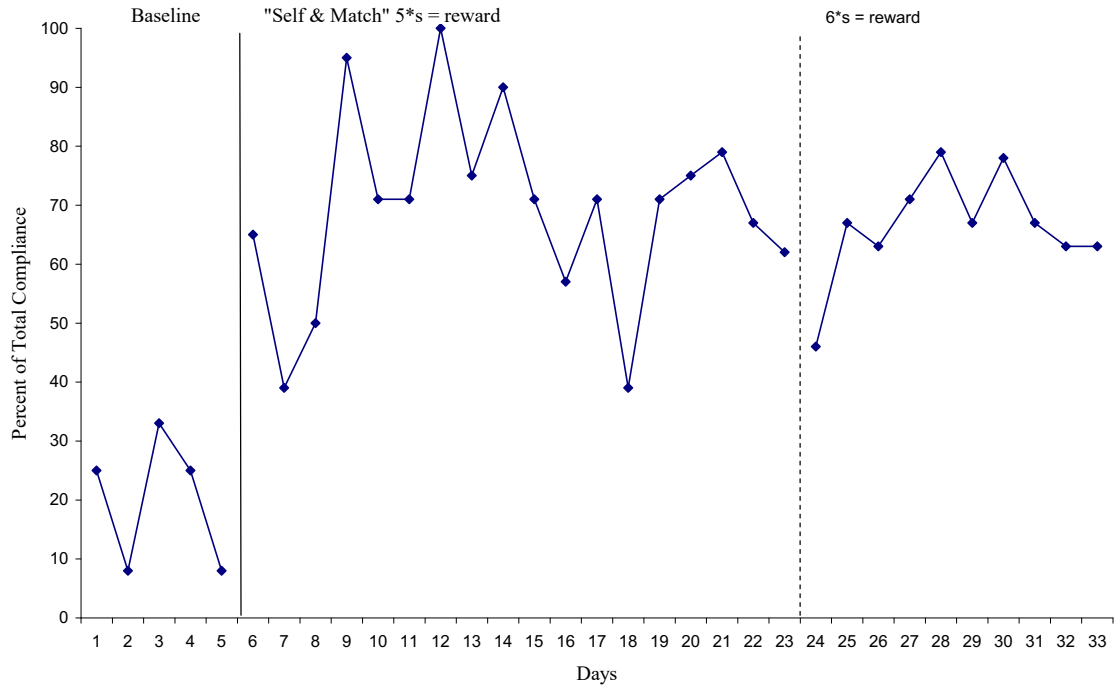

Figure 4 Overall Compliance across baseline and intervention phases

Discussion

The present study explored the effects of the "Self & Match" intervention on a student's behavior in three targeted areas: personal space, following directions, and being respectful. The results of this study show that the "Self & Match" intervention played a role in the increase in the participant's use of the targeted behaviors. Overall, before the "Self & Match" intervention was executed, the participant demonstrated a rare occurrence of the targeted behaviors. Once the intervention was put into place, the participant began to demonstrate an increase in the percentage of each of the targeted behaviors. The participant's target behavior that showed the least amount of growth was

personal space. The participant's use of behavior that showed the most improvement was following directions.

The use of self-management was significant in teaching the participant a number of important skills including perspective taking and the difference between making good and bad choices. Perspective taking is the student's ability to understand whether he made good or bad choices. Both of these skills are often absent in students with Autism and the use of positive reinforcement was an important factor in motivating the student to demonstrate the targeted behaviors. Other factors that helped motivate the participant were the fact that the participant chose the reinforcement and could change the reinforcing item at any time.

Limitations

The examiner noted a few limitations during the data collection process and these may have influenced the overall results of this study. One characteristic of a single-subject design is a small sample size. This study cannot be generalized to students across different settings because data were only collected for one student. The use of an A-B design is also a limitation because this design makes it difficult to prove that the intervention was the sole reason for the change in the participant's behavior.

Because the data were collected in a school setting, there was a variety of unavoidable limitations. The examiner only collected data during school hours and there was no way to know what happened when the student was at home. The intervention was not implemented on a daily basis because after every five days, there was a two-day

break. Another reason this intervention may have been impacted is due to the break in the intervention during the spring break, which lasted for nine consecutive days.

Another limitation to this study is the time in which the targeted behaviors were taught to the student. This design could have been stronger if the teacher taught each behavior separately and the student demonstrated success in one behavior before the teacher introduced another behavior.

CHAPTER 5

Summary and Conclusion

The purpose of Chapter 5 is to provide a summary of the results of the current study. A discussion of further implications for both teaching and future research follows the conclusion.

Conclusion(s)

The results of the present study suggest that the "Self & Match" intervention produced a positive effect on the overall classroom behavior of the participant. This study supports previous research, which indicates the usefulness of positive reinforcement and self-management strategies, and the strength that the two are capable of providing when used together.

Implications for Teaching

This study provides numerous implications for the classroom setting. The "Self & Match" intervention is a method that teachers can utilize to teach students how to self-manage their own behaviors. The "Self & Match" intervention can be individualized to target appropriate behaviors in different types of students, both typical and with disabilities. A teacher could easily implement this intervention classwide to motivate students.

Implications for Future Research

Because of the practicality and ease of applying this method, the possibilities of using “Self & Match” are unlimited. The student in this study had Autism and was in kindergarten. Future studies could track the progress of similar target behaviors of students of different ages and with a variety of disabilities, including Learning Disabilities and Mental Retardation.

This study targeted one student, but future researchers could observe the effects of applying this methodology to multiple students at one time. If a researcher were to replicate this study, the future researcher should teach one targeted behavior at a time and wait until the participant demonstrates one behavior before teaching another behavior. Once researchers gain more positive study results, more students would be able to benefit from the use of this method.

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APPENDICES

APPENDIX A

"SELF & MATCH: CONSIDERATIONS PRIOR TO IMPLEMENTATION FORM"

"Self & Match"

Considerations Prior to Implementation

Getting to Know Your Class…

• Basic Demographic Info
  • Age
  • Grade
  • Current Educational Placement
  • Supplemental Services (Speech, OT, APE?)	

• Current Behavior Management Procedures/Motivational System	
• Current Classroom Rules	
• Past Efforts: Class-Wide or Individual (Successful or unsuccessful?)	

Target Behaviors

• #1	
• #2	
• #3	
• #4	

Questions*

• What will be the "Self & Match" questions?
  • Frame positive
  • Are the all behaviors of concern linked to 1 of the questions?
  • Are the questions mutually exclusive (avoid overlap)?
  • Link to class rules?
  • No more than 3-5 questions?	

Logistics of the "Self & Match"

• Frequency of "Self & Match"
  • 15 minutes
  • 30 minutes
  • 1 hour
  • Each class period
  • Each "Work Station"
  • Session	

• Different per class? *PLEASE NOTE: Class periods/times, school start-time, dismissal time, recess time(s), lunch times, etc.*	
• Will the student "Self & Match" throughout all daily activities? • During Lunch? • During Recess? • During Free-time?	
• What will the student responses be? • Circle Yes/No • Circle Smile/Frown • Fill-in the Blank • Circle Picture of Preferred Item?	
• Who will the student "Self & Match" with? • All teachers? • 1-on-1 Instructional Assistant? • General Education teachers? • Special Education teachers? *PLEASE NOTE: Does the student have a 1:1 Instructional Assistant?*	

School Rewards*

• Criteria for Reward
  • Initially, set an easily obtainable goal to gain student acceptance
  • Increase by making data-based decisions	

• Frequency of Rewards
  • End of Day
  • 2 Times/Day
  • 3 Times/Day (mid-morning, before lunch, end of day)
  • End of Week
 	
PLEASE NOTE: What time will the student access the reward? What is the length of time that the student will engage in the reward activity?	

• Determine Reinforcers
  • Is it necessary to do a motivation assessment with the student?
  • Ask the student
  • Observe student
  • Parent/Teacher Input	

• How will student select reward?
  • Reward Menu?
  • Choice board?
  • Rewards change each day?
  • Can rewards be repeated more than once a day?	

• Is there a need for a weekly "Big Reward" in addition to the daily rewards? If so, what type? *	
• If the student does not earn his/her reward, what will be the alternative? Continue with the class activity? Break with no reinforcement?	
• Will the student access a "mystery reward" if he/she earns 100%?	

Home Rewards*

• Is there a need for a "Home Rewards" component to the student's Self & Match? If no, skip to next section (Data, Data, Data!).	

• Criteria for Reward
  • Initially, set an easily obtainable goal to gain student acceptance
  • Increase by making data-based decisions	

• Frequency of Rewards
  • End of Day
  • End of Week
  • 10 Stars	

• Determine Reinforcers
  • Is it necessary to do a motivation assessment with the student?
  • Ask the student
  • Observe student
  • Parent/Teacher Input	

• How will student select reward?
  • Reward Menu?
  • Choice board?
  • Rewards change each day?
  • Can rewards be repeated more than once a day?	

Data, Data, Data!

• Will graphs be total percentage of Self & Match points or will there be separate graphs for each reward opportunity throughout the day?	

• Who will graph the percentage of "Self & Match" points?
  • Teacher?
  • Behavior Analyst?
  • Other?	

• Who will collect/calculate/graph Occurrence/Nonoccurrence Data?
  • Each day?
  • Each week?
	Collect:
	
	Calculate:
	
	Graph:

• Will the student self-graph the data?
  • Each day?
  • Each week?	

• How will the progress be shared with the student's parents?
  • Send home daily points?
  • Send home progress "certificates"?
  • Will "Self & Match" be sent home for signature?
  • Data attached to 6 week progress reports?
  • Data shared for upcoming doctor appointments?	

Other Considerations

• Will the student set a goal each day of how many points he/she hopes to earn?	
• Will Self & Match be included in IEP goals or SDI?*	

• Who will introduce the Self & Match System to the student? How will it be presented?*
  • Teacher?
  • Parent?
  • Behavior Analyst?
  • T-Chart for behaviors?	

• Is there a need for a response – cost component?
  • Which behavior(s) would constitute a response-cost?
  • How many points would be deducted?	

• Will this plan be individual or class-wide?*	

• Will the student have the opportunity to earn any bonus points?
  • All "Yes" matches in one category?
  • Bonus points for homework completion?	

• Will plan tie into inclusion criteria?
  • Specials?
  • Class trips	

• Will plan tie into current class-wide system?	

• Are there any schedule conflicts that may necessitate an alternate version of "Self & Match"?
  • Assemblies?
  • Frequent CBI trips?
  • Club Days?
  • Pull-Out Services?	

• "No Match" is worth 1 point. How many are "Yes Match" worth? (2 points is recommended)	

Thinking Long Term…Fading Procedures *COMPLETE ADDITIONAL FORM*

• What is the procedure to increase student criteria for reward? How much increase will be made each time?	
• Will we increase the length of time between each "Self & Match" opportunity throughout the day?	
• What is the procedure to decrease the frequency of rewards?	
• Will we ever fade out the "Match" component and allow the student to independently self-monitor?	
• Which of the above procedures should we consider first?	

APPENDIX B

“SELF & MATCH MONITORING FORM”

_____'s "Self & Match" Form

Date: _____									Number of Points		
	Student	Teacher	Student	Teacher	Student	Teacher	Student	Teacher	Yes Match	No Match	Total

Total												

Today, I earned _____ Points. I *DID* or *DID NOT* earn my reward.

APPENDIX C

LIST OF REWARDS

- Take a walk with a teacher
- Singing Songs
- Talk with a teacher about Noggin TV shows like Oswald and Little Bill
- Jump and Roll Outside
- Be the “teacher” for Simon Says or Morning Meeting
- Make Copies on the Copy Machine
- Play with a friend
- Help Mrs. Salter with a project
- Go on a “treasure hunt”/explore outside!
- Work with office supplies such as a stapler.

APPENDIX D

OCCURRENCE/NONOCCURRENCE CHART

XXX's Occurrence/Nonoccurence Chart

Staff Name: _____

Date: _____

	Behavior	Setting
7:00		
7:05		
7:10		
7:15		
7:20		
7:25		
7:30		
7:35		
7:40		
7:45		
7:50		
7:55		
8:00		
8:05		
8:10		
8:15		
8:20		
8:25		
8:30		
8:35		
8:40		
8:45		
8:50		
8:55		
9:00		
9:05		
9:10		
9:15		
9:20		

	Behavior	Setting
10:05		
10:10		
10:15		
10:20		
10:25		
10:30		
10:35		
10:40		
10:45		
10:50		
10:55		
11:00		
11:05		
11:10		
11:15		
11:20		
11:25		
11:30		
11:35		
11:40		
11:45		
11:50		
11:55		
12:00		
12:05		
12:10		
12:15		
12:20		
12:25		

	Behavior	Setting
1:10		
1:15		
1:20		
1:25		
1:30		
1:35		
1:40		
1:45		
1:50		
1:55		
2:00		
2:05		
2:10		
2:15		
2:20		
2:25		
2:30		
2:35		
2:40		
2:45		
2:50		
2:55		
3:00		

Noncompliance: ___/___=___%

Failure to respond within 5 seconds of teacher request and or saying "NO"

Elopement: ___/___=____%

9:25		
9:30		
9:35		
9:40		
9:45		
9:50		
9:55		
10:00		

12:30		
12:35		
12:40		
12:45		
12:50		
12:55		
1:00		
1:05		

Physically moving out of seat and/or designated area without permission.

Aggression: ____/____=____%

Actual or attempted physical contact in the form of kicking, hitting, biting, scratching, pinching, or hair pulling

APPENDIX E

PARENT CONSENT FORM

—Parental Consent for Using Research Data—

Dear Parent/Guardian,

I am presently working on my Masters of School Psychology at National University. As part of my degree requirements, I am planning an educational research project to take place at Glen Yermo Elementary that will help me to learn more about the use of self-management along with positive reinforcement. The fundamental goal of this research study is to determine if using self-management along with positive reinforcement is effective in reducing the number of problem behaviors of a student with autism.

As part of this research project, your child will participate in the use of the "Self and Match" system (Salter & Croce, 2008) for the rest of the school year. As this study is for educational research purposes only, the results of the "Self & Match" system **will not** affect your child's grade.

I am requesting permission from you to use your child's data in my research study. Please understand that your permission is entirely voluntary and your child's name will not be used.

If you have any questions or concerns, please feel free to contact me at (949) 600-5937.

Please sign on the next page and return to Debra Shapin. Thank you for your interest in my educational research study.

Debra Shapin
Researcher/Investigator

As the parent or guardian of _____,

(write your child's name)

- ☐ **I grant my permission for Debra Shapin to use my child's data in her educational research project regarding "Self and Match." I voluntarily consent to Debra Shapin using any of the data gathered about my student in her study. I fully understand that the data will not affect my child's grade, will be kept completely confidential, and will be used only for the purposes of her research study.**

- ☐ **I do NOT grant my permission for Debra Shapin to use my child's data in her educational research project regarding "Self and Match."**

Signature of Parent/Guardian:_____Date:_____

APPENDIX F

SCHOOL SITE CONSENT FORM

—School Site Consent for Using Research Data—

Dear Principal,

I am presently working on my Masters of School Psychology at National University. As part of my degree requirements, I am planning an educational research project to take place at Glen Yermo Elementary that will help me to learn more about the use of self-management along with positive reinforcement. The fundamental goal of this research study is to determine if using self-management along with positive reinforcement is effective in reducing the number of problem behaviors of a school with autism.

As part of this research project, a student enrolled at your school will participate in the use of the "Self and Match" system (Salter & Croce, 2008) for the rest of the school year. This study is for educational research purposes only.

I am requesting permission from you to use data collected at your school in my research study. Please understand that your permission is entirely voluntary and the student's name will not be used.

If you have any questions or concerns, please feel free to contact me at (949) 600-5937.

Please sign on the next page and return to Debra Shapin. Thank you for your interest in my educational research study.

Debra Shapin

Researcher/Investigator

As the principal of _____,

(write your school's name)

- ☐ **I grant my permission for Debra Shapin to use data collected at my school in her educational research project regarding "Self and Match." I voluntarily consent to Debra Shapin using any of the data gathered at my school in her study. I fully understand that the data will be kept completely confidential, and will be used only for the purposes of her research study.**

- ☐ **I do NOT grant my permission for Debra Shapin to use data collected at my school in her educational research project regarding "Self and Match."**

Signature of Principal:_____Date:_____

APPENDIX G

REVIEW BOARD APPROVAL

Office of the Institutional Review Board
11255 North Torrey Pines Road, La Jolla, CA 92037-1011 (858) 642-8136 · fax (858) 642-8759

March 4, 2009
Applicant: Debra Shapin
Application ID: 1684
Date of Submission: 01/27/2009
Title of Project: Self & Match

This letter is to officially notify you of the approval of your research project by the National University Institutional Review Board (NU-IRB). It is the Board's opinion that you have provided adequate safeguards for the rights and welfare of the participants in this study. As stated in the HHS Policy for Protection of Human Research Subjects 45 CFR 46.101(b), this project has been determined to be **Exemption Category # 1. – Research conducted in established or commonly accepted educational settings, involving normal educational practices.** A determination that research is exempt does not imply that you have no ethical responsibilities to subjects in such research. This decision is based on the following assumptions:

1. The application you submitted to the NU-IRB provides a complete and accurate account of how human subjects areinvolved in your project.
2. You will carry on your research according to the procedures described in this application.
3. If any substantive changes are made, you will resubmit the project for IRB review.
4. You will immediately report to the NU-IRB any problems that you encounter while using human subjects.

You are authorized to implement this study as of **March 4, 2009.** This approval expires in 364 days**.** All approvals are valid for
no more than one year.

IMPORTANT: The approval of the study must be renewed by the IRB prior to the expiration date or all activities with human subjects must cease until the project has been renewed. Any change to a project must receive IRB approval before the change can be implemented. This includes modifications to the protocol, inclusion or exclusion criteria, recruitment methods, research personnel, or *any* new or revised study materials. Approval is required for all modifications whether initiated by the investigator or external sponsor. Prior to expiration noted above, you should submit a *request for renewal of IRB approval or your completed research abstract* to rlauridsen@nu.edu. Please include your Application ID number and research title in the subject line of the email. Please refer to the National University IRB Policy 8:01:00 for more detailed information, or contact the Office of the Institutional Review Board at (858) 642-8136.

Be sure to include a copy of this letter in your Final Research project that you will turn into your thesis committee.

Thank you for your cooperation in this process. The NU-IRB looks forward to your successfully completing your research.

Sincerely,
Roxanne J. Lauridsen, MS Mary E. Hazzard, Ph.D. FAAN
Director of Academic Program Management Chair, IRB
rlauridsen@nu.edu mhazzard@nu.edu

CC: Faculty Sponsor, Department Chair