5-2016

The indelible power of the intraverbal: Expanding the intraverbal repertoire and utilizing conditioned praise words to decrease problem behaviors of typically developing students in schools

Jose A. Zamudio
The University of Texas Rio Grande Valley

THE INDELIBLE POWER OF THE INTRAVERBAL: EXPANDING THE INTRAVERBAL REPERTOIRE AND UTILIZING CONDITIONED PRAISE WORDS TO DECREASE PROBLEM BEHAVIORS OF TYPICALLY DEVELOPING STUDENTS IN SCHOOLS

A Thesis

by

JOSE A. ZAMUDIO

Submitted to the Graduate College of
The University of Texas Rio Grande Valley
In partial fulfillment of the requirements for the degree of

MASTER OF ARTS

May 2016

Major Subject: Experimental Psychology

THE INDELIBLE POWER OF THE INTRAVERBAL: EXPANDING THE INTRAVERBAL REPERTOIRE AND UTILIZING CONDITIONED PRAISE WORDS TO DECREASE PROBLEM BEHAVIORS OF TYPICALLY DEVELOPING STUDENTS IN SCHOOLS

A Thesis
by
JOSE A. ZAMUDIO

COMMITTEE MEMBERS

Frederick A. Ernst, Ph.D.
Chair of Committee

Amy A. Weimer, Ph.D.
Committee Member

Valerie Neeley, M.A., BCBA
Committee Member

May 2016

ABSTRACT

Zamudio, Jose A., The Indelible Power of the Intraverbal: Expanding the Intraverbal Repertoire and Utilizing Conditioned Praise Words to Decrease Problem Behaviors of Typically Developing Students in Schools. Master of Arts (MA), May, 2016, 35 pp., 1 table, 4 figures, references, 67 titles.

This study tested a disciplinary strategy that aimed at teaching students positive behaviors to decrease (or eliminate) problem behavior at school. In this study, data of five disruptive students from a middle school in South Texas were analyzed to evaluate the outcomes of the disciplinary strategy implemented by a disciplinary program facilitator at the campus. Students were conditioned to be more receptive to particular praise words related to positive thinking, and ten teachers at the campus were trained to deliver the conditioned praise words when the students expressed positive behaviors that corresponded with the conditioned praise words. Positive thinking celerated for all students with differential reinforcement. Moreover, the students engaged in problem behaviors less, and positive behaviors increased after commencing treatment with the conditioned praise words.

DEDICATION

This study is dedicated primarily to all children of the world, in hopes that they may grow with great love and respect for themselves and the people that surround them. This study is also dedicated to all parents of the world, in hopes that they continuously discover effective ways to teach and model great love and respect to their children with care and diligence. Additionally, this study is dedicated to all teachers in hopes that a newer, more adaptive disciplinary strategy may help improve classroom management and promote a more positive teacher-student relationship.

ACKNOWLEDGMENTS

I would like to acknowledge all of the wonderful people who contributed to my study with their time, effort, and patience. Without these giants, I would not have accomplished my aspiration to stand on their shoulders and see the world from their astonishing height. I am forever grateful for their guidance and mentorship. Yasmin Garcia and Hector Palacios, I would never have had the opportunity to complete my thesis and gain experience working with children if it had not been for your tremendous generosity and guidance. Ruben Nieto and Valerie Neeley, I could not have made it this far without your impeccable supervision, mentorship, and relentless shaping of my work ethic and professionalism. I would also like to thank all of my professors who helped me acquire and master all of the necessary schematic frameworks to entertain my field of study: Dr. Frederick Ernst, Dr. Amy Weimer, Dr. Michiyo Hirai, Dr. Zina Eluri, Dr. Mark Winkel, Dr. Philip Gasquoine, Dr. Bernardo De la Garza, Dr. Maureen Flynn, and Dr. Jason Popan. I would also like to acknowledge my family for their unconditional love and support throughout my years of study and hard work. Lastly, I would also like to thank Yoli Cantu for teaching me a crafty skill set with stained glass that helped me through my more difficult times, and for giving me the opportunity to impart that skill to others in a collaborative, constructive, and meaningful way. My only wish now is to grow in my skills and make my community proud of the nurturing services I have to offer.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Statement of the Problem

Studies on crime rates and violence rates in schools demonstrate decreasing trends in the past decade, but the prevalence rate of this issue is still alarmingly high with 55 students being victimized out of every 1,000 students per year (National Center for Education Statistics, 2015). The widely adopted disciplinary approach is a zero-tolerance, punitive approach that involves student suspension for misconduct. Research on the zero-tolerance approach highlights a significant limitation: violent and/or disruptive students do not learn desirable replacement behaviors from this punitive disciplinary approach alone. Therefore, if students are expected to learn to behave in the school setting, a different disciplinary approach that aims to teach alternative replacement behaviors is necessary. As outlined in the following chapter, there is an extensive and growing body of research that demonstrates the effectiveness of shaping behaviors through praise. Praise is not necessarily perceived as appealing or rewarding by all people, which complicates the use of praise for shaping behaviors. Further research in this area could help diminish violence in schools significantly and improve school climates.

Statement of the Purpose

The purpose of this study is to analyze data of an applied behavior analytic disciplinary approach facilitated by a psycho-educational facilitator at a middle school in South Texas. This approach aimed to teach students desirable behaviors to replace disruptive and aggressive behaviors in the school setting by delivering conditioned praise for good behavior. Increasing students' positive thinking was also a central focus of the study. Positive behavioral outcomes are expected after a thorough analysis of the data acquired from the counseling agency that implemented the disciplinary procedure.

CHAPTER II

REVIEW OF LITERATURE

Increased media coverage of dramatic school violence has recently drawn national attention, arousing momentous focus on disciplinary strategies to maintain order and ensure safety within school settings (Skiba & Peterson, 2000). Strikingly, student reports of victimization have decreased from about 10% in 1995 to less than 5% in 2013 (National Center for Education Statistics, 2015). Although in a state of decline, the current trend represents a total crime victimization (i.e., theft and violence) rate of 55 victimizations per 1,000 students. During the 2009-2010 school year, the National Center for Education Statistics reported that 1 out of every 10,000 students possessed a firearm/explosive device, and 8 out of every 10,000 students possessed a knife or sharp object on school grounds (2013). Additionally, being bullied at school was reported by 22% of students ages 12-18, with greater prevalence in the middle school population (1 out of every 4 students) compared to the high school population (1 out of every 5 students) (National Center for Education Statistics, 2015). Regardless of declining trends, problems of school disruption and violence remain a pervasive issue in our society and continue to pose a threat to our younger generations. The question then becomes: What can be done to prevent or further diminish the occurrences of violence in our schools?

In their examination of school violence, Peterson, Beekley, Speaker and Pietrzak (1996) reported that 52% of teachers and administrators from rural schools believed that violence was increasing throughout the middle and high school levels. Interestingly, the behaviors they

perceived to be increasing were not necessarily life-threatening behaviors, but "behaviors of incivility" (e.g., interpersonal aggression, rumors, verbal threats of harm or intimidation, pushing and shoving, etc.). In 1998, Heaviside, Rowand, Williams, and Farris revealed the relationship between students' behaviors of incivility and serious school violence, showing that schools with a greater frequency of uncivil classroom disruptions report more crime than schools with less frequent uncivil classroom disruptions. Therefore, intervention efforts to decrease the "behaviors of incivility" or minor classroom disruptions may contribute to the prevention of lethal school violence associated with high rates of incivility in the classroom.

Various research studies in psychology have yielded effective strategies for classroom management, such as teaching behavioral expectations (Fairbanks, Sugai, Guardino, & Lathrop, 2007), maintaining a brisk pace of instruction (Carnine, 1976), greeting students at the door (Allday & Pakurar, 2007), shaping behavior through praise (Kern & Clemens, 2007), and use of positive consequences for managing student behavior (Gottfredson, Gottfredson, & Hybl, 1993; Nelson & Rutherford, 1987). Unfortunately, punishing consequences appear to outpace the use of positive reinforcement in school environments (Gable, Hendrickson, Young, Shores, & Stowitschek, 1983; Shores, Gunter, & Jack, 1993). More and more, the typical consequence for disruption and aggression in the classroom includes punishment and exclusion of the student engaging in the challenging behavior (Skiba & Peterson, 1999). Further discouraging is the gap between research and implementation in the area of school discipline and behavior (Gersten, Vaughn, Deshler, & Schiller, 1997). According to various teacher reports, the underutilization of effective behavioral strategies to decrease problem behavior in the classroom is likely due to inadequate teacher training and teacher unpreparedness in classroom management (Barrett & Davis, 1995; Pilarski, 1994). For example, studies have demonstrated that inexperienced

teachers increasingly adopt authoritarian (i.e., zero-tolerance, punitive, punishing, or excluding) approaches and typically engage in power struggles with students who exhibit challenging behaviors in the classroom (Emmer, 1994; Kearney, Plax, Sorenson, & Smith, 1988). Zero-tolerance policies rely primarily on school exclusion (i.e., suspension and expulsion) as punishment methods for both minor and severe problem behaviors to assert that those behaviors are not tolerated (Skiba & Peterson, 1999). A thorough study by the National Center for Education Statistics (1998), however, reported that schools that utilize zero-tolerance policies are less safe than schools that implement fewer zero-tolerance practices. Moreover, studies on negative or punishing consequences have consistently demonstrated that punishment alone cannot teach new behavior (Skinner, 1953) and typically exacerbates undesirable side-effects, including escape, counter-aggression, habituation, and reinforcement of punishing agents (Axelrod & Apsche, 1983; MacMillan, Forness, & Trumball, 1973; Wood & Braaten, 1983).

Newer perspectives on school discipline cover a wide range of school-related issues. For instance, social instruction approaches (Bodine, Crawford, & Schrumpf, 1994), and peer mediation and conflict resolution approaches (Johnson & Johnson, 1996) facilitate the establishment of a nonviolent school climate by teaching students alternative actions to challenging behaviors. Another effective strategy involves increasing the use of positive reinforcement by teachers (Meyer, Mitchell, Clementi, & Clement-Robertson, 1993). Data collection systems are critical in evaluating progress in handling minor and severe behavioral issues in schools (Skiba, Peterson, & Williams, 1997; Tobin, Sugai, & Colvin, 1996). Moreover, school-wide discipline, individualized behavioral support plans, and functional assessments have also shown to be effective in response to challenging behaviors by building consistency and communication between teachers and administrators (Broussard & Northup, 1995; Colvin,

Kame'enui, & Sugai, 1993; Gottfredson, Gottfredson, & Hybl, 1993; Lewis & Sugai, 1996). In addition, partnerships between parents and school communities fortify effective disciplinary programs by increasing consistency of behavioral interventions across home and school settings, thereby promoting the generalization and maintenance of students' desirable behaviors (Barclay & Boone, 1997; Chandler, Lubeck, & Fowler, 1992; Morrison, Olivos, Dominguez, Gomez, & Lena, 1993).

A noteworthy applied behavior analytic method used to reduce problem behaviors in the classroom is the Good Behavior Game (Barrish, Saunders, & Wolf, 1969). This game involved setting behavioral expectations for all students (e.g., remaining seated at all times, raising hands before speaking, taking turns during discussion, etc.) in order to decrease disruptive behaviors in the classroom. Compliance to game rules resulted in privileges for the winning team(s), which involved wearing victory badges, being first in line for lunch, participating in a 30-minute free time at the end of the day during which special projects were worked on, and a weekly opportunity to attend recess 4 minutes early. By pairing these known reinforcers with desirable behaviors, the game significantly and reliably modified the students' challenging behaviors. Above and beyond modifying challenging behaviors, a longitudinal study of the Good Behavior Game that followed up on students ages 19-21 found significantly lower rates of suicidal ideation, delinquency and incarceration for violent crimes, substance abuse, and antisocial personality disorder (Kellam et al., 2011). Clearly, applied behavior analytic interventions have the potential to make long-lasting effects on students' behaviors that generalize across environments.

This study analyzes data from a disciplinary program that combines all of the necessary features for disciplinary intervention using an applied behavior analytic framework to decrease

problematic behaviors in the classroom. The analysis will focus on intraverbal behavior, defined as a verbal response that does not have point-to-point correspondence with the verbal stimuli that evoke it (Skinner, 1957). For instance, the intraverbal responses *nice hair*, *creative, helpful*, *smart*, and *funny* have a beginning, middle, and end that do not match the beginning, middle, and end of the verbal stimulus *you have one minute to identify all of your positive qualities* (Cooper, Heron, & Heward, 2007).

This investigation will focus primarily on intraverbal responses relating particularly to the students' positive thinking about personal qualities, as outlined by Calkin's (2005) procedure. Positive thinking is a latent dimension that is correlated with three cognitive variables: (1) optimism, (2) self-esteem, and (3) life satisfaction (Caprara, Delle Fratte, & Steca, 2002). The positive thinking analyzed in this study only focuses on the self-esteem variable by measuring intraverbal frequencies of positive personal qualities. After baseline measures, these intraverbal responses were differentially reinforced with primary reinforcers (e.g., pretzels, m&m's, skittles, etc.) in an effort to expand the students' intraverbal repertoires and increase their rates of responding (Calkin, 2005; Fahmie, Iwata, & Jann, 2015; Williams, 1994). The intraverbals in this study serve dual functions: (1) to measure rates of positive thinking about personal qualities, and (2) to reinforce desirable behaviors as the conditioned praise words are delivered by the teachers during school hours. Compared to stimulus-stimulus pairing, response-stimulus pairing of praise words with primary reinforcers has shown to be the more effective procedure for conditioning praise words as reinforcers (Dozier, Iwata, Thomason-Sassi, Worsdell, & Wilson, 2012). Therefore, the primary reinforcers were delivered immediately after the students produce the intraverbals in writing and read them out loud.

Praise is defined as an expression of approval or admiration (Brophy, 1981) and is widely cited for its highly reinforcing effects. Praise improves the acquisition and maintenance of desirable behavior across many areas, such as academic work (McLaughlin, 1982), employee performance (Brown, Willis, & Reid, 1981), social interaction (Barton, 1981), verbal behavior (Sigafoos, Doss, & Reichle, 1989), and leisure activities (DiCarlo & Reid, 2004). Some studies suggest, however, that some individuals find social interaction to be aversive (Hagopian, Wilson, & Wilder, 2001; Taylor & Carr, 1992), while other individuals can also be generally unresponsive to the reinforcing effects of praise and social stimuli (Ebner, 1965; Lovaas et al., 1966). For this reason, it is essential that conditioning of praise words take place. In this study, conditioned praise words (e.g., *good listener, smart thinking, excellent participation, honest feedback, very helpful,* etc.) were delivered by the teachers contingent upon the students' desirable behavior as a consequence intervention effort to reinforce positive behaviors in the classroom environment.

It was hypothesized that intraverbal rates of responding would increase with differential reinforcement for all students. Furthermore, it was expected that the acquired intraverbal rates of responding would be maintained throughout the program. Ultimately, it was hypothesized that the students would decrease in problem behavior during treatment conditions when teachers delivered conditioned praise words for desirable behavior, and increase in problem behavior during conditions when teachers were asked to withhold praise delivery.

CHAPTER III

METHODOLOGY AND RESULTS

Participants and Setting

The counselors from a middle school in South Texas assigned all of the students used in this study. The students were selected based on recent engagement in misconduct. Types of misconduct ranged from self-injurious behavior, operationally defined as cutting on the wrists and thighs or fresh wounds observed on the wrists and thighs, to physical aggression, operationally defined as punching, pushing, kicking, and hitting another person or throwing objects, and verbal aggression, operationally defined as verbal threats of harm, punitive/negative comments towards others, yelling at others, or use of profanity. This procedure consists of one group of 5 students and 10 confederate teachers. All students received the same treatment, which involved differentially reinforcing intraverbal responses regarding positive thinking, and reversal treatment conditions where conditioned praise was delivered then withheld. For the purpose of anonymity, students were assigned numbers 1-5 and teachers were assigned numbers 1-10.

Procedure and Design

The Natural Environment Teaching (NET) sessions were conducted biweekly for both groups. The program lasted 8 weeks, totaling out to16 NET sessions (50 minutes each). Sundberg and Partington (1998) state that NET is based on several evidence-based frameworks, including incidental teaching (Hart & Risley, 1975), milieu language training (Hart & Rogers-Warren, 1978), and the Natural Language Paradigm (Keogel, O'Dell, & Keogel, 1987). Essentially, NET requires that the learning environment be arranged in a manner that builds the rate of verbal behavior acquisition. Direction of the activities during NET is balanced between the adult facilitator and the student to improve overall verbal behavior acquisition.

NET sessions were conducted around a psycho-educational program titled *Controlling Ourselves*, developed by Anderson (2001). The facilitator of the program coached four core areas, including positive communication skills, emotional intelligence skills, stress management skills, and anger management skills. This program covered key character-building skills that served as prompts for target intraverbals pertaining to positive thinking and positive personal qualities (e.g., *assertive communication, active listening, honest feedback, empathy,* etc.).

At the beginning of the program, each student was interviewed individually and asked a variety of questions, regarding history of misconduct, likes and dislikes, preferred edibles, diagnoses, medications, and allergies (all medical information was confirmed with the students' parents and the school nurse). Student responses for preferred edibles ranged from Takis ("Fuego"-flavored chips) to M&M's with peanuts, and Skittles.

Prior to the treatment conditions, parents were asked to refrain from providing the preferred edibles at home or any other environment. This deprivation of preferred edibles at home and other environments is otherwise known as an establishing operation (EO). EO's are

manipulations of the environment used to increase the motivating operation (MO) for the desired consequence of target responses (Michael, 1982, 1993). In this case, the EO—depriving the students of their preferred edibles in non-school environments—was used to increase the students' MO for reinforcement with preferred edibles contingent upon rates of intraverbal responding. This treatment followed an AB design element, where A comprised of three sessions of baseline measures, and B comprised of seven to eight sessions of differential reinforcement for increased intraverbal rates of responding. During the B condition, students were prompted to write key intraverbals when they were not spontaneously written down within the 1-minute timeframe to ensure the conditioning opportunity of the praise word.

The treatment for conditioned praise delivery by the teachers followed a reversal ABABA design element, where A comprised of baseline measures and B comprised of 2 alternating weeks of conditioned praise delivery by the teachers. All teachers were trained on conditioned praise delivery and provided with lists of the conditioned praise words (Appendix A). Routine spot-checks were conducted to ensure the consistency of conditioned praise delivery by the teachers. Teachers were also trained to contrive situations that fit the context of each student's learning environment. For example, all teachers were instructed to intentionally drop an item in front of students to elicit helpful behavior. If the helpful behavior did not occur spontaneously, then teachers were instructed to verbally prompt the students to hand them the dropped items to establish the opportunity for praise delivery (e.g., *Thank you! You are very helpful!*).

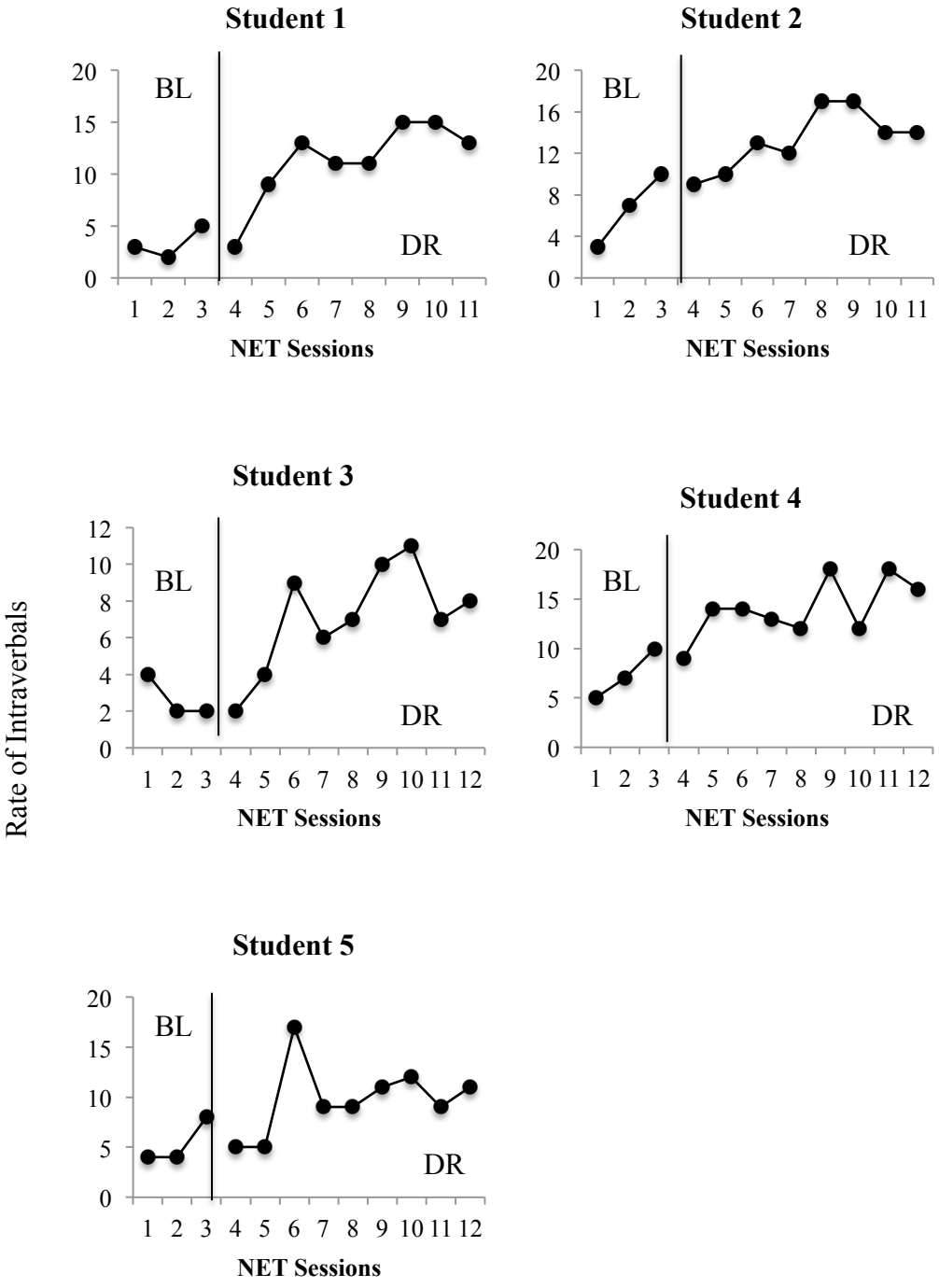
Response Measurement

During the last few minutes of the NET sessions, after verbal prompting of positive qualities was complete, students were asked to write down all of their positive qualities in 1 minute. This was done to derive the rate of intraverbal responding as a measure of positive thinking, following Calkin's (2005) procedure. A clock on the classroom wall was used to time the students' responses. All responses were collected at the end of the minute.

Problem behaviors were measured using a frequency scatterplot (Appendix B). Weekly meetings were held after school every Monday for all 10 teachers where completed scatterplots were turned in to the facilitator and new scatterplots were administered to the teachers for the following week. During treatment conditions, the scatterplots were also used to measure the frequency of conditioned praise word delivery, which dually served as a frequency measure of positive replacement behaviors (e.g., if the student was helpful on a particular day of the week, the teacher wrote *helpful* as the conditioned praise word that was delivered to the student on that day for the corresponding class period).

Results

Figure 1. Celeration of Intraverbals Related to Positive Thinking



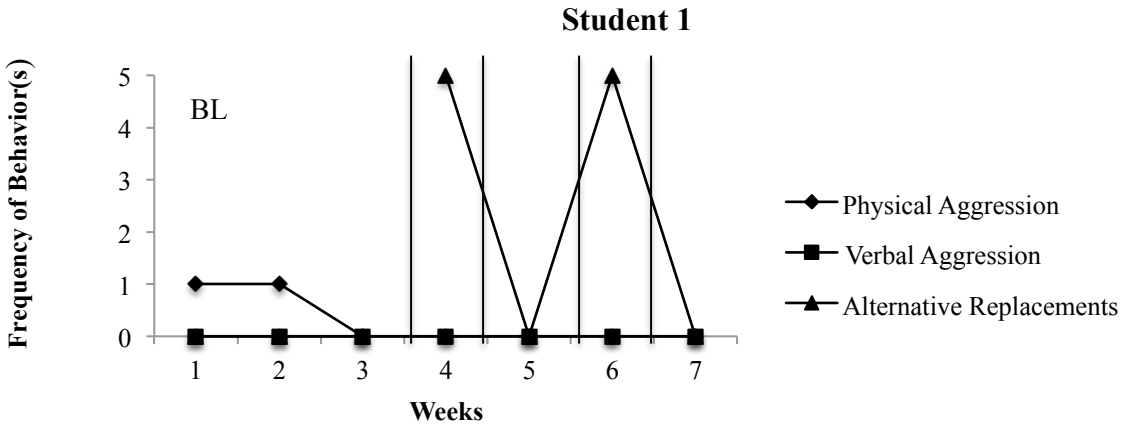
The first set of graphs shown above demonstrates the trends of intraverbal celeration rates related to positive thinking. The baseline condition contains the first three measures where intraverbal rates related to positive thinking were not differentially reinforced with preferred edibles. Notably, all students demonstrated celerating trends at baseline, except for Student 3 who displayed a decelerating trend at baseline. During the conditioning phase where differential reinforcement (DR) with preferred edibles was implemented, all students exhibited varied, celerating trends. Every student ended the treatment phase with maintained rates of positive thinking above baseline measures.

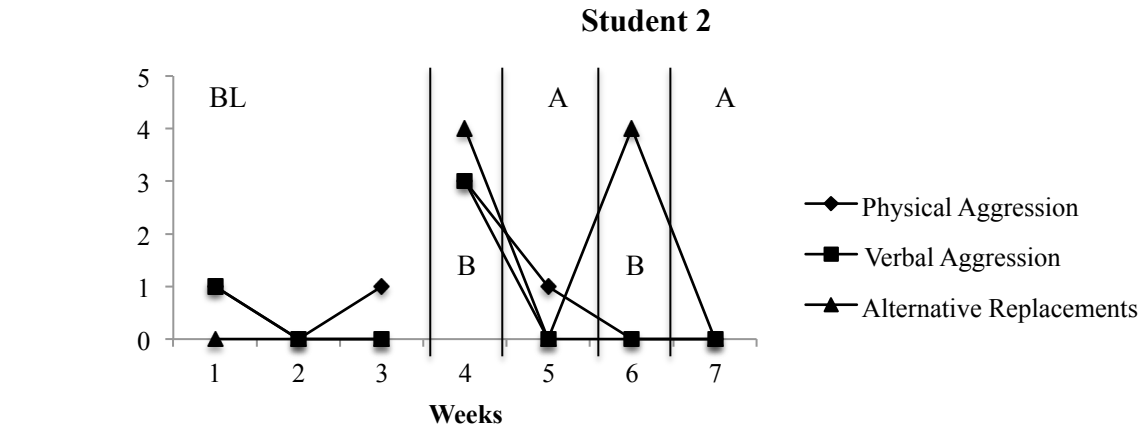
The next set of graphs (below) illustrates the frequencies of problem behaviors as reported by the teachers. The graphs also elucidate the frequencies of alternative replacement (i.e., positive or desirable) behaviors as reported by the teachers. All students engaged in targeted problem behaviors at baseline. Student 1, Student 2, Student 3, and Student 5 all had similar targeted problem behaviors (i.e., physical aggression and verbal aggression). Student 1 demonstrated a decreasing trend of verbal aggression during baseline; Student 2 demonstrated a decreasing trend of verbal aggression and an increasing trend of physical aggression at baseline; Student 3 demonstrated a stable trend of physical aggression during baseline; and Student 5 demonstrated an unstable, varying trend of verbal aggression at baseline. The targeted problem behaviors for Student 4 included self-injurious behavior (SIB) and verbal aggression. Student 4 was reported to have had 9 incidents of SIB in the first week of baseline. Engagement in SIB rapidly decreased to zero reported incidents for the remainder of the study. Student 4 also demonstrated a decreasing trend of verbal aggression during baseline.

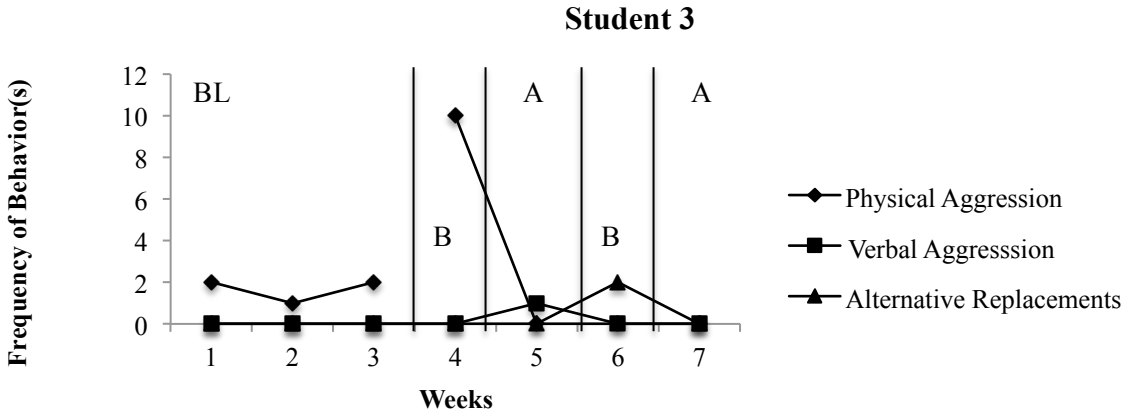
Traditionally, trend lines across data points are erased between alternating treatment conditions in graphical representations of the data; however, the trend lines were maintained, in

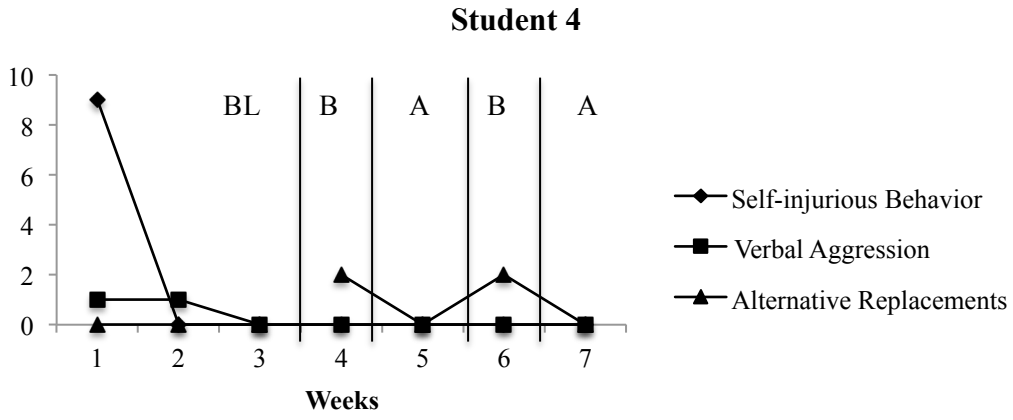
this case, due to overlap of single weekly data points. The trend lines here serve as a visual aid that allow for the inspection and analysis of overlapping data points. Week 4 and Week 6 included the B treatment condition where teachers were instructed to deliver conditioned praise words to reinforce good behavior in the classroom. Week 5 and Week 7 included the A condition where teachers were instructed to withhold praise delivery. All students received varying amounts of praise during these conditions. Student 3 was the only student who did not receive conditioned praise words during Week 4, based on teacher reports. Visual inspection of the data reveals decreasing trends of problem behaviors across all subjects. Only one reported incident of verbal aggression occurred with Student 5 on Week 7. Visual inspection of the data additionally reveals stable frequencies of alternative replacement behaviors for Student 1 (Week 4 = 5, Week 6 = 5), Student 2 (Week 4 = 4, Week 6 = 4), and Student 4 (Week 4 = 2, Week 6 = 2), and increasing frequencies for Student 3 (Week 4 = 0, Week 6 = 2) and Student 5 (Week 4 = 3, Week 6 = 6).

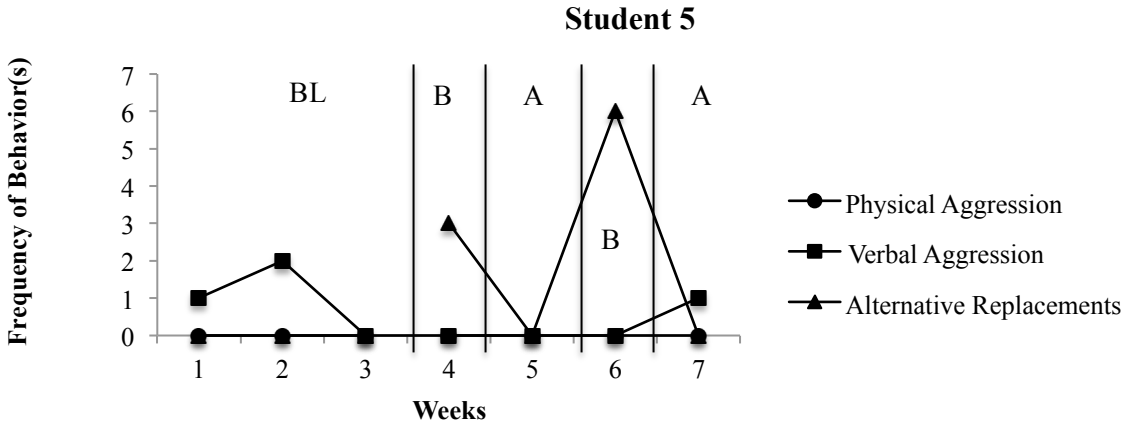
Figure 2. Frequencies of Problem and Alternative Replacement Behaviors




Student 2
BL
A
A
B
B
5
4
3
2
1
0
1
2
3
4
5
6
7
Weeks
Physical Aggression
Verbal Aggression
Alternative Replacements

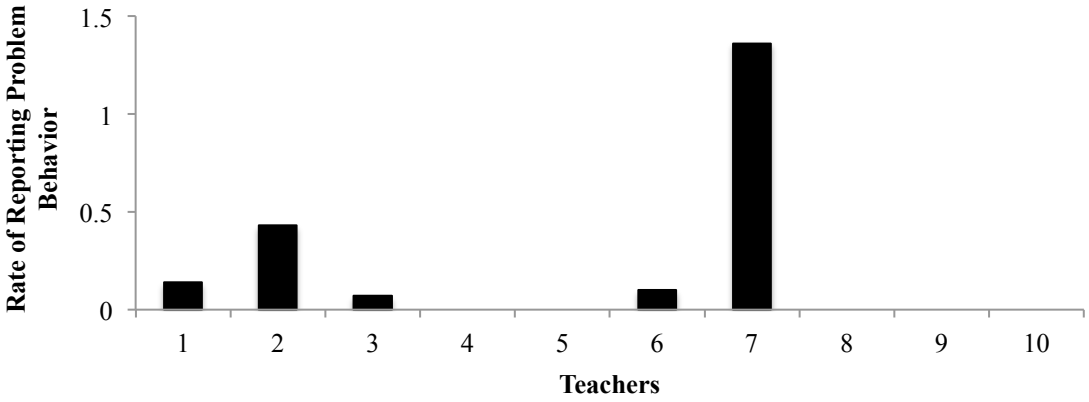

Student 3
Frequency of Behavior(s)
BL
A
A
B
B
12
10
8
6
4
2
0
1
2
3
4
5
6
7
Weeks
Physical Aggression
Verbal Aggresssion
Alternative Replacements


Student 4
BL
B
A
B
A
10
8
6
4
2
0
1
2
3
4
5
6
7
Weeks
Self-injurious Behavior
Verbal Aggression
Alternative Replacements



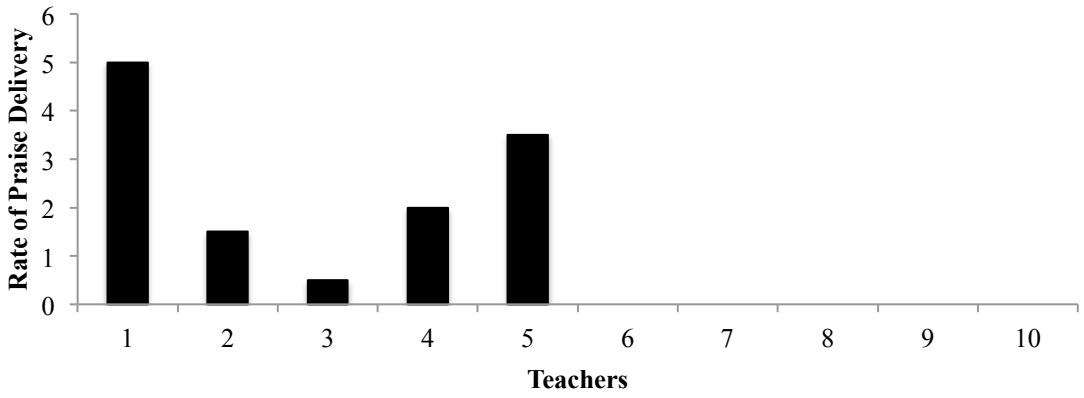
The following bar graph demonstrates the teachers' rates of reporting the students' problem behaviors per week. The confederate teachers were numbered 1-10. Out of the 10 teachers, 50% of them reported problem behaviors across the 7 weeks of behavior monitoring. Highest to lowest ordered ranking is as follows: Teacher 7 reported problem behaviors 1.36 times per week, Teacher 2 reported problem behaviors 0.43 times per week, Teacher 1 reported problem behaviors 0.14 times per week, Teacher 6 reported problem behaviors 0.1 times per week, and Teacher 3 reported problem behaviors 0.07 times per week. Teachers 8, 9, and 10 did not report any problem behaviors.

Figure 3. Teachers' Weekly Rate of Reporting Problem Behaviors



The next bar graph illustrates the teachers' rates of praise delivery per week that they were instructed to deliver praise as part of the positive behavioral support condition. Out of the 10 teachers, only 50% of them delivered any praise during the two weeks of treatment conditions. Highest to lowest ordered ranking is as follows: Teacher 1 delivered praise 5 times per week, Teacher 5 delivered praise 3.5 times per week, Teacher 4 delivered praise 2 times per week, Teacher 2 delivered praise 1.5 times per week, and Teacher 3 delivered praise 0.5 times per week. Teachers 6, 7, 8, 9, and 10 did not deliver any praise for good behavior.

Figure 4. Teachers' Weekly Rate of Praise Delivery



The following table summarizes the teachers' report rates for problem behaviors and praise delivery rates. The table additionally reveals the students that were assigned to each corresponding teacher.

Table 1. Teacher Data Summary and Student Assignment

	Teacher 1	**Teacher 2**	**Teacher 3**	**Teacher 4**	**Teacher 5**	**Teacher 6**	**Teacher 7**	**Teacher 8**	**Teacher 9**	**Teacher 10**
Student Subjects Assigned to Teacher	1	5	1, 3	4	2, 5	2, 3, 5	2, 3	3, 4	1, 4	1
Rate of Reporting Problem Behavior	0.14	0.43	0.07	0	0	0.1	1.36	0	0	0
Rate of Praise Delivery	5	1.5	0.5	2	3.5	0	0	0	0	0

CHAPTER IV

DISCUSSION AND CONCLUSION

Discussion

Based on visual inspection of the data in Figure 1, increasing trends above baseline measures support the hypothesis that celeration occurs with differential reinforcement of intraverbals related to positive thinking. In other words, reinforcing the number of intraverbal responses with an equivalent number of preferred edibles resulted in increased rates of responding for all students. Students 1, 2, 4, and 5 all demonstrated increasing baseline trends, while Student 3 demonstrated a decreasing baseline trend. Differential reinforcement with preferred edibles, combined with an establishing operation for deprivation of preferred edibles at home settings, resulted in increased rates of responding above baseline measures for all students, regardless of baseline trends. Moreover, increased rates of responding were maintained above baseline measures, thereby supporting the expectation of maintained increased rates of responding. A continuous schedule of reinforcement was used to strengthen the students' intraverbal behaviors. Perhaps, more refined increases and maintenance of intraverbal response rates may have been established with a subsequent thinning of the differential reinforcement schedule. Future research in this area may reveal improved rates of responding.

Figure 2 elucidates the students' behavioral frequencies as reported by the teachers. The reversal treatment conditions represent an intermittent schedule of reinforcement, which is a reinforcement schedule that is typically used to maintain established behaviors (Cooper, Heron,

& Heward, 2007). Visual analysis of the data supports the hypothesis that problem behaviors decreased and maintained during praise delivery conditions.

Student 1 displayed a stable trend at baseline with an average of about one physical aggression per week. During the reversal conditions, no incidents of problem behaviors were reported and alternative replacement (i.e., desirable) behaviors increased to an average of five positive behaviors per week of praise delivery. These favorable trends may be due to the high rate of praise delivery by Teacher 1 (5 praise words per week), as Student 1 was the only student assigned to this teacher (refer to Table 1).

Student 2 demonstrated a decreasing trend of verbal aggression and an increasing trend of physical aggression at baseline with one incident of each behavior. Problem behaviors and alternative replacement behaviors competed for attention during the praise delivery condition on Week 4 with four incidents of alternative replacements, three incidents of verbal aggression, and three incidents of physical aggression. On Week 5, physical aggression decreased to one reported incident and all other behaviors decreased to zero. When the praise delivery condition was reintroduced on Week 6, Student 2 reportedly engaged in four alternative replacement behaviors and zero problem behaviors. The desired trends for Student 2 may be due to the praise delivery rate by Teacher 5. Out of the three teachers that Student 2 was assigned to, Teacher 5 was the only teacher to deliver praise to Student 2 for good behavior at a rate of 3.5 praise words per week.

Student 3 displayed a stable trend of physical aggression at baseline, with an average of about two incidents per week. During the praise delivery condition of Week 4, Student 3 engaged in ten reported incidents of physical aggression. Observational notes from Teacher 7 state examples of physical aggression such as “pulling hair” and “pushing other students in

class." Alternative replacement behaviors were not reported and/or praised for Student 3 on Week 4. One incident of verbal aggression was reported on Week 5, and two alternative replacement behaviors were reported on Week 6 when praise delivery was reintroduced. Student 3 reportedly engaged in the least amount of alternative replacement behaviors. This may be due to a lack of positive behavioral support as denoted by Table 1. Out of the four teachers that Student 3 was assigned to, only Teacher 3 engaged in praise delivery at a rate of 0.5 praise words per week.

Student 4 was a slightly different case that required immediate intervention. Teacher and facilitator reports state that the student was observed to have had nine lacerations on the forearms during the first week of baseline. Upon further investigation, it was discovered that the student had acquired a blade from a peer. Teacher and facilitator reports state the student reported feeling depressed due to a recent parental divorce. Ethical guidelines were followed to prevent any further incidents of SIB regardless of the baseline requirement for three data points to determine behavioral trends. The parents and teachers of Student 4 were immediately informed and instructed to be hyper-vigilant for sharp objects and lacerations on the skin, and to response block any SIB. After this immediate intervention, simultaneously coupled with increased rates of positive thinking, SIB immediately decreased and remained at zero reported incidents for the remainder of the study. Student 4 also demonstrated a decreasing trend of verbal aggression during baseline with an average of about one per week. All problem behaviors ceased during the reversal conditions, and Student 4 engaged in two alternative replacement behaviors during both weeks of praise delivery. This low level of engagement in alternative replacement behaviors may be due to limited praise delivery by the teachers. Of the three teachers that Student 4 was

assigned to, only Teacher 4 provided this student with praise at a rate of two praise words per week.

The graph for Student 5 demonstrated an unstable trend of verbal aggression at baseline with an average of one verbal aggression per week. During both praise delivery conditions, Student 5 engaged in alternative replacement behaviors three and six times, respectively. All problem behaviors ceased during the reversal conditions, with the exception of one verbal aggression reported on Week 7 during the withheld praise condition. This datum supports the hypothesis that problem behaviors were expected to rise during the withheld praise conditions; however, this phenomenon did not occur for Students 1, 2, 3, and 4. Therefore, that hypothesis is not sufficiently supported by the data. This may be due to a differing function of verbal aggression across students. A future study that analyzes each problem behavior by its function may help predict expected trends with greater accuracy during reversal conditions.

According to Figures 3 and 4, only seven out of ten teachers contributed overall to the data. Teachers 1, 2 and 3 engaged in praise delivery when instructed to do so and simultaneously reported problem behaviors. Teachers 4 and 5 only delivered praise when instructed, but did not report any problem behaviors. Teachers 6 and 7 reported problem behaviors, but did not engage in praise delivery. Teachers 8, 9 and 10 did not report any problem behaviors, nor did they deliver praise during the treatment conditions. As part of the weekly spot-checks used to ensure the consistency of praise delivery, teachers were instructed to contrive situations with the students in a manner that would optimize praise delivery for desirable behavioral outcomes. For example, teachers were prompted to deliberately, yet naturally, drop items in front of the students and ask them to offer their help in picking up the items, to which the teachers would deliver the conditioned praise: *Thank you for being so*

helpful. Another example, particularly for Student 4, involved working on facial expressions of happiness in the student's dance course, and delivering praise for happy expressions, such as: *Wow! Everyone look at how happy [Student 4] looks! That's the happy expression you need to have when you dance.* Teacher 8 was instructed to contrive the dance course to deliver praise for happy facial expressions to Student 4, but Teacher 8 never delivered any praise during the praise delivery conditions. Regardless of prompting the teachers during weekly meetings to contrive situations that would elicit good behavior for praise delivery, only 50% of the teachers complied with instructions at varied rates. Teacher 1 had a praise delivery rate of 5 praise words per week. Arguably, this high rate of praise delivery for Teacher 1 may have occurred because Teacher 1 only had one assigned student. Teachers 2, 4, and 10, however, also had only one student assigned to them with praise delivery rates of 1.5, 2, and 0, respectively. This suggests that teacher noncompliance with the facilitator's instructions is the likely cause of the students' overall low level of engagement in alternative replacement behaviors. Perhaps a mandatory training on behavioral principles that emphasizes environmental manipulations to teach students alternative replacement behaviors would provide teachers with the skill set and understanding required to help students engage in more desirable behaviors at schools (Kern & Clemens, 2007; Sprick, Borgmeier, & Nolet, 2002).

Conclusion

The emergence of positive psychology has called for multi-demonsional initiatives that focus on improving the quality of life and well-being of all people (Diener & Seligman, 2004). Positive thinking is a highly researched subject in positive psychology that has demonstrated a positive influence on subjective well-being (Caprara & Steca, 2005), prevents stress-related loss of meaning/self-esteem (Boyraz & Lightsey, 2012), and reduces frequency of worry in people with Generalized Anxiety Disorder (Eagleson, Hayes, Matthews, Perman, & Hirsch, 2016). This study contributes to the literature on positive thinking by providing a viable method for expansion and celeration in positive thinking related to personal qualities. The single subject data reveal that the treatment was capable of expanding the intraverbal repertoires and rates related to positive thinking for all students. All increased rates of positive thinking were also maintained throughout the treatment. Moreover, student engagement in problem behaviors decreased throughout the course of the treatment, while engagement in more desirable classroom behavior increased.

Teacher noncompliance may be due to lack of proper training in behavioral principles and effectiveness of shaping behaviors through praise. Teacher noncompliance may also function for escape of the additional classroom tasks involved in the study, such as praise delivery and reporting of targeted behaviors. A future study that requires the facilitator to make in-class observations of the praise delivery may help prevent the teacher's escape of treatment compliance, as evidenced by research on escape extinction (McKerchar & Abby, 2012). It is recommended for consistency of practice and post-treatment effectiveness that teachers be properly trained on teaching new behaviors to students, whether it is through praise or any other evidence-based method.

REFERENCES

Allday, R. A., & Pakurar, K. (2007). Effects of teacher greetings on student on-task behavior. *Journal of Applied Behavior Analysis, 40*, 317-320.

Anderson, G. (2001). *Controlling Ourselves*. Los Angeles, CA: Anderson & Anderson, A.P.C.

Axelrod, S., & Apsche, J. (Eds.). (1983). *The effects of punishment on human behavior*. New York: Free Press.

Barret, E. R., & Davis, S. (1995). Perceptions of beginning teachers' inservice needs in classroom management. *Teacher Education and Practice, 11*(1), 22-27.

Barklay, K. H., & Boone, E. (1997). Inviting parents to join in the educational process: What research tells us about parental involvement. *Community Education Journal, 24*(1-2), 16-18.

Barrish, H. H., Saunders, M., Wolf, M. M. (1969). Good behavior game: Effects of individual contingencies for group consequences on disruptive behavior in a classroom. *Journal of Applied Behavior Analysis, 2,* 119-124.

Barton, E. J. (1981). Developing sharing: An analysis of modeling and other behavioral techniques. *Behavior Modification, 5*, 386-398. doi: 10.1177/014544558153007

Bodine, R. J., Crawford, D. K., & Schrumpf, F. (1994). *Creating the peaceable school: A comprehensive program for teaching conflict resolution*. Champaign, IL: Research Press.

Boyraz, G., & Lightsey, O. R. (2012). Can positive thinking help? Positive automatic thoughts as moderators of the stress-meaning relationship. *American Journal of Orthopsychiatry, 82*(2), 267-277. doi: 10.1111/j.1939-0025.2012.01150.x

Brophy, J. (1981). Teacher praise: A functional analysis. *Review of Educational Research, 51*, 5-32. doi: 10.3102/00346543051001005

Broussard, C. D., & Northup, J. (1995). An approach to functional assessment and analysis of disruptive behavior in general education classrooms. *School Psychology Quarterly, 10*, 151-164.

Brown, K. M., Willis, B. S., & Reid, D. H. (1981). Differential effects of supervisor verbal feedback and feedback plus approval on institutional staff performance. *Journal of Organizational Behavior Management, 3,* 57-68. doi: 10.1300/J075v03n01_05

Calkin, A. B. (2005). Precision Teaching: The Standard Celeration Charts. *The Behavior Analyst Today, 6*(4), 207-213.

Caprara, G. V., Delle Fratte, A., & Steca, P. (2002). Determinanti personali del benessere in adolescenza: Indicatori e predittori [Personal determinants of adolescents' well-being: Indicators and Predictors]. *Psicologia Clinica dello Sviluppo, 2,* 203-223.

Caprara, G. V., & Steca, P. (2005). Affective and social self-regulatory efficacy beliefs as determinants of positive thinking and happiness. *European Psychologist, 10*(4), 275-286. doi: 10.1027/1016-9040.10.4.275

Carnine, D. W. (1976). Effects of two teacher presentation rates on off-task behavior, answering correctly, and participation. *Journal of Applied Behavior Analysis, 9*, 199-206.

Chandler, L. K., Lubeck, R. C., & Fowler, S. A. (1992). Generalization and maintenance of preschool children's social skills: A critical review and analysis. *Journal of Applied Behavior Analysis, 25*, 415-428.

Colvin, G. Kame'enui, F. J., & Sugai, G. (1993). Reconceptualizing behavior management and school-wide discipline in general education. *Education and Treatment of Children, 16*, 361-381.

Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). Applied behavior analysis (2nd ed.). Upper Saddle River, NJ: Pearson.

DiCarlo, C. F., & Reid, D. H. (2004). Increasing pretend toy play of toddlers with disabilities in an inclusive setting. *Journal of Applied Behavior Analysis, 37*, 197-207. doi: 10.1901/jaba.2004.37-197

Diener, E., & Seligman, M. E. P. (2004). Beyond money. Toward an economy of well-being. *Psychological Science in the Public Interest, 5,* 1-31.

Dozier, C. L., Iwata, B. A., Thomason-Sassi, J., Worsdell, A. S., & Wilson, D. M. (2012). A comparison of two pairing procedures to establish praise as a reinforcer. *Journal of Applied Behavior Analysis, 45*, 721-735. doi: 10.1901/jaba.2012.45-721

Eagleson, C., Hayes, S., Matthews, A., Perman, G., & Hirsch, C. R. (2016). The power of positive thinking: pathological worry is reduced by thought replacement in Generalized Anxiety Disorder. *Behavior Research and Therapy, 78,* 13-18.

Ebner, E. (1965). Verbal conditioning in schizophrenia as a function of degree of social interaction. *Journal of Personality and Social Psychology, 5*, 528-532. doi: 10.1037/h0021765

Emmer, E. T. (1994). Towards an understanding of the primacy of classroom management and discipline. *Teaching Education, 6*(1), 65-69.

Fairbanks, S., Sugai, G., Guardino, S., & Lathrop, M. (2007). Response to intervention: Examining classroom behavior support in second grade. *Exceptional Children, 73*, 288-310.

Gable, R. A., Hendrickson, J. M., Young, C. C., Shores, R. E., & Stowitschek, J. J. (1983). A comparison of teacher approval and disapproval statements across categories of exceptionality. *Journal of Special Education Technology, 6*(1), 15-22.

Gersten, R., Vaughn, S., Deshler, D., & Schiller, E. (1997). What we know about using research findings: Implications for improving special education practice. *Journal of Learning Disabilities, 30*, 466-476.

Gottfredson, D. C., Gottfredson, G. D., & Hybl, L. G. (1993). Managing adolescent behavior: A multiyear, multischool study. *American Educational Research Journal, 30*, 179-215.

Hagopian, L. P., Wilson, D. M., & Wilder, D. A. (2001). Assessment and treatment of problem behavior maintained by escape from attention and access to tangible items. *Journal of Applied Behavior Analysis, 34*, 229-232. doi: 10.1901/jaba.2001.34-229

Hart, B., & Rogers-Warren, A. (1978). A milieu approach to teaching language. In R. L. Schiefelbusch (Ed.), *Language intervention strategies* (pp. 193-235). Baltimore: University Park Press.

Hart, B. M., & Risley, T. R. (1975). Incidental teaching of language in the preschool. *Journal of Applied Behavior Analysis, 8*, 411-420.

Heaviside, S., Rowand, C., Williams, C., & Farris, E. (1998). Violence and discipline problems in U.S. Public Schools: 1996-97 (NCES 98-030). Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Johnson, D. W., & Johnson, R. T. (1996). Conflict resolution and peer mediation programs in elementary and secondary schools: A review of the research. *Review of Educational Research, 66*, 459-506.

Kern, L., & Clemens, N. H. (2007). Antecedent strategies to promote appropriate classroom behavior. *Psychology in the Schools, 44*, 65-75.

Kearney, P., Plax, T. G., Sorenson, G., & Smith, V. R. (1988). Experienced and prospective teachers' selections of compliance-gaining messages for "common" student misbehaviors. *Communication Education, 37*, 150-164.

Kellam, S. G., Mackenzie, A. C. L., Brown, C. H., Poduska, J. M., Wang, W., Petras, H., Wilcox, H. C. (2011). The good behavior game and the future of prevention and treatment. *Addiction Science & Clinical Practice,* 73-84.

Keogel, R. L., O'Dell, M. C., & Keogel, L. K. (1987). A natural language teaching approach for nonverbal autistic children. *Journal of Autism and Developmental Disorders, 17*, 187-200.

Lewis, T. J., & Sugai, G. (1996). Functional assessment of problem behavior: A pilot investigation of the comparative and interactive effects of teacher and peer social attention on students in general education settings. *School Psychology Quarterly, 11*(1), 1-19.

Lovaas, O. I., Freitag, G., Kinder, M. I., Rubenstein, B. D., Schaeffer, B., & Simmons, J. Q. (1966). Establishment of social reinforcers in two schizophrenic children on the basis of food. *Journal of Experimental Child Psychology, 4*, 109-125.

MacMillan, D. L., Forness, S. R., & Trumball, B. M. (1973). The role of punishment in the classroom. *Exceptional Children, 40*, 85-96.

McKerchar, P. M., & Abby, L. (2012). Systematic evaluation of variables that contribute to noncompliance: a replication and extension. *Journal of Applied Behavior Analysis, 45,* 607-611. doi: 10.1901/jaba.2012.45-607

McLaughlin, T. F. (1982). The effects of teacher praise on accuracy of math performance for an entire special education classroom. *Behaviorally Engineering, 7*, 81-86.

Meyer, G. R., Mitchell, I. K., Clementi, T., & Clement-Robertson, E. (1993). A dropout prevention program for at-risk high school students: Emphasizing consulting to promote positive climates. *Education and Treatment of Children, 16*, 135-146.

Michael, J. (1982). Distinguishing between discriminative and motivational functions of stimuli. *Journal of the Experimental Analysis of Behavior, 37*, 149-155.

Michael, J. (1993). Establishing operations. *The Behavior Analyst, 16*, 191-206.

Morrison, J. A., Olivos, K., Dominguez, G., Gomez, D., & Lena, D. (1993). The application of family systems approaches to school behavior problems on a school-level discipline board: An outcome study. *Elementary School Guidance and Counseling, 27*, 258-272.

Nelson, C M., & Rutherford, R. B. (1987). Behavioral interventions for behaviorally disordered children. In M. C. Wang, M. C. Reynolds, & H. J. Walberg (Eds.). *The handbook of special education: Research and practice, 2*, 125-154. Oxford, England: Pergamon.

Pavlov, I. P. (1927). *Conditioned reflexes*. London: Oxford University Press.

Peterson, G. J., Beekley, C. Z., Speaker, K. M., & Pietrzak, D. (1996). An examination of violence in three rural school districts. *Rural Education, 19*(3), 25-32.

Pilarski, M. J. (1994). Student teachers: Underprepared for classroom management? *Teaching Education, 6*, 77-80.

Shores, R. E., Gunter, P. L., & Jack, S. L. (1993). Classroom management strategies: Are they setting events for coercion? *Behavioral Disorders, 18*, 92-102.

Sigafoos, J., Doss, S., & Reichle, J. (1989). Developing mand and tact repertoires in persons with severe developmental disabilities using graphic symbols. *Research in Developmental Disabilities, 10*, 183-200. doi: 10.1016/0891-4222(89)90006-1

Skiba, R. J., & Peterson, R. L. (1999). The dark side of zero tolerance: Can punishment lead to safe schools? *Phi Delta Kappan, 80*, 372-382.

Skiba, R. J., & Peterson, R. L. (2000). School Discipline at a Crossroads: From Zero Tolerance to Early Response. *Exceptional Children, 66*(3), 335-347.

Skiba, R. J., Peterson, R. L., & Williams, T. (1997). Office referrals and suspension: Disciplinary intervention in middle schools. *Education and Treatment of Children, 20*(3), 1-21.

Skinner, B. F. (1953). *Science and human behavior*. New York: Free Press.

Skinner, B. F. (1957). *Verbal behavior*. Brattleboro, VT: Echo Point Books & Media.

Sprick, R. S., Borgmeier, C., Nolet, V. (2002). Prevention and management of behavior problems in secondary schools. In M. A. Shinn, H. M. Walker & G. Stoner (Eds.), *Interventions for academic and behavior problems II: Preventive and remedial approaches* (pp.373-401). Bethesda, MD: National Association of School Psychologists.

Sundberg, M. & Partington, J. (1998). *Teaching Language to Children with Autism and Other Developmental Disabilities*, Danville, CA: Behavior Analysts, Inc.

Taylor, J. C., & Carr, E. G. (1992). Severe problem behaviors related to social interaction. *Behavior Modification, 16*, 305-335. doi: 10.1177/01454455920163002

Theobold, D. E., & Paul, G. L. (1976). Reinforcing value of praise for chronic mental patients as a function of historical pairing with tangible reinforcers. *Behavior Therapy, 7*, 192-197.

Tobin, T., Sugai, G., & Colvin, G. (1996). Patterns in middle school discipline records. *Journal of Emotional and Behavioral Disorders, 4*(2), 82-94.

U.S. Department of Education, National Center for Education Statistics. (2015). Indicators of School Crime and Safety: 2014. Retrieved from https://nces.ed.gov/fastfacts/display.asp?id=49

U.S. Department of Education, National Center for Education Statistics. (2013). 1999-2000, 2003-04, 2005-06, 2007-08, 2009-10 School Survey on Crime and Safety (SSOCS). Retrieved from https://nces.ed.gov/programs/digest/d14/tables/dt14_229.10.asp

Williams, B. A. (1994). Conditioned reinforcement: Experimental and theoretical issues. *The Behavior Analyst, 17*, 261-285.

Wood, F. H., & Braaten, S. (1983). Developing guidelines for the use of punishing interventions in the schools. *Exceptional Children Quarterly, 3*(4), 68-75.

APPENDIX A

APPENDIX A

CONDITIONED PRAISE WORDS

1. Good listener!
2. Good note-taker!
3. Smart thinking!
4. Very helpful!
5. Very funny!
6. Happy!
7. Creative!
8. Fun!
9. Great focus!
10. Respectful!
11. Hard worker!
12. Very fast!
13. Very strong!
14. Great self-control!
15. Very kind!

APPENDIX B

APPENDIX B

SCATTERPLOT

Date(s): _____ Observer: _____

Behavior(s) of Concern:

Provide a tally mark for each observed instance of the behavior.

Setting or Class	Time(s)	Monday	Tuesday	Wednesday	Thursday	Friday	Total Times Observed
1st							
2nd							
3rd							
4th							
5th							
6th							
7th							
8th							

Observation Notes

(e.g., specific circumstances under which the behavior occurred, particular antecedents that triggered the behavior, particular consequences of the behavior, times/conditions during which the behavior does not occur, patterns observed, etc.)

_____
_____
_____
_____

BIOGRAPHICAL SKETCH

Jose A. Zamudio currently works as a facilitator of a psycho-educational program that targets student misbehavior for the PSJA School District. Mr. Zamudio also works as a Registered Behavioral Technician (RBT) for RGV Behavioral Consultants where he dedicates his time implementing applied behavior analytic (ABA) therapies for clients in need of behavioral interventions. In addition, Mr. Zamudio attends annual ABA conferences where he enriches his skill sets and knowledge of current innovations in the field of ABA.

Mr. Zamudio attended the University of Texas – Pan American as an undergraduate from August 2008 to August 2013, where he received a Bachelor's degree in Biology with a minor in Chemistry and a Bachelor's degree in Psychology with a minor in Medical Spanish. Between August 2013 and May 2016, Mr. Zamudio attended the University of Texas – Rio Grande Valley where he received a Master's degree in Experimental Psychology with a certification in Applied Behavior Analysis.

Mr. Zamudio lives in the Rio Grande Valley located at the southern tip of Texas, and his current residential address is: 2005 S. 41st Street, McAllen, TX 78503.